

**HSCC (India) Limited
As Executing Agency of
MINISTRY OF HEALTH & FAMILY WELFARE,
NEW DELHI**

TENDER

**FOR
Construction of Super Speciality Block at
Indira Gandhi Medical College, Shimla
(Himanchal Pradesh)
under
Pradhan Mantri Swasthya Suraksha Yojana
(PMSSY)**

VOLUME – V

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Executing Agency



HSCC (INDIA) LTD.

(CONSULTANTS & ENGINEERSFORMEGAHOSPITALS& LABORATORIES)

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Tender No. HSCC/PMSSY-III/Shimla /2017

Project Name: Project Name: Construction of Super Speciality Block at Shimla (Under PMSSY)

Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
1.00		Earth work						
1.01	2.6	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 500 m and lift upto 1.5 m, as directed by Engineer-in-charge.						
a)	2.6.1	All kinds of soil including building rubbish/debris etc.	9599.00	Cum	125.95		1208994.05	
b)	2.7.1	Ordinary Rock	7201.00	Cum	221.05		1591781.05	
c)	2.7.3	Hard rock (Blasting Prohibited)	7201.00	Cum	619.80		4463179.80	
1.02	2.8	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 500 m.						
a)	2.8.1	All kinds of soil.	57.00	Cum	166.40		9484.80	
b)	2.9.1	Ordinary rock	55.00	Cum	275.85		15171.75	
c)	2.9.3	Hard rock (blasting prohibited)	55.00	Cum	656.70		36118.50	
1.03	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 500 m and all lifts.	13366.00	Cum	125.75		1680774.50	
1.04	2.26	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials.						
a)	2.26.1	All kinds of soil.	7043.00	Cum	51.75		364475.25	
1.05	2.27	Supplying and filling in plinth with Zone V sand under floors, including watering, ramming, consolidating and dressing complete.	275.00	Cum	917.75		252381.25	

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1.00	1A	2	3	4	5	6	7	8
1.06	2.2/H&L	Supplying and stacking of good earth at site including royalty and carriage up to 1 Km (earth measured in stacks will be reduced by 20% for pavement).	5018.00	Cum	332.55		1668735.90	
Total of sub-head							11291096.85	

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1.00	1A	2	3	4	5	6	7	8
2.00		CONCRETE WORK						
2.01	4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :						
a)	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size).	5.00	Cum	5481.95		27409.75	
b)	4.1.8	1:4:8 (1 Cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size)	545.00	Cum	4478.15		2440591.75	
c)	4.1.10	1:5:10 (1 cement : 5 coarse sand (zone-III): 10 graded stone aggregate 40 mm nominal size).	248.00	Cum	4209.05		1043844.40	
2.02	4.2	Providing and laying cement concrete in retaining walls, return walls,walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses,parapets, coping, bed blocks, anchor blocks, plain window sills, fillets,sunken floor etc., up to floor five level, excluding the cost of centering,shuttering and finishing :						
a)	4.2.3	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	54.00	Cum	6547.70		353575.80	
2.03	4.10	Providing and laying damp-proof course 40mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand (zone-III): 4 graded stone aggregate 12.5mm nominal size).	424.00	Sqm	263.10		111554.40	
2.04	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification	135.72	per 50 kg cement	47.95		6507.77	
2.05	4.13	Providing & applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	424.00	Sqm	91.90		38965.60	

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1.00	1A	2	3	4	5	6	7	8
		Total of sub-head					4022449.47	

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1.00	1A	2	3	4	5	6	7	8
3.00		REINFORCED CEMENT CONCRETE						
3.01	5.33	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including 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 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)	5.33.1	All works upto plinth level.	4705.00	Cum	6446.45		30330547.25	
b)	5.33.2	All works above plinth level upto floor V level.	7556.00	Cum	7250.05		54781377.80	
3.02	5.40	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using fly ash and cement content as per approved design mix, and 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 settingof concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge.						

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Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
		NOTE- (1) Cement content considered in this item is @ 330 kg/cum.Excess/ less cement used as per design mix is payable/ recoverable separately.“ (2) Fly ash conforming to grade I of IS 3812 (Part-1) only be used as part replacement of OPC as per IS : 456. Uniform blending with cement to be ensured in accordance with clauses 5.2 and 5.2.1 of IS:456 -2000 in the items of BMC and RMC.						
a)	5.40.1	All works up to Plinth level.	433.00	Cum	6691.85		2897571.05	
b)	5.40.2	All works above plinth & up to floor V level.	830.00	Cum	7495.40		6221182.00	
		Note :- The above item shall be used judiciously where specified quality of Fly Ash is available for mixing in concrete. Also, the guidelines issued by CDO, CPWD, vide circular no. CDO/SE(RR)/Fly Ash (Main)/102 dated 9th April 2009 shall be followed in such cases.						
3.03	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/ cum)	2746.00	Cum	69.50		190847.00	
3.04	5.9	Centering and shuttering including strutting, propping etc. and removal of form for all heights :						
a)	5.9.1	Foundations, footings, bases of columns, etc. for mass concrete	906.00	Sqm	193.95		175718.70	
b)	5.9.2	Walls (any thickness) including attached pilasters, buttersesses,plinth and string courses etc.	7295.00	Sqm	378.60		2761887.00	
c)	5.9.3	Suspended floors, roofs, landings, balconies and access platform	24191.00	Sqm	422.30		10215859.30	
d)	5.9.4	Shelves (Cast in situ)	251.00	Sqm	422.30		105997.30	
e)	5.9.5	Lintels, beams, plinth beams, qirders, bressumers and cantilevers	17272.00	Sqm	342.90		5922568.80	
f)	5.9.6	Columns, Pillars, Piers, Abutments, Posts and Struts	11578.00	Sqm	467.85		5416767.30	
g)	5.9.7	Stairs, (excluding landings) except spiral-staircases	889.00	Sqm	419.35		372802.15	

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1.00	1A	2	3	4	5	6	7	8
h)	5.9.15	Small lintels not exceeding 1.5 m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like	596.00	Sqm	193.95		115594.20	
i)	5.9.19	Weather shade, Chajjas, corbels etc., including edges	621.00	Sqm	521.75		324006.75	
3.05	5.11	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).						
a)	5.11.1	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured)	24175.00	Sqm	171.50		4146012.50	
3.06	5.22	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete level.						
a)	5.22.6	Thermo-Mechanically Treated bars.	2272429.00	kg	56.60		128619481.40	
3.07	5.35	Add for using extra cement in the items of design mix over and above the specified cement content therein.	2571.00	Quintal	672.75		1729640.25	
3.08	5.38	Extra for R.C.C./ B.M.C/ R.M.C. work above floor V level for each four floors or part thereof.	3835.00	Cum	232.30		890870.50	

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1.00	1A	2	3	4	5	6	7	8
3.09		Providing and fixing of expansion joint system related with floor location as per drawings and direction of Engineer-In-Charge. The joints system will be of extruded aluminum base members, self aligning / self centering arrangement and support plates etc. as per ASTM B221-02. The system shall be such that it provides floor to floor /floor to wall expansion control system for various vertical locations in load application areas that accommodates multi directional seismic movement without stress to it's components. System shall consist of metal profiles with a universal aluminum base member designed to accommodate various project conditions and finish floor treatments. The cover plate shall be designed of width and thickness required to satisfy projects movement and loading requirements and secured to base members by utilizing manufacturer's pre-engineered self-centering arrangement that freely rotates / moves in all directions. The Self - centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. Provision of Moisture Barrier Membrane in the Joint System to have watertight joint is mandatory requirement all as per the manufactures design and as approved by Engineer -in- Charge. (Material shall conform to ASTM 6063).						
a)	5.44.2	Floor Joint of 150 mm gap	173.00	Mtr	5829.95		1008581.35	

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1.00	1A	2	3	4	5	6	7	8
3.10	5.45	Providing and fixing of expansion joint system related with wall joint (internal/ external) location as per drawings and direction of Engineer-In-Charge. The joints shall be of extruded aluminum base members, self aligning /centering arrangement and support plates as per ASTM B221-02. The material shall be such that it provides an Expansion Joints System suitable for vertical wall to wall/ wall to corner application, both new and existing construction in office Buildings & complexes with no slipping down tendency amongst the components of the Joint System. The Joint System shall utilize light weight aluminum profiles exhibiting minimal exposed aluminum surfaces mechanically snap locking the multicellular to facilitate movement. (Material shall conform to ASTM 6063.)						
a)	5.45.2	Wall Joint of 150 mm gap	201.00	Mtr	4436.15		891666.15	

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1.00	1A	2	3	4	5	6	7	8
3.11		Providing and fixing of expansion joint system of approved make and manufacture for various roof locations as per approved drawings and direction of Engineer-In-Charge. The joints shall be of extruded aluminum base members with, self aligning and self centering arrangement support plates as per ASTM B221-02. The system shall be such that it provides water tight roof to roof /roof to corner joint cover expansion control system that is capable of accommodating multidirectional seismic movement without stress to its components. System shall consist of metal profile that incorporates a universal aluminum base member designed to accommodate various project conditions and roof treatments. The cover plate shall be designed of width and thickness required to satisfy movement and loading requirements and secured to base members by utilizing manufacturer's pre-engineered self-centering arrangement that freely rotates / moves in all directions. The Self centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. The Joint System shall resists damage or deterioration from the impact of falling ice, exposure to UV, airborne contaminants and occasional foot traffic from maintenance personnel. Provision of Moisture Barrier Membrane in the Joint System to have water tight joint is mandatory requirement. (Material shall confirm to ASTM 6063.)						
a)	5.46.2	Roof Joint of 150 mm gap	40.00	Mtr	4900.75		196030.00	
		Total of sub-head					257315008.75	

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1.00	1A	2	3	4	5	6	7	8
4.00	6.00	Walls and Partitions						
4.01	6.1	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:						
a)	6.1.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	349.00	Cum	4751.65		1658325.85	
4.02	6.47	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineerin-Charge. (The payment of RCC band and reinforcement shall be made for seperately).	1269.00	Cum	5687.10		7216929.90	
4.03	26.46	Providing and fixing in position, 200 mm thick factory made Expanded Polystyrene Core (EPS Core) wall panels consisting of EPS core sandwiched between two Engineered sheets of welded wire fabric mesh duly finished with shortcrete materials on outer faces. The fabric mesh shall be made of 3 mm dia G.I. wire mesh with 50 mm pitch in both the directions and on both faces of the wall, kept at 120-135 mm gap and connected by the zig zag G.I. wire of 3 mm dia at alternate row by welding (at an angle ranging from 50-70 degree) . The EPS core shall consist of 100 mm thick EPS of density not less than 20 kg/ per cum. Both the outer faces of the panel shall be finished by applying the layer of 50 mm thick cement mortar 1:3 {1 cement: 3 coarse sand (not having more than 40% stone chips of size upto 6 mm)} with the help of shotcreting/guniting equipment etc at a pressure not less than 1 bar (100Kn/m2) and both surfaces finished with trowel. Fixing operations of wall panels shall be completed in all respect as per drawings and specifications and under the overall direction of the Engineer-in-charge.	1440.00	Sqm	3246.15		4674456.00	

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1.00	1A	2	3	4	5	6	7	8
4.04	6.34	Brick work with non modular fly ash bricks conforming to IS:12894, class designation 10 average compressive strength in super structure above plinth level up to floor V level in :						
a)	6.34.2	Cement mortar 1:6 (1 cement : 6 Coarse sand)	3006.00	Cum	6167.20		18538603.20	
4.05	6.38	Providing and laying autoclaved aerated cement blocks masonry with 100 mm thick AAC blocks in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos 6 mm dia M.S. bars at every third course of masonry work.	503.00	cum	6818.60		3429755.80	
4.06	6.5	Extra for brick work / AAC block masonry / Tile brick masonry in superstructure above floor V level, for each four floors or part thereof by mechanical means.	1909.00	Cum	205.45		392204.05	
4.07	6.4	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 :						
a)	6.4.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	137.00	Cum	5582.85		764850.45	
4.08	6.13	Half brick masonry 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.						
a)	6.13.2	Cement mortar 1:4 (1 cement :4 coarse sand)	100.00	Sqm	684.20		68420.00	
4.09	6.15	Extra for providing and placing in position 2 Nos 6mm dia. M.S. bars at every third course of half brick masonry.	100.00	Sqm	56.85		5685.00	

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1.00	1A	2	3	4	5	6	7	8
4.10		Providing and fixing partition consisting of G.I. Frame and required board, including providing and fixing of frame work made of special section power pressed/ roll form G.I. sheet with zinc coating of 120 gms/sqm(both side inclusive), consisting of floor and ceiling channel 72mm wide having equal flanges of 32 mm and 0.50 mm thick, fixed to the floor and ceiling at the spacing of 610 mm centre to centre with dash fastener of 12.5 mm dia meter 50 mm length or suitable anchor fastener or metal screws with nylon plugs and the studs 70 mm wide having one flange of 34 mm and other flange 36 mm and 0.50 mm thick fixed vertically within flanges of floor and ceiling channel and placed at a spacing of 610 mm centre to centre by 6 mm dia bolts and nuts, including fixing of studs along both ends of partition fixed flush to wall with suitable anchor fastener or metal screws with nylon plugs at spacing of 450 mm centre to centre, and fixing of boards to both side of frame work by 25 mm long dry wall screws on studs, floor and ceiling channels at the spacing of 300 mm centre to centre						
		The boards are to be fixed to the frame work with joints staggered to avoid through cracks, noggin channel of 70 mm width (0.5 mm thick having two flanges of 40 mm each) to be provided at the horizontal joints of two boards, fixed to the studs using metal to metal flat head screws, including jointing and finishing to a flush finish with recommended jointing compound ,jointing tape, angle beads at corners (25 mm x 25 mm x 0.5 mm), joint finisher and two coats of primer suitable for board as per manufacture's specification and direction of engineer in charge all complete						
	NS	98 mm overall thickness partition with 13 mm thick double skin impact resistant Board conforming to EN 520:2004 Type D,F,I & R including providing and filling 50 mm thick mineral wool slab of density 32 Kg/M3.	1093.00	Sqm		2409.00		2633037.00

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1.00	1A	2	3	4	5	6	7	8
4.11		Providing & fixing Classique Invincible Toilet Cubicle of Greenlam Sturdo / merino or equivalent approved make of sizes as per drawing which includes 600 mm door size width made of heat, bacteria, water, chemical ,scratch, impact and anti bacterial resistant 12 mm thick solid compact laminate panels (tested by Shriram Test House or equivalent approved laboratory). Finish of the compact laminate should be Suede/*Raw Silk or as approved by the engineer in charge, which includes door, pilasters & intermediate panels finished with approved texture/shade as per the details drawings & as per IS 2046 (Indian Standard) and as per fire retardant BS-476/97 Standard.						
		The item also includes providing and fixing in position necessary hardware made out of Stainless steel (Grade 304) as per manufacturer's specification & as approved by the Architect/ Engineer, like (1) Door Knop, (2) Gravity Hinges, (3) Thumb turn lockset indicators, (4) Coat hooks, (5) U- Channels, (6) SS-Shoe Box Plate (7) MS- Base Plate, (8) Top rail with Corner conntector (9) Rubber noise deafening tape (10) Screw & wall Plugs etc all complete to the satisfaction of engineer in charge.						
	NS	The top fitting should consist of SS round top rail which will get fixed with pilasters,with SS panel tube holder, SS corner bend (connected with top rail) will be used on the corner of cubicle in absence of brick wall, SS wall fixing is used on the wall which will hold the SS top rail. All screws will be of 304 Grade stainless steel with satin finish. All pilasters are supported by stainless steel bottom cladding.The base of stainless steel botoom cladding will be anchored to floor with a clearance height upto 110 mm. (Surface area of partitions including door shall be measured for payment. The quoted rate should be for the complete item and nothing extra is payable in this account.	643.00	Sqm		8566.00		5507938.00
		Total of sub-head					36749230.25	8140975.00

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1.00	1A	2	3	4	5	6	7	8
5.00		DOORS & WINDOWS						
5.01	21.1	Providing and fixing aluminium work for doors, windows, ventilators ,louvers 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 and paneling to be paid for separately)						
a)	21.1.1	For fixed portion						
i)	21.1.1.3	Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	29046.00	Kg	391.80		11380222.80	
b)	21.1.2	For shutters of doors, windows & ventilators and louvers 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)						
i)	21.1.2.3	Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)	9096.00	Kg	452.40		4115030.40	
5.02	21.8	Filling the gap in between aluminium frame & adjacent RCC/ Brick/Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete.						
a)	21.8.1	Upto 5mm depth and 5 mm width	2205.00	Metre	62.45		137702.25	

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1.00	1A	2	3	4	5	6	7	8
5.03	21.10	Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partition etc. with 6 mm thick clear float glass both side, having 12 mm air gap, including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. as per specifications, drawings and direction of Engineer-in-charge complete.	1556.00	Sqm	3176.20		4942167.20	
5.04	21.3	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):						
a)	21.3.2	With float glass panes of 5.50 mm thickness	395.00	Sqm	1003.95		396560.25	
5.05	21.17	Providing and fixing anodised aluminium grill (anodised transparent or dyed to required shade according to IS: 1868 with minimum anodiccoating of grade AC 15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P.brass/ stainless steel screws @ 200 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment).	970.00	kg	408.85		396584.50	
5.06	Based on DSR	Extra for polyester powder coating 50 micron on Aluminium Grill instead of anodising vide item no.5.06 above	970.00	kg	35.00		33950.00	
5.07	9.21	Providing and fixing ISI marked flush door shutters conforming to IS :2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters:						

Project Name: Project Name: Construction of Super Speciality Block at Shimla (Under PMSSY)

Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
a)	9.21.2	30 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	1325.00	Sqm	1559.75		2066668.75	
5.08	Based on DSR 9.23	Extra for providing lipping with 2nd class teak wood battens 6 mm depth on all edges of flush door shutters (over all area of door shutter to be measured).including polishing etc complete.	1325.00	Sqm	88.00		116600.00	
5.09	9.24	Extra for providing vision panel not exceeding 0.1 sqm in all type of flush doors (cost of glass excluded) (overall area of door shutter to be measured):						
a)	9.24.1	Rectangular or square.	656.00	Sqm	162.60		106665.60	
5.10	9.12	Extra for providing frosted glass panes 4 to 6 mm thick instead of ordinary float glass panes of same thickness in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).	21.00	Sqm	74.35		1561.35	
5.11	9.25	Extra if louvers (not exceeding 0.2 sqm) are provided in flush door shutters (overall area of door shutters to be measured).						
a)	9.25.1	Decorative type door	50.00	Sqm	377.50		18875.00	
5.12	9.26	Extra for cutting rebate in flush door shutters (Total area of the shutter to be measured).	50.00	Sqm	127.75		6387.50	
5.13	14.6	Providing and fixing glass panes, with wooden fillets wherever necessary:						
a)	14.6.1	Float glass panes of thickness 4 mm	21.00	Sqm	852.60		17904.60	
5.14	9.127	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt / suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.						
a)	9.127.2	1.0 mm thick.	2647.00	Sqm	518.00		1371146.00	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
5.15	NS	Providing and installation of fully insulated wooden fire rated shutter of 120min. fire rating conforming to BS: 476 part 22 and IS:3614 Part II as per the prototype tested and certified by CBRI Roorkee, of minimum 50 mm thickness, comprising of 75mm x 44mm hardwood internal timber frame work, with infill of 96 kg/m ³ , ceramic fiber blankets, coated with intumescent coating on both sides for insulation. The coated insulation shall be sandwiched between 12mm thick, Non combustible Boards (Calcium Silicate of approved quality and manufacture) on both sides (edge to edge on internal Hardwood frame) and cladded with 3mm thick commercial ply of approved quality & 1mm thick laminate of approved brand and manufacture on both sides, with 50mm x 14mm 2nd class teak wood lipping all round the shutter.						
		The shutter is suitable for mounted on the door frame, as per the item given below. Both frame and shutter shall be fitted with fire & smoke intumescent seal of Viper or equivalent make of size 20 x 4mm on all the three sides except bottom. The pasting of the ply/veneer/laminate should be done using automatic machine and should be free from any nails or perforations. The board shall be Resistant to vermin, mould growth, minor impact, abrasion and short term water attack. The shutter shall be fixed with the frame with the help of SS 304 grade ball bearing hinges of size 100x75x3mm of approved quality with necessary screws and making cut out for vision panel. Provisions/reinforcement for fixing all fixtures shall be built in on the door prior to the supply. The rate shall include all the materials, labour and T&P for the works described in the item above.						
a)	a)	Single/Double Shutter	385.00	Sqm		9132.00		3515820.00

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
5.16	NS	Providing and fixing door frames as per BS: 476 part 22, IS:3614 Part II as per the prototype certified by CBRI Roorkee made out of 2nd class Teak Wood (Ivory Coast)frame of section 120 X 70 mm for fire resistant doors of 120 minutes fire rating, with heat activated intumescent fire seal strips of size 20 x 4 mm(for smoke sealing) provided in grooves on all three sides of the frame with one coat of approved brand of fire retardant primer including two coats of fire retardant paint FR 881or equivalent un thinned on cleared hard wood surface of door frames (@3.5 sq.m. per litre per coat) including preperation of base surface as per recommendations of manufacturer to make the surface fire retardant, including fixing the frame with 8 nos. 100 mm long, 10 mm dia metal dash fastners complete as per directions of the Engineer in charge NOTE:- cost of fire seal strips, dash fastners are included in the item. Nothing extra shall be paid if size of any component of material exceeds the limit mentioned in the item to achieve desired fire rating.	632.00	Metre		2694.00		1702608.00
5.17	NS	Providing and fixing UL listed door Co-ordinator of approved Make for coordination of double leaf 120 min fire rated doors, of approved brand and manufacture.	55.00	Each		11760.00		646800.00
5.18	NS	Supply & fixing of Fire-stop Fire sealing System Board Type(barriers) of approved make for sealing of floors, wall openings under control panels for the purpose of compartmentation.The FPSS consists of 100mm thick mineral wool insulation pad of approved make having density of 48 kg/m3 coated with FR in tumescent compound encased with 10 mm thick calcium silicate board of approved make, sealed with intumescent Fire Seal Putty of approved Make. The system is coated and fixed with openings with the help of slotted angles of size 40x40mm of 16 SWG thickness, nutbolts of size 1.5"x8mm Dia. The FPSS system all provide 2 hours fire rating as per IS 12458-1989.After insulation of this system it will be painted with Fire Retardant Paint of approved Make.	102.00	sqm		15027.00		1532754.00

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
5.19	NSR	Providing & fixing 11.0 mm thick sandwich clear glass of approved make tested upto 2 hours fire rating and complied with BS 476: Part 22 as vision panel including cost of fire rated ceramic tape and moulding/beading all complete.	17.00	Sam		49001.00		833017.00
5.20	9.84	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer (having brand logo with IS : 3564, embossed on the body, door weight upto 36 kg to 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.	466.00	Each	388.40		180994.40	
5.21	NS	Providing and fixing SS 304 Aldrop 300 x 16mm of approved quality with necessary provision of anti theft screws. Complete set including the fixing accessories.	157.00	Each		1988.00		312116.00
5.22		Providing and fixing SS304 tower bolts, with necessary screws etc. complete :						
a)	NS	250x10 mm	2163.00	Each		1045.00		2260335.00
b)	NS	150x10 mm	2070.00	Each		760.00		1573200.00
5.23	NS	Providing and fixing SS304 H-Type Pull Handle of Length 457mm, 32mm Diameter and CD 305mm in Satin Steel Finish. Complete set including the fixing accessories.	161.00	Each		2277.00		366597.00
5.24	9.101	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete.						
a)	9.101.2	Twin rubber stopper	320.00	Each	38.00		12160.00	
5.25	NS	Providing and fixing 240mm Europprofile Narrow Stile Mortise Lock of approved quality with necessary , SS tube Lever Handle D Type with Oval rose ring , 70mm Pin Cylinder 1CK. Complete set including the fixing accessories.	316.00	Each		2846.00		899336.00

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
5.26	21.11	Providing and fixing stainless steel (SS 304 grade) adjustable friction windows stays of approved quality with necessary stainless steel screws etc. to the side hung windows as per direction of Engineerin-charge complete.						
a)	21.11.2	255 X 19 mm	2775.00	Each	269.65		748278.75	
5.27	21.15	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete.						
a)	21.15.3	Polyester powder coated minimum thickness 50 micron aluminium	1481.00	Each	54.35		80492.35	
5.28		Providing and fixing of UL listed fire rated single/double leaf panic exit devices tested in accordance with BS EN 1125: 1997 & BS EN 179: 1997, EN 1670 (Corrosion Resistant), & BS 476 Part 22 (for fire rating) with min. one year warrantee.						
a)	NS	Double Leaf Panic Bar Set	55.00	Each		17902.00		984610.00
5.29	NS	Providing and fixing of heavy duty door closer of approved quality for 120 min fire door in accordance with BS:476 Part 22 for fire rating and BS EN 1154 with minimum one year warranty.	80.00	Each		2940.00		235200.00
5.30	NS	Providing and fixing fire rated mortice lock with lever handle with 80 mm long cylinder of approved manufacturer for 120 min fire reated door.	44.00	Each		4312.00		189728.00
5.31	NS	Supply & installation of Panic Trim of approved brand & manufacture for 120 min.fire rated door.	20.00	Each		6141.00		122820.00
5.32	NS	Providing and fixing 300 mm long stainless steel grade 304 D type back to back pull handle of approved make with necessary bolts with alen key arrangement etc complete for 120 min fire rated door.	118.00	Each		1829.00		215822.00

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
5.33	21.4	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.						
a)	21.4.1	With stainless steel cover plate minimum 1.25 mm thickness	78.00	Each	2054.40		160243.20	
5.34	21.12	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.						
a)	21.12.3	Polyester powder coated minimum thickness 50 micron aluminium tubular handle bar	18.00	Each	520.70		9372.60	
5.35	21.16	Providing and fixing aluminium round shape handle of outer dia 100 mm with SS screws etc. complete as per direction of Engineer-incharge						
a)	21.16.3	Polyester powder coated minimum thickness 50 micron aluminium	137.00	Each	74.10		10151.70	
5.36	9.113	Providing and fixing bright finished 100 mm mortice lock with 6 levers without pair of handles of approved quality for aluminium door, with necessary screws etc complete as per direction of Engineer- in-charge.	39.00	Each	473.65		18472.35	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
5.37	9.147A	Providing and fixing factory made uPVC white colour casement/casement cum fixed glazed windows comprising of uPVC multichambered frame, sash and mullion (where ever required) 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), uPVC extruded glazing beads of appropriate dimension, EPDM gasket, stainless steel (SS 304 grade) friction hinges, zinc alloy (white powder coated) casement handles, G.I fasteners 100 x 8 mm size for fixing frame to finished wall, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, mullion (if required) shall be also fusion welded 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 and silicon sealant shall be paid separately)						
		Note: For uPVC frame, sash and mullion extruded profiles minus 5% tolerance in dimension i.e. in depth & width of profile shall be acceptable						
a)	9.147A.6	Casement cum fixed panel window having both end single casement panel, middle fixed panels and at top completely fixed ventilator with S.S friction hinges (350 x 19 x 1.9) made of (big series) frame 67 x 60 mm, sash 67 x 80 mm , & mullion 67 x 80 mm all having	116.00	Sqm	6270.45		727372.20	
5.38	9.148	Providing and fixing stainless steel (SS-304 grade) friction hinges to the side/ top hung uPVC windows, of approved quality, with necessary stainless steel screws etc. as per direction of Engineer-in-charge.						
a)	9.148.2	250 x 19 x 1.9 mm	193.00	Each	270.85		52274.05	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
5.39	9.149	Providing and fixing casement handle made of zinc alloyed (white powder coated) for uPVC casement window with necessary screws etc.complete.	97.00	Each	149.95		14545.15	
5.40	10.6	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters.						
a)	10.6.1	80x1.25 mm M.S. laths with 1.25 mm thick top cover	49.00	sqm	2316.10		113488.90	
5.41	10.7	Providing and fixing ball bearing for rolling shutters.	17.00	Each	379.30		6448.10	
5.42	10.9	Extra for providing grilled rolling shutters manufactured out of 8 mm dia M.S. bar instead of laths as per design approved by Engineer-in-charge, (area of grill to be measured).	20.00	Sqm	313.60		6272.00	
5.43	9.125	Providing and fixing PVC rigid foam sheet 1 mm thick on door shutters (bathroom and W.C. doors) using synthetic rubber based adhesive	53.00	Sqm	846.40		44859.20	
		Total of sub-head					27293451.15	15390763.00

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
6.00		STEEL WORK						
6.01	10.25	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.						
a)	10.25.1	In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required. all complete	896.00	Kg	65.80		58956.80	
b)	10.25.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	9480.00	Kg	85.95		814806.00	
6.02	10.26	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer.						
a)	10.26.1	M.S. tube	6049.00	kq	92.00		556508.00	
6.03	9.48	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.						
a)	9.48.1	Fixed to steel windows by welding.	54.00	kq	104.65		5651.10	
6.04	10.16	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaned washers etc. complete						
a)	10.16.1	Hot finished welded type tubes	78075.00	Kq	90.25		7046268.75	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
6.05	10.28	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-incharge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts,fasteners etc.).	6036.00	Kg	472.40		2851406.40	
6.06	12.50	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (+0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineerin-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	3768.00	Sqm	550.40		2073907.20	
6.07	12.51	Providing and fixing precoated galvanised steel sheet roofing accessories 0.50 mm (+ 0.05 %) total coated thickness, Zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self drilling/ self tapping screws complete :						
a)	12.51.1	Ridges plain (500 - 600mm)	192.00	Sqm	360.45		69206.40	
b)	12.51.2	Flashings/ Aprons.(Upto 600 mm)	768.00	Sqm	332.80		255590.40	
c)	12.51.6	Gutter .(600 mm over all girth)	384.00	Sqm	833.05		319891.20	

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Estimate (Based on DSR 2016)								
Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
		Total of sub-head					14052192.25	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
7.00		FLOORING						
7.01	11.3	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete.						
a)	11.3.1	40mm thick with 20mm nominal size stone aggregate.	1600.00	Sqm	362.60		580160.00	
7.02	11.6	Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement.						
a)	11.6.1	18 mm thick	78.00	Sqm	350.05		27303.90	
7.03	11.23	Marble stone flooring with 18 mm thick marble stone, as per sample of marble approved by Engineer-in-charge, over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry, including rubbing and polishing complete with :						
a)	11.23.2	Raj Nagar plain	100.00	Sqm	1522.60		152260.00	
b)	11.23.5	Udaipur green/Jaiselmer marble	100.00	Sqm	1589.40		158940.00	
7.04		Providing and fixing machine cut, mirror / eggshell polished , Marble stone work for wall lining (veneer work) including dado, skirting, risers of steps etc., in required design and pattern wherever required, stones of different finished surface texture, on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/sqm including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Engineer-in-Charge.						
a)	Based on DSR item 8.11	18 mm thick Flamed/polished granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent	3183.00	Sqm	4558.00		14508114.00	

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Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
7.05	8.13	Providing and laying Polished / flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand), laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.						
a)	8.13.1	Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	10319.00	Sqm	2937.70		30314126.30	
7.06		Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :						
a)	11.26.1	25 mm thick.	2862.00	Sqm	1158.10		3314482.20	
7.07	11.27	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	170.00	Sqm	1238.20		210494.00	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
7.08	11.36	Providing and fixing 1st quality ceramic glazed wall tiles 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.	776.00	Sqm	744.80		577964.80	
7.09	11.40	Providing and laying rectified Glazed Ceramic floor tiles of size 300x300 mm or more (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick Cement Mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including pointing the joints with white cement and matching pigments etc., complete.	323.00	Sqm	901.05		291039.15	
7.10		Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.						
a)	11.41.2	Size of Tile 600x600 mm	4056.00	Sqm	1119.40		4540286.40	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
7.11		Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joint with white cement & matching pigments etc. complete.						
a)	11.46.2	Size of Tile 600x600 mm	13286.00	Sqm	1135.20		15082267.20	
7.12	11.21	Providing and fixing 10 mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resisting mortar bedding, and joints filled with acid and/or alkali resisting cement as per IS : 4457, complete as per the direction of Engineer-in- Charge.						
a)	11.21.1	In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)						
i)	11.21.1.1	Acid and alkali resistant tile	136.00	sqm	1073.35		145975.60	
7.13	11.21.2	In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)						
a)	11.21.2.1	Acid and alkali resistant tile	7.00	sqm	1143.60		8005.20	
7.14	8.11	Providing and fixing machine cut, mirror/ eggshell polished , Marble stone work for wall lining (veneer work) including dado, skirting, risers of steps etc., in required design and pattern wherever required, stones of different finished surface texture, on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/sqm including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Engineer-in-Charge.						
a)	8.11.1	18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	437.00	Sqm	6647.35		2904891.95	

Project Name: Project Name: Construction of Super Speciality Block at Shimla (Under PMSSY)

Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
7.15	11.52	Providing and laying machine cut, mirror polished Marble stone flooring,in required design (Simple geometrical, abstract etc.) and in patterns in combination with Italian marble stones of different colours, shades and finished surface texture etc., in linear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm including pointing with white cement slurry admixed with pigment to match the marble shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.						
a)	11.52.1	18 mm thick Italian Marble stone slab, Perlato, Rosso verona,Fire Red or Dark Emperadore etc.	503.00	Sqm	5233.75		2632576.25	
7.16	NS	P/L 8mm thick (EN13329) HDF laminated wooden Flooring including skirting of approved brand and manufacture(class use of 31/33 AC 4 plank size 1290 X 194 mm & groove construction with edge impregnate with seal to secure long lasting joints ,secured together with the help of suitable glue, conforming to EN 13329 including the cost of 0.6 mil. PE Film and 2 mm PU Foam with accessories like Skirting, T Profile, beading, stair nose etc all complete.	91.00	sqm		1803.00		164073.00
7.17		Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing,moulding and polishing to edges to give high gloss finish etc. complete at all levels.						
a)		Granite of any colour and shade						
i)	8.2.2.1	Area of slab upto 0.50 sqm	51.00	Sqm	3351.95		170949.45	
ii)	8.2.2.2	Area of slab over 0.50 sqm.	202.00	Sqm	3113.30		628886.60	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
7.18	8.4	Extra for fixing marble /granite stone, over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive, including cleaning etc. complete.	335.00	Metre	266.25		89193.75	
7.19	8.5	Extra for providing opening of required size & shape for wash basin/kitchen sink in kitchen platform, vanity counter 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.	140.00	Each	427.95		59913.00	
7.20	11.19	Chequered terrazo tiles 22 mm thick with graded marble chips of size up to 6 mm in floors, jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete, on 20 mm thick bed of cement mortar 1:4 (1 cement :4 coarse sand) :						
a)	11.19.2	Medium shade pigment using 50% white cement, 50% ordinary cement	1635.00	Sqm	957.50		1565512.50	
7.21	NS	Providing & fixing 2 mm thick homogeneous jointless, scratch resistant, chemical resistant, anti fungal and anti bacterial class A clean room certified, Pthalate free PVC Vinyl flooring and skirting/ coving good for laboratories of approved quality including the cost of suitable adhesive of approved quality and manufacture. Cost of coving to be paid separately)	1516.00	Sqm		1664.00		2522624.00
7.22	NS	Extra for providing and fixing coving of suitable material for PVC flooring including the cost of labour and materials for coving. Length of coving shall be measured for payment.	641.00	mtr		131.00		83971.00
7.23	16.75	Providing and laying C.C. pavement of mix M25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator, vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge. (The panel shuttering work shall be paid for separately)	91.00	Cum	6912.15		629005.65	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
7.24	11.54	Providing and fixing removable raised/false access flooring with system and its components of approved make for different plenum height with possible height adjustment upto 50 mm, comprising of modular load bearing floor panels supported on G.I. rectangular stinger frame work and G.I. Pedestal etc. all complete, as per the architectural drawings, as specified and as directed by Engineer-in-charge consisting of						
		a) Providing at required spacing to form modular framework, pedestals made out of GI tube of thickness minimum 2 mm and 25 mm outer diameter, fully welded on to the G.I. Base plate of size 100mm x 100mm x 3mm at the bottom of the pedestal tube, G.I. pedestal head of size 75mmx75mmx3.5 mm welded with GI fully threaded stud 16mm outer diameter with two GI Check nuts screwed on the stud for level adjustment upto 50mm, locking and stabilizing the pedestal head in position at the required level. The pedestals shall be fixed to the subfloor (base) through base plate using epoxy based adhesive of approved make or the machine screw with rawl plug.						
		b) Stringers system in all steel construction hot dipped galvanized of rectangular size 570x20x30x0.80mm thick having holes at both ends for securing the stringers on to the pedestal head using fully threaded screws ensuring maximum lateral stability in all directions, the grid formed by the pedestal and stringer assembly shall receive the floor panel, this system shall provide adequate solid, rigid support for access floor panel, the system shall provide a minimum clear uninterrupted clearance between the bottom of the floor for electrical conduits and wiring etc. all complete as per the architectural drawings, as specified and as directed by the Engineer-in-charge.						

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
		c) Providing and fixing Access Floor panel of 600x600x32 mm medium grade Filled Steel anti static high pressure Lamination of 800H grade (FS800H). Access Floor panel shall be steel welded construction with an enclosed bottom pan with uniform pattern of 64 hemispherical cones.The top and bottom plates of Steel Gauges: top 0.6 mm and bottom 0.7 mm fused spot welded together (minimum 64 welds in each dome and 20 welds along each flange). The panel should be corrosion resistant epoxy coated for lifetime rust protection and cavity formed by the top and bottom plate is filled with Pyrogrip noncombustible Portland cementitious core mixed with lightweight foaming compound. The access floor shall be factory finished with Anti-static High Pressure laminate with Non Warp technology upto 1mm thickness for superior adhesion and Surface flatness within 0.75mm.The panel is to withstand a Concentrated Load of 363 kgs applied on area 25mm x 25mm without collapse in the centre of the panel which is placed on four steel blocks.The panel will withstand and Uniformly Distributed Load (UDL) minimum 1250 kg/sqm and, an impact load of 50kg all complete as per the approved manufacturers specification and as per the direction of Engineer-in-charge. All specification must be printed on the side of the panel to ensure the quality of the product.						
a)	11.54.2	450 mm Finished Floor Height (FFH).	30.00	sqm	4275.40		128262.00	
		Total of sub-head					78720609.90	2770668.00

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
8.00		ROOFING						
8.01	26.27	Providing and fixing mineral fibre false ceiling tiles at all heights of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance > 85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 &7)in true horizontal level suspended on interlocking T-Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised @80gsm) 50 mm long 8mm outer diameter M-6 dash fasteners, 6 mm diameter fully threaded hanger rod upto 1000mm length and L-shape level adjuster of size 85x25x2 mm, spaced at 1200 mm centre to centre along main 'T'. The system should rest on periphery walls /partitions with the help of GI perimeter wall angle of size24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic rawl plug at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portion of all T-sections used in false ceiling support system shall be prepainted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the engineer-in-charge.						
a)	26.27.3	With 16 mm thick beveled tegular mineral fibre Antimicrobial false ceiling tile	9716.00	Sqm	1621.60		15755465.60	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
8.02	12.45	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 1 200 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 length with nuts & bolts of required size and other end of angle at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges section 0.5 mm thick bottom wedge of 80 mm with tapered flanges 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 :						
a)	12.45.1	12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095-Part I	2429.00	Sqm	806.20		1958259.80	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
8.03	12.53	Providing and Fixing 15 mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture of size 595 x 595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanising @ 120 grams per sqm including both side) consisting of main 'T' runner suitably spaced at joints to get required length and of size 24x38 mm made from 0.33 mm thick (minimum) sheet, spaced 1200 mm centre to centre, and cross "T" of size 24x28 mm made out of 0.33 mm (Minimum) sheet, 1200 mm long spaced between main'T' at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross 'T' of length 600 mm and size 24 x28 mm made of 0.33 mm thick (Minimum) sheet to be inter locked at middle of the 1200x 600 mm panel to from grid of size 600x600 mm, resting on periphery walls /partitions on a Perimeter wall angle pre-coated steel of size(24x24X3000 mm made of 0.40 mm thick (minimum) sheet with the help of rawl plugs at 450 mm centre to centre with 25						
		mm long dry wall screws @ 230 mm interval and laying 15 mm thick densified edges calicum silicate ceiling tiles of approved texture in the grid, including, cutting/ making opening"for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required. Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25x35x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm G.I. adjustable rods with galvanised steel level clips of size 85 x 30 x 0.8 mm, spaced at 1200 mm centre to centre along main 'T', bottom exposed with 24 mm of all Tsections shall be pre-painted with polyster baked paint,for all heights, as per specifications, drawings and as directed byEngineer-in-Charge.						

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
a)		Note :- Only calcium silicate false ceiling area will be measured from wall to wall. No deduction shall be made for exposed frames/ opening (cut outs) having area less than 0.30 sqm.The calcium silicate ceiling tile shall have NRC value of 0.50 (Minimum), light reflection > 85%, non-combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity <0.043 w/mK.	1169.00	Sqm	1497.90		1751045.10	
8.04	12.54	Providing and fixing GI Clip in Metal Ceiling System of 600x600 mm module which includes providing and fixing 'C' wall angle of size 20x30x20 mm made of 0.5 mm thick pre painted steel along the perimeter of the room with help of nylon sleeves and wooden screws at 300 mm center to centre, suspending the main C carrier of size 10x38x10 mm made of G.I steel 0.7 mm thick from the soffit with help of soffit cleat 37x27x25x1.6 mm, rawl plugs of size 38x12 mm and C carrier suspension clip and main carrier bracket at 1000 mm c/c. Inverted triangle shaped Spring Tee having height of 24 mm and width of 34 mm made of GI steel 0.45 mm thick is then fixed to the main C carrier and in direction perpendicular to it at 600 mm centers with help of suspension brackets. Wherever the main C carrier and spring T have to join, C carrier and spring T connectors have to be used. All sections to be galvanized @ 120 gms/sqm (both side inclusive), fixing with clip in tiles into spring T with :						
a)	12.54.1	GI Metal Ceiling Clip in plain Beveled edge global white color tiles of size 600x600 and 0.5 mm thick with 25 mm height, made of G I sheet having galvanizing of 100 gms/ sqm (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending.	1485.00	Sqm	1329.65		1974530.25	
8.05	12.34	Providing and fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Fibre glass wool conforming to IS : 8183, density 24kg / m3, 50mm thick, wrapped in 200 G Virgin Polythene bags, fixed to ceiling with metallic cleats (50x50x3 mm) @ 60 cm and wire mesh of 12.5 mm x 24 gauge wire mesh, for top most ceiling of building.	2416.00	Sqm	425.10		1027041.60	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
8.06	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	1103.00	Sqm	298.30		329024.90	
8.07	NS	Providing and fixing 10mm thick clear multi wall solar control polycarbonate sheets of approved quality and shade in desired shape in roofing including the cost of EPDM gaskets , sealing tape , aluminium profile and all necessary accessories complete as per architectural drawings and as directed by Engineer incharge. The item includes designing the complete system and supplying & getting approved from client and / or reputed engineering institue like IIT etc. The detailed shop drawings including supplying structural design calculations based on relevent codal provisions and carrying out water penetration test as per standards followed in India.						
		The whole work is to be done through reputed and approved vendor having experience in polycarbonate work in Commercial/ Govt/ Corporate buildings as per architectural elevation drawings including filling of joints with silicon sealent and also with masonry/ RCC work, at all heights including double heights, straight or curved etc. complete in all respect. (Surface Area shall be measured for the payment) (M.S. Framing to be paid for seprately)						
	a)	For Dome Structure	50.00	Sqm		2439.00		121950.00

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
8.08	22.7	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations:						
a)		Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment.						
b)		Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs.						
c)		After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineerin-charge.						
d)		Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineerin- charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep.						
e)		The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Charge :						
a)	22.7.1	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	3355.00	Sqm	1034.65		3471250.75	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
8.09	12.62	Providing and fixing thermal insulation with Resin Bonded rock wool conforming to IS: 8183, having density 48 kg/m ³ , 50 mm thick, wrapped in 200 G Virgin Polythene Bags fixed to wall with screws, rawel plug & washers and held and in position by criss crossing GI wire etc. complete as per directions of Engineer-in-Charge.	103.00	sqm	223.80		23051.40	
8.10	9.154	Providing and fixing frame work for partitions/ wall lining etc. made of 50x50x1.6 mm hollow MS tube, placed along the walls, ceiling and floor in a grid pattern with spacing @ 60 cm centre to centre both ways (vertically & horizontally) or at required spacing near opening, with necessary welding at junctions and fixing the frame to wall/ ceiling/floors with steel dash fasteners of 8 mm dia, 75 mm long bolt, including making provision for opening for doors, windows, electrical conduits,switch boards etc., including providing with two coats of approved steel primer etc. complete, all as per direction of Engineer-in-charge.	1536.00	kg	78.45		120499.20	
8.11	9.156	Providing and fixing Pre -laminated medium density fibre board exterior grade (Grade-I) IS:14587:1998 marked, to frame, backing or studding with screws etc. complete (Frames, backing or studding to be paid separately).						
a)	9.156.1	Pre-laminated with decorative lamination on both side exterior Grade - I MDF Board 12 mm thick confirming to IS:14587	103.00	sqm	700.55		72156.65	
Total of sub-head							26482325.25	121950.00

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
9.00		FINISHING						
9.01	13.1	12 mm cement plaster of mix :						
a)	13.1.2	1:6 (1 cement: 6 fine sand)	27789.00	Sqm	160.35		4455966.15	
9.02	13.2	15 mm cement plaster on the rough side of single or half brick wall of mix:						
a)	13.2.1	1:4 (1 cement: 4 fine sand)	2112.00	Sqm	200.25		422928.00	
b)	13.2.2	1:6 (1 cement : 6 fine sand)	34041.00	Sqm	185.20		6304393.20	
9.03	13.3	20 mm cement plaster of mix :						
	13.3.1	1:4 (1 cement: 4 fine sand)	14525.00	Sqm	240.15		3488178.75	
9.04	13.16	6 mm cement plaster of mix :						
a)	13.16.1	1:3 (1 cement : 3 fine sand)	8185.00	Sqm	143.80		1177003.00	
9.05	13.22	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	14986.00	Sqm	40.65		609180.90	
9.05	13.26	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	68105.00	Sqm	118.70		8084063.50	
9.06	13.37	White washing with lime to give an even shade :						
a)	13.37.1	New work (three or more coats)	1413.00	Sqm	17.25		24374.25	
9.07	13.81	Distempering with 1st quality acrylic distemper, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.						
a)	13.81.2	Two Coats	1577.00	Sqm	49.65		78298.05	
9.08	13.47	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade :						

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Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
a)	13.47.1	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)	686.00	Sqm	96.80		66404.80	
9.09	13.85	Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content.						
a)	13.85.2	With ready mixed red oxide zinc chromatic on steel / iron works having VOC content less than 250 grams/ litre	896.00	Sqm	32.55		29164.80	
b)	13.85.3	With water thinnable cement primer on wall surface having VOC content less than 50 grams/litre	66532.00	Sqm	36.95		2458357.40	
9.10	13.45	Finishing walls with textured exterior paint of required shade:						
a)	13.45.1	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including base coat of water proofing cement paint applied @ 2.20kg/10 sqm.	14437.00	Sqm	150.65		2174934.05	
9.11	13.83	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.						
a)	13.83.2	Two Coats	66528.00	Sqm	71.00		4723488.00	
9.12	NS	PU Wall Coating						
i)		Preparing the wall using sand paper cleaning etc. Providing and applying epoxy / acrylic wall putty over prepared wall surfaces to achieve smooth surface to take wall coating.						

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
	ii)	Providing and applying water dispersed polyurethane wall coating of approved quality in 2 coats and finishing as per manufacturer specifications. A chemical resistant pre-packed, two part water dispersed polyurethane wall coating The total dry film thickness shall not be less than 90 microns in two coats. The cured film shall be hygienic and provide hard, flexible matt and chemical resistant surface.	1257.00	sqm		523.00		657411.00
9.13	13.84	Painting with synthetic enamel paint, having VOC (Volatile Organic Compound) content less than 150 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.						
a)	13.84.2	Two Coats	1860.00	Sqm	75.00		139500.00	
9.14	Based on DSR	Providing and fixing 150 mm wide, 22 gauge and 18mm square chicken wiremesh at junctions of concrete and brick work and other locations at all heights placed symmetrically on the joint, including cutting to required size, fixing in position with cement and nails etc complete in all respects as per specifications/drawings and to the entire satisfaction of the Engineer in Charge.	2946.00	Sqm	90.00		265140.00	
Total of sub-head							34501374.85	657411.00

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
10.00		MISCELLANEOUS						
10.01	7.40	Providing and fixing dry cladding upto 10 metre heights with 30 mm thick gang saw cut stone with (machine cut edges) of uniform colour and size upto 1mx1m, fixed to structural steel frame work and/ or with the help of cramps, pins etc. and sealing the joints with approved weather sealant as per Architectural drawing and direction of Engineer-in-charge.						
		(The steel frame work, stainless steel cramps and pins etc. shall be paid for separately).						
a)	7.40.2	White sand stone - 30mm thick gang saw cut stone	11801.00	Sqm	1500.70		17709760.70	
10.02	7.39	Extra for stone work for wall lining on extrior walls of height more than10 m from ground level for every additional height of 3 m or part there of.	16680.00	Sqm	85.90		1432812.00	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
10.03	7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square/ rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of M.S. brackets/ lugs of angle iron/ flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps/ pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-charge and painted with two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid).	41301.00	Kg	134.75		5565309.75	
10.04	7.42	Providing and fixing adjustable stainless steel cramps of approved quality, required shape and size, adjustable with stainless steel nuts, bolts and washer (total weight not less than 260 gms), for dry stone cladding fixed on frame work at suitable location, including making necessary recesses in stone slab, drilling required holes etc complete as per direction of the Engineer-in-charge	35401.00	Kg	217.15		7687327.15	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
10.05	NS	<p>Proving and fixing glass Reinforced Concrete (G.R.C) Screens in approved size, pattern design, thickness and color of approved make .The Screen should be made from White Portland cement ,Quartz, Fine Silica Sand, Alkali Resistant Glass Fibre Super Plasticizer Polymer and U.V resistant Synthetic inorganic pigment for pigmentation. The material casting should take place in Synthetic Rubber /FRP moulds of approved make & shape. The fixing of screens to be done with Stainless Steel (SS-304) 'L' shaped Clamps, dash fasteners and pins, as required at site.</p> <p>Technical specification of GRC Screens.</p> <p>Internal member thickness 30 mm and border thickness 50 mm Dry Density: 1800 kg/m3 (min) Water absorption: Less than 6% of dry weight by immersion over a period of 24 hours. Compressive strength: (M-40 Grade) Wet Transverse Strength: 7 N/mm (min) Abrasion Resistance: Less than 2.0 for E.H.D Thermal Conductivity: 1.63 W/MK at 3% moisture content : 1.80W/MK at 5% moisture content</p>	955.00	Sqm		6521.00	6227555.00	
10.06	25.1	<p>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).</p>	5660.00	Kg	338.25		1914495.00	
10.07	25.2	<p>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:</p>						

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
		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:						
		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.						
		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.						
		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.						

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
		<p>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 Engineer- in-Charge.</p>						
		<p>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 sub- head. 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.</p>						

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
		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"	755.00	Sqm	2409.90		1819474.50	

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Estimate (Based on DSR 2016)								
Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
10.08	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 strengthened 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 as directed 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.“						
		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/m2 degree K etc. The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.	755.00	Sqm	3730.70		2816678.50	
10.09	25.4	Extra for openable side / top hung vision glass panels (IGUs) including providing and supplying at site all accessories and hardwares 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.	76.00	Sqm	2941.60		223561.60	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
10.10	25.8	Design supply & installation of suspended Spider Glazing system designed to withstand the wind pressure as per IS 875 (Part-III). The Suspended System held with Spider Fittings of SS-316 Grade Steel of approved manufacturer with glass panel having 12 mm thick clear toughened glass held together with SS- 316 Grade Stainless steel Spider & bolt assembly with laminated glass fins 21 mm thick. The Glass fins and glass panel assembly shall be connected to Slab/beams by means of SS- 316 Grade stainless steel brackets & Anchor bolts and at the bottom using SS channel of 50x25x2mm using fastener & anchor bolts, non staining weather sealants of approved make, Teflon/ nylon bushes and separators to prevent bi-metallic contacts, all complete to perform as per specification and approved drawings. The complete system to be designed to accommodate thermal expansion & seismic movements etc. The joints between glass panels (6 to 8 mm) and gaps at the perimeter & in U channel of the assembly to be filled with non staining weather sealant, so as to make the entire system fully water proof & dust proof						
		The rate shall include all design, Engineering and shop drawing including approval from structural designer, labour, T&P, scaffolding, other incidental charges including wastage, enabling temporary services all fitting fixers nut bolts, washer, Buffer plates, fastener,anchors, SS channel laminated glass etc. all complete. For the purpose of payment, actual elevation area of Glazing including thickness of joints and the portion of Glass panel inside the SS channel shall be measured	133.00	sqm	6928.55		921497.15	
10.11	4.17	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	543.00	Sqm	450.35		244540.05	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
10.12	22.23	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels/ subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guaranteed for 10 years against any leakage.						
a)	22.23.1	For vertical surface two coats @0.70 kg per sqm per coat	1421.00	Sqm	468.10		665170.10	
b)	22.23.2	For horizontal surface one coat @1.10 kg per sqm	387.00	Sqm	362.35		140229.45	
10.13	7.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12graded stone aggregate 20 mm nominal size) upto plinth level with :						
a)	7.1.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	775.00	Cum	3965.85		3073533.75	
10.14	7.8	Coursed rubble masonry with hard stone (first sort) in superstructure above plinth level and upto floor five level.						
a)	7.8.1	Masonry work (first sort), in cement mortar 1:6 (1 cement : 6 coarse sand)	384.00	Cum	5456.35		2095238.40	
10.15		Extra for coursed rubble masonry with hard stone (first or second sort) in:						
a)	7.10.1	Square or rectangular pillars	23.00	Cum	464.05		10673.15	

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Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
10.16	13.33	Pointing on stone work with cement mortar 1:3 (1 cement : 3 fine sand)						
a)	13.33.1	Flush/ Ruled pointing	2530.00	Sqm	168.45		426178.50	
10.17		Manufacturing, supplying and fixing retro reflective overhead signage boards made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity and encapsulated lens type heat activated retro reflective sheeting conforming to type - III of ASTM-D-4956-01 as approved by Engineer-in-charge, letters, borders etc. as per IRC : 67-2001 in silver white with blue colour back ground and with high intensity grade, pasted on substrate by pressure sensitive adhesive backing which shall be activated by applying pressure conforming to class II of ASTM-D-4956-01 and fixing the same to the plate of structural frame work by means of suitable sized aluminium alloys, rivets or bolts & nuts @ 300 mm centre to centre all along the periphery as well as in two vertical rows along with theft resistant measures, including the cost of painting with two or more coats of epoxy paint in grey colour on the back side of aluminium sheet including appropriate priming coat.						
		The rate includes the cost of rounding off the corners, lowering down the structural frame work from the gantry, fixing and erecting the same in position all complete as per drawings, specification and direction of the engineer-incharge.(Structural frame work including M.S. plate to be provided separately. Rectangular area of the sheet only shall be measured for payment).						
a)	16.60.1	Overhead informatory road signage	20.00	Sqm	4722.20		94444.00	

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
10.18	16.62	Providing and applying 2.5 mm thick road marking strips (retroreflective) of specified shade/ colour using hot thermoplastic material by fully/ semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications	50.00	Sqm	391.25		19562.50	
10.19	NS	Providing & fixing of external signages of varying sizes & shapes using GI sheet of atleast 19G, painting the entire board both surfaces with 1 coat of primer & 2 coats of synthetic enamel painting, lettering of approved type on board of any sizes in English / Hindi or Local language complete as per technical specifications & directions of Engineer.	50.00	sqm		4594.00		229700.00
10.20	NS	Providing & Fixing Wall Mounted Nonlit Fire Exit 24" x 9" Internal sign of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	100.00	Each		2120.00		212000.00
10.21	NS	Providing & Fixing Wall Mounted Nonlit Utility 6" x 6" Internal sign of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	200.00	Each		374.00		74800.00

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Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
10.22	NS	Providing & Fixing Wall Mounted Nonlit Identification sign 18"x5" of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	200.00	Each		842.00		168400.00
10.23	NS	Providing & Fixing Wall Mounted Nonlit Fire Exit 24" x 9" Internal sign of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	200.00	Each		2120.00		424000.00
10.24	NS	Providing & Fixing Wall Mounted Nonlit directory sign 2' x 3' of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	20.00	Each		8479.00		169580.00
10.25	NS	Providing & Fixing Wall Mounted Nonlit directory sign 3' x 4' of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	20.00	Each		16957.00		339140.00
10.26	NS	Providing & Fixing Wall Mounted Nonlit directory sign 3' x 3.5' of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	20.00	Each		14838.00		296760.00

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Estimate (Based on DSR 2016)								
Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
10.27	NS	Providing & Fixing Suspended Nonlit sign 48"x9" of approved make & made of 1" Aluminium framing duly PU painted and 10mm Acrylic element mounted to it from either side with the required text matters stuck on it with plotted Self Adhesive Vinyl bracketed at suitable locations, including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	200.00	Each		4239.00		847800.00
10.28	NS	Providing & Fixing Wall Mounted Nonlit directory sign 15' x 11' of approved make & made of 10mm Acrylic with the required text matters stuck on it with plotted self adhesive vinyl & Mounted on 3mm Aluminium Composit Panel bracketed at suitable locations including necessary fittings & fastening etc. complete & as directed by The Engineer in charge.	1.00	Each		321561.00		321561.00
10.29	NS	Providing the vehicle (Car) in good running condition at any time for exclusive use of engineer during currency of contract.The number of vehicles and period shall be informed by the engineer as per requirement.The rate are inclusive of service of drivers, fuel, oil, lubrication, consumables, maintenance etc all complete	45000.00	Km		12.00		540000.00
Total of sub-head							46860486.25	9851296.00

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Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
11.00		ROAD WORK & HORTICULTURE						
11.01	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.making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth lead upto 50 metres.	3000.00	Sqm	90.10		270300.00	
11.02	16.78	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.						
a)	16.78.1	With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30	500.00	Cum	2089.70		1044850.00	
11.03	16.80	Construction of dry lean cement concrete sub base over a prepared sub-grade with coarse and fine aggregate conforming to IS:383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per specifications, cement content not to be less than 150 Kg/cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, for all leads & lifts, laid with a mechanical paver, compacting with 8-10 tonne vibratory roller, finishing and curing etc. complete as per direction of Engineerin-charge.	250.00	Cum	3331.95		832987.50	

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Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
11.04	16.43	"Providing and laying design mix cement concrete of M-30 grade, in roads/ taxi tracks/ runways, using cement content as per design mix, using coarse sand and graded stone aggregate of 40 mm nominal size in appropriate proportions as per approved & specified design criteria, providing dowel bars with sleeve/ tie bars wherever required, laying at site, spreading and compacting mechanically by using needle and surface vibrators, levelling to required slope/ camber, finishing with required texture, including steel form work with sturdy M.S. channel sections, curing, making provision for contraction/expansion, construction & longitudinal joints (10 mm wide x 50 mm deep) by groove cutting machine, providing and filling joints with approved joint filler and sealants, complete all as per direction of Engineer-in-charge (Item of joint fillers, sealants, dowel bars with sleeve/ tie bars to be paid separately).						
		Note:- Cement content considered in M-30 is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately.						
a)	16.43.1	Cement concrete prepared with batch mixing machine	500.00	Cum	6893.25		3446625.00	
11.05	16.44	Extra for providing and mixing hardening compound of approved quality as per manufacturer's specification in cement concrete.	2500.00	litre	46.45		116125.00	
11.06	16.45	Providing and fixing in position pre-moulded joint filler in expansion per cm joints.	5000.00	Per cm depth per cm width per m length	2.20		11000.00	

Project Name: Project Name: Construction of Super Speciality Block at Shimla (Under PMSSY)

Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
11.07	16.91	Providing and laying factory made chamfered edge Cement Concrete paver blocks In foot path, park & lawns driveway or light & traffic parking etc. of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of course sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand, all complete as per manufacturer's specifications & direction of Engineerin-Charge.						
a)	16.91.1	60mm thick Cement concrete paver block of M-35 grade with approved colour. design & pattern.	500.00	Sqm	756.15		378075.00	
11.08	16.69	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).	82.00	Cum	5012.65		411037.30	
11.09	2.1/H&L	Trenching in ordinary soil upto a depth of 60cm including removal and stacking of serviceable materials and then disposing surplus soil, by spreading and neatly levelling with in a lead of 50m and making up the trenched area to proper levels by filling with earth or earth mixed with sludge or/and manure before and after flooding trench with water (excluding cost of imported earth, sludge or manure).	500.00	Cum	45.85		22925.00	

Project Name: Project Name: Construction of Super Speciality Block at Shimla (Under PMSSY)

Estimate (Based on DSR 2016)

Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
11.10	2.3/H&L	Supplying and stacking sludge at site including royalty and carriage complete (sludge measured in stacks will be reduced by 8% for payment).	100.00	Cum	235.55		23555.00	
11.11	2.4.2/H&L	Supplying and stacking at site dump manure from approved source, including carriage complete (manure measured in stacks will be reduced by 8% for payment).	100.00	Cum	192.05		19205.00	
a)		Screened through sieve of I.S. designation 16 mm						
11.12	2.5+2.6/H&L	Rough dressing the trenched ground including breaking clods & Uprooting weeds from the trenched area after 10 to 15 days of its flooding with water including disposal of uprooted vegetation.	2000.00	Sqm	3.80		7600.00	
11.13	2.7/H&L	Fine dressing the ground	2000.00	Sqm	2.15		4300.00	
11.14	2.8+2.9/H&L	Spreading of sludge, dump manure or/and good earth in required thickness including mixing earth and sludge or manure in the required proportion specified or directed by the Officer in Charge (Cost of sludge, dump manure or/ and good earth to be paid separately).	900.00	Cum	52.30		47070.00	
11.15	2.34	Proving & fixing Selection no.1 grass turf with earth 50 mm to 60 mm thickness of existing ground prepared with proper level and ramming with required tools wooden (Dhurmos) and than rolling the surface with light roller make the surface smoothening and watering.	2000.00	Sqm.	77.00		154000.00	
11.16		Digging holes in ordinary soil and refilling the same with the excavated earth mixed with manure or sludge in the ratio of 2:1 by volume (2 parts of stacked volume of earth after reduction by 20% : 1part of stacked volume of manure after reduction by 8%) flooding with water, dressing including removal of rubbish and surplus earth, if any with all leads and lifts (cost of manure, sludge or extra good earth if needed to be paid for separately):						


Project Name: Project Name: Construction of Super Speciality Block at Shimla (Under PMSSY)

Estimate (Based on DSR 2016)								
Item No	Ref. No.	Description Of Item	Total Qty	Unit	Rates as per DSR 2016	NS Item Rate	Amount DSR 2016	Amount NS Items
1.00	1A	2	3	4	5	6	7	8
a)	2.14.1/H&L	Holes 1.2 m dia and 1.2 m deep.	100.00	Each	236.75		23675.00	
b)	2.14.3/H&L	Holes 60 cm dia, and 60 cm deep.	100.00	Each	31.15		3115.00	
Total of sub-head							6816444.80	

Project Name: Project Name: Construction of Super Speciality Block at Shimla (Under

ABSTRACT OF COST (CIVIL)

S.No	DESCRIPTION OF WORK	DSR-2016 Items	NS Items
1	EARTHWORK	11291096.85	0.00
2	CONCRTE WORK	4022449.47	0.00
3	RCC WORK	257315008.75	0.00
4	WALLS AND PARTITIONS	36749230.25	8140975.00
5	DOORS & WINDOWS	27293451.15	15390763.00
6	STEEL WORK	14052192.25	0.00
7	FLOORING	78720609.90	2770668.00
8	CEILING & ROOFING	26482325.25	121950.00
9	FINISHING	34501374.85	657411.00
10	MISCELLANEOUS	46860486.25	9851296.00
11	ROAD WORK & HORTICULTURE	6816444.80	0.00
	TOTAL	544104669.77	36933063.00
	Cost index 27.45%	149356731.85	
	Grand Total	730394464.63	

		Design & Engineering Department							
									
Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.									
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount	
1	2	3	4	5	6	7	8	9	
		Note: Based on the tender drawing the agency has to prepare the internal & external plumbing shop drawing and obtain the approval of the same before execution							
1.00		SANITARY FIXTURES							
1.01	17.1	Providing&fixing water closet squatting pan(Indian W.C.Pan) with 100 mm sand cast iron P or S strap,10 Litre low level white P.V.C flushing cistern with manually controlled device(handle lever) conforming to IS:7231 with all fittings & fixture complete including cutting and making good the walls & floors wherever required.(Parryware model no. C0117 or other equivalent model as per approved make)							
a)	17.1.1	White vitreous china orissa pattern W.C. pan of size 580 x 440 mm with integral type foot rests.	Each	5	3,494.20	17,471.00			-
									-
1.02	17.3	Providing and fixing white vitreous china Pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous flushing cistern and 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:(Parryware model no. C0271 or other equivalent as per approved make							-
a)	17.3.2	W.C. pan with ISI black solid plastic seat & lid.	Each	5	4,570.50	22,852.50			-
									-
1.03	17.7	Providing and fixing wash basin with C.I. brackets, 15mm C.P. brass pillar taps, 32mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required:(.Roca model no. RS325463, RT5A4225CA1,RF5054018A1 or other equivalent approved make.							-
a)	17.7.2	White Vitreous China Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar tap	Each	160	2,020.60	3,23,296.00			-
b)	17.7.9	White Vitreous China Surgeon type wash basin of size 660x460 mm with single 15 mm C.P. brass pillar taps with elbow operated levers ISI marked	Each	25	2,618.75	65,468.75			-
									-
1.04	17.7A	Providing and fixing wash basin with C.I. brackets, 15 mm dia CP Brass single hole basin mixer of approved quality and make, including painting of fittings and brackets, cutting and making good the walls wherever required:- (a) White Vitreous China Wash basin size 550x400 mm with a 15 mm CP Brass single hole basin mixer. (Roca model no RT5A3127CA1 &RS325463 OR other equivalent model as per approved make							-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
	a	White Vitreous China Wash basin size 550x400 mm with a 15 mm CP Brass single hole basin mixer	Each	56	2,984.20	1,67,115.20		-
1.05	17.10	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:						-
	17.10.1	Kitchen sink with drain board						-
a)	17.10.1.3	510x1040 mm bowl depth 200mm.	Each	5	3,772.35	18,861.75		-
1.06	17.11	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P brass waste and 40mm C.P. brass trap with necessary C.P. brass unions complete, including painting of fittings and brackets, cutting and making good the wall wherever required (Parryware model no.C0602 or other equivalent model i.e, Jaquar & Hindware)						-
	17.11.2	Size 450x300x150 mm	Each	10	3,211.45	32,114.50		-
1.07	17.16A	Providing and fixing 8 mm dia C.P. / S.S. Jet with flexible tube upto 1 metre long with S.S. triangular plate to European type W.C. of quality and make as approved by Engineer - in -charge.	Each	150	254.80	38,220.00		-
1.08	17.22A	Providing and fixing CP Brass 32mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.	Each	188	795.15	1,49,488.20		-
1.09	17.32	Providing and fixing superior glass mirror (of approved quality) and of required shape and size with plastic moulded frame of approved make and shape with 6 mm thick hard board backing.						-
a)	17.32.2	Rectangular shape 453x357 mm	Each	5	752.80	3,764.00		-
	17.32.4	Rectangular shape 1500x450 mm	Each	142	1,323.10	1,87,880.20		-
1.10	17.33	Providing and fixing 600x120x5 mm glass shelf with edges round of supported and anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	Each	46	573.30	26,371.80		-
1.11	17.34	Providing and fixing toilet paper holder . (Roca model no. 816070159 or other equivalent model as per approved make)						-
a)	17.34.1	C.P. brass	Each	160	385.35	61,656.00		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
1.12	17.78	Providing and fixing white vitreous china extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white vitreous china cistern with dual flush fitting, of flushing capacity 3 litre/ 6 litre (adjustable to 4 litre/ 8 litres), including seat cover, and cistern fittings, nuts, bolts and gasket etc complete.(Roca model no.RS342617460 & RA80N612001 or other equivalent model as per approved make	Each	160	9,685.70	15,49,712.00		-
						-		-
1.13	17.80	Providing and fixing white vitreous china battery based infrared sensor operated urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge ROCA model no. RS35945E000 or other equivalent model as per approved make.	Each	60	5,162.20	3,09,732.00		-
						-		-
1.14	17.81	Providing and fixing floor mounted , white vitreous china single piece, double traps syphonic water closet of approved brand/ make, shape, size and pattern including integrated white vitreous china cistern of capacity 10 litres with dual flushing system, including all fittings and fixtures with seat cover, cistern fittings, nuts, bolts and gasket etc including making connection with the existing P/S trap, complete in all respect as per directions of Engineer-in-Charge.(ROCA model no. RS349467000 & RE80P467001 or other equivalent model as per approved make)	Each	20	12,612.65	2,52,253.00		-
						-		-
1.15	NS	Extra for Providing and fixing wall hung water closet with seat cover of approved model and slim concealed flushing cistern of 9 litre capacity, body with floor mounted frame and installation kit with SS actuating panel with dual flush with fittings in place of wall mounted water closet 780x370x690 mm & vitreous china cistern ,complete of Roca make & model RS 34630346S,RA80P396461 & RA890031410 respectively or equivalent model of other approved make as approved by Engineer-in-charge.	Each	160		-	5,307.73	8,49,236.80
						-		-
1.16	NS	Providing and fixing white vitreous china urinal of approx. size 797x 425 mm having top inlet urinal with CP brass pressmatic urinal valve auto closing system with built in control cock & wall flanged complete including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge.(roca model no. RS35945H000 & Jaquar model no.PRS-077 or other equivalent model as per approved make)	Each	30		-	20,634.00	6,19,020.00
						-		-
1.17	NS	Rectangular shape mirror more than 0.6 sq.m. area with teak wooden polish moulded frame	Sqm	20		-	2,500.00	50,000.00
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
1.18	NS	Providing and fixing health faucet with pipe and hook complete (Roca model no. RF9060A1 or other equivalent model as per approved make)	Each	10		-	2,682.00	26,820.00
								-
1.19	NS	Providing and fixing stainless steel Grab Bar 25 mm dia(minimum) of required length with PVC cleats, C.P. brass screws etc. complete.	Meter	10		-	3,487.00	34,870.00
								-
1.20	NS	P&F wall Soap Holder with brackets' , complete fittings of roca or other equivalent approved make (Roca model no RA816371001 or other equivalent model as per approved make)	Each	46		-	2,796.00	1,28,616.00
								-
1.21	NS	Providing and fixing Liquid Soap Dispenser all complete (Roca model No. RA 8	Each	142		-	2,579.00	3,66,218.00
								-
1.22	NS	Providing and fixing CP brass towel rail size of 600x20 mm of approved make complete with CP brackets fixed to wooden cleats with CP brass screws.(Roca model no RA816710001or other equivalent model as per approved make).	Each	60		-	3,755.00	2,25,300.00
								-
1.23	NS	Providing and fixing CP brass towel rail size of 600x20 mm of approved make complete with CP brackets fixed to wooden cleats with CP brass screws.(Jaquar model no AQN-7711 or other equivalent model as per approved make).	Each	16		-	1,496.00	23,936.00
								-
1.24	NS	Providing and fixing C.P. brass bottle trap for sinks & urinal basin including CP waste fittings complete 40 mm dia complete in all respect of approved quality.	Each	10		-	1,211.00	12,110.00
								-
1.25	NS	providing & fixing double robe hook with all complete fittings(roca model no.RA815491001 or other equivalent model as per approved make)	Each	15		-	1,826.00	27,390.00
								-
1.26	NS	Extra for providing and fixing white vitreous china oval shape wash basin in place of normal wash basin of size 580x440						-
a)	a	under Counter oval shape wash basin size 600x390mm approx. (centre tap hole) along with , single 15 mm CP brass pressmatic type pillar tap.(Roca mopedel no. RS327893000 and RT5A4277C00 or other equivalent model as per approved make)	Each	160		-	7,817.00	12,50,720.00
								-
1.27	NS	Providing & fixing SS body solid state fully hygienic no touch Hand Drier of approved make rated for continuous repeat usage with solid state time delay LSF protection, with independent ambient light level & seasonal control temperatures including providing necessary C.I./M.S. brackets painted with two or three coats of enamel paint of approved shade over a coat of primer, wiring cables from drier to plug, plug tops etc. complete including cutting and making good the walls wherever required.	Each	30		-	13,780.00	4,13,400.00
								-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
1.28	NS	Providing and fixing vitreous china division plate of size 750x165x365 mm of approved make and design including brass cleats,C.P. brass screws all fittings etc. complete in all respect	Each	84		-	5,210.00	4,37,640.00
						-		-
1.29	NS	Providing and fixing Hospital S S 304 -18 SWG(thickness 1.2 mm) bed pan sink with P trap, size 850W x 600Dx300Hmm + SPL with 10 litres PVC. flushing cistern , 32 mm dia flush pipe cpvc , C.I./M.S. bracket with painting with 3 coats of white paint complete with accessories, C.P. brass long body bib cock and health fucet fittings (CMP.METAL) or equivalent approved make as approved by Engineer-in-charge.	Each	12		-	37,685.00	4,52,220.00
						-		-
1.30	NS	Supply , installation, testing and commissioning of compact floor mounted pedestal base surgical scrub sink tailor made to suit the site available compatiabale with all the regular and standard plumbing system, with inbuilt geyser designed for use in operation theatre fabricated from thickness 1.6 mm 304 type stainless steel seamless 304 welded,polished to satain finish including connecting to drainage and water points and making good cutting of walls and floor surface all complete and as directed (CMP.METAL ,MPS) or equivalent approved make as approved by Engineer-in-charge.				-		-
		Tailor made surgical scrub sink (2 bay) Approximate size 1.4 mX0.54mX0.84m with 1 user elbow operated mixture tap, soap dispensers, drain outlet ,thermostatic control of water temperature	Each	8		-	2,16,172.00	17,29,376.00
						-		-
SUB TOTAL(SANITARY FIXTURES)							32,26,256.90	66,46,872.80

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
2.00		SOIL, WASTE AND VENT PIPES						
2.01	17.35	Providing and fixing soil, waste and vent pipes- Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905 (make: NECO, HEPCO & SANT GOVIND)						
a)	17.35.1.3	100 mm dia-Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	Metre	2575	925.55	23,83,291.25		-
aii)	NS	150 mm dia-Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	Metre	1550		-	1,144.00	17,73,200.00
						-		-
2.02	17.38	Providing and fixing bend of required degree with access door , insertion rubber washer 3 mm thick, bolts and nuts complete.						
a)	17.38.1.3	100 mm dia-Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	Each	60	489.45	29,367.00		-
aii)	NS	150 mm dia-Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	Each	20		-	666.00	13,320.00
						-		-
2.03	17.39	Providing and fixing plain bend of required degree.						
a)	17.39.1.3	100 mm -Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	Each	250	307.10	76,775.00		-
aii)	NS	150 mm dia-Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	Each	50		-	378.00	18,900.00
						-		-
2.04	17.43	Providing and fixing single equal plain junction of required degree with access door , insertion rubber washer 3mm thick, bolts and nuts complete.						
a)	17.43.1.2	100x100x100mm - H.L.C.C.I-15905	Each	300	623.00	1,86,900.00		-
aii)	NS	150x 150x 150 mm-H.L.C.C.I-15905	Each	50		-	850.00	42,500.00
						-		-
2.05	17.44	Providing and fixing single equal plain junction of required degree						
a)	17.44.1.3	100x100x100mm -Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	Each	500	503.40	2,51,700.00		-
						-		-
2.06	17.48	Providing and fixing single unequal plain junction of required degree						
ai)	NS	150x150x100 mm-H.L.C.C.I-15905	Each	50		-	725.00	36,250.00
						-		-
2.07	17.55	Providing and fixing door piece , insertion rubber washer 3mm thick, bolts and nuts complete						
a)	17.55.1.2	100 mm	Each	510	512.65	2,61,451.50		-
						-		-
2.08	17.56	Providing and fixing terminal guard .						
a)	17.56.1.3	100 mm-Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	Each	30	355.85	10,675.50		-
ai)	NS	150 mm dia-Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	Each	10		-	495.00	4,950.00
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
2.09	17.57A	Providing and fixing shielded coupling for Hubless centrifugally cast iron pipe of same manufactureing				-		-
a)	17.57A.1.1	100 mm dia-SS 304 grade coupling with EPDM rubber gasket	Each	4675	360.50	16,85,337.50		-
aii)	NS	150 mm dia-SS 304 grade coupling with EPDM rubber gasket	Each	1500		-	444.00	6,66,000.00
						-		-
2.10	17.59	Providing and fixing M.S. stays and clamps for sand cast iron / centrifugally cast (spun) iron pipes of diameter :				-		-
a)	17.59.1	100 mm	Each	30	62.00	1,860.00		-
aii)	NS	150 mm dia	Each	10		-	71.00	710.00
						-		-
2.11	17.60	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors:				-		-
ai)	17.60.1.3	100 mm inlet and 100 mm outlet-Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	Each	350	677.60	2,37,160.00		-
						-		-
2.12	17.61	Cutting chases in brick masonry walls for following diameter sand cast iron/centrifugally cast (spun) iron pipes and making good the same with cement concrete 1:3:6 (1 cement:3 coarse sand:6 graded stone aggregate 12.5 mm nominal size) including necessary plaster and pointing in cement mortar 1:4 (1 cement: 4 coarse sand):				-		-
a)	17.61.1	100 mm diameter pipe	Metre	100	355.70	35,570.00		-
						-		-
2.13	17.65	Painting sand cast iron / centrifugally cast (spun) iron soil, waste vent pipes and fittings with paint of any colour such as chocolate, grey, or buff etc. over a coat of primer (of approved quality) for new work:				-		-
a)	17.65.1	100 mm diameter pipe	Metre	2575	40.65	1,04,673.75		-
	NS	150 mm diameter pipe	Metre	1550		-	43.14	66,867.00
						-		-
2.14	17.77	Providing and fixing M.S. holder bat clamp of approved design to sand cast iron/ cast iron (spun) pipes comprising of M.S. flat brackets made of 50x5 mm flat of specified shape, projecting 75 mm outside the wall surface and fixed on wall with 4nos, 6mm dia expansion hold fasteners, including drilling necessary holes in brick wall/ CC/ RCC surface and the cost of bolts etc. The pipes shall be fixed to the already fixed brackets with the help of 30 mm x1.6 mm galvanised M.S. flats of specified shape and of total length 420 mm and shall be fixed with M.S. nuts, bolts, & washers of size 25x6 mm, one bolts on each side of the pipe.				-		-
	17.77.1	Total bracket length 580 mm of approved shape and design (for single 100 mm dia pipe)	Each	500	179.40	89,700.00		-
	17.77.2	Total bracket length 810 mm of approved shape and design (for two 100 mm dia pipes or 150mm)	Each	500	216.30	1,08,150.00		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
	17.77.3	Total bracket length 1040 mm of approved shape and design (for three 100 mm dia pipes)	Each	400	253.15	1,01,260.00		-
						-		-
2.15	18.10	Providing and fixing GI pipes complete with GI fittings and clamps, i/c cutting and making good the walls etc and making good the same for waste water disposal complete as per direction of engineer incharge.				-		-
a)	18.10.4	32 mm dia nominal bore (Wash basin to floor trap/floor drain)	Metre	200	308.35	61,670.00		-
b)	18.10.5	40 mm dia nominal bore (Sink,Urinal to floor trap)	Metre	50	394.15	19,707.50		-
c)	18.10.6	50 mm dia nominal bore (Floor Drain to Floor Trap)	Metre	100	472.40	47,240.00		-
						-		-
2.16	NS	Providing and fixing floor drain & balcony drain made of 100 x 50 mm dia elbow / tee as applicable connected with 50 mm dia GI pipe painted with primer, two coats of black bituminastic paint,wrapping 1 mm thick PVC tape and final coat of black bituminastic paint B109 complete in all complete including cutting and making good the walls and floor wherever required	Each	10		-	883.08	8,830.76
						-		-
2.17	NS	Providing and laying cement concrete 1:2:4 (1 cement:2 coarse sand:4 graded stone aggregate 20 mm nominal size) 80 mm thick all-round the SCL/centrifugally S&S pipe diameter.				-		-
a)		100 mm dia	Metre	60		-	345.00	20,700.00
						-		-
2.18	NS	Providing and fixing dash fastner made of rust proof plated steel for holding the soil/waste supply pipes complete in all respect				-		-
a)		Dash fastner for pipe more than 25 mm dia to 150 mm dia pipe of size 25 mm dia and 75 mm long minimum & shall be capable of taking 6 tonnes load and also include the supporting angles 35x35x5 mm/ of required size or MS bars steel structures as per drawing.	Each	2000		-	379.46	7,58,924.10
						-		-
2.19	NS	Providing and fixing floor clean out plug consist of CI bend & GI socket heavy class with Brass cap & key for opening male threaded cap etc. including lead caulked to CI pipescomplete in all respects as per drawing/ sample approved by Engineer -in -ChargeFCO (floor clean out plug shall be flushed with floor finish				-		-
		100 mm dia/150 mm dia	Each	150		-	3,418.95	5,12,842.50
						-		-
2.20	NS	Providing and fixing G.I EXTENSION PIECE for 100 mm dia floor trap formed out of main pipe(Type A) with multiple side inlets, suitable for various dia pipes, side connections, including all fixtures and fittings as per site conditions and as per standard details and water tight sealing of joints and area surrounding the grating and as directed.	Each	200		-	1,194.00	2,38,800.00
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
2.21	NS	Providing and fixing WC connector socket(for vitreous china & CI pipe) of EDPM good quality with polypropelene body 100x150/100x250 of approved quality and make complete in all respect.	Each	170		-	350.00	59,500.00
						-		-
		SUB TOTAL(SOIL, WASTE AND VENT PIPES)				56,92,489.00		42,22,294.36
3.00		WATER SUPPLY						
3.01	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. INTERNAL WORK - EXPOSED ON WALL						
		Internal work – Exposed on wall						
	18.7.2	20 mm nominal outer dia Pipes(SDR-11)	Metre	150	179.95	26,992.50		-
	18.7.3	25 mm nominal outer dia Pipes(SDR-11)	Metre	300	216.20	64,860.00		-
	18.7.4	32 mm nominal outer dia Pipes(SDR-11)	Metre	500	289.05	1,44,525.00		-
	18.7.5	40 mm nominal outer dia Pipes(SDR-11)	Metre	900	385.50	3,46,950.00		-
	18.7.6	50 mm nominal outer dia Pipes(SDR-11)	Metre	1100	548.55	6,03,405.00		-
	NS	62.5 mm nominal outer dia Pipes(SDR-11)	Metre	250		-	1,200.00	3,00,000.00
	NS	75 mm nominal outer dia Pipes(SDR-11)	Metre	237		-	1,380.00	3,27,060.00
						-		-
3.02	18.8	Providing and fixing Chlorinated Polyvenyl 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 1.0 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 ciomplete as per direction of Engineer in charge.						
						-		-
		Concealed work including cutting chases and making good the walls etc.				-		-
a	18.8.1	15 mm nominal outer dia pipes (SDR-11)	Metre	150	246.20	36,930.00		-
b	18.8.2	20 mm nominal outer dia pipes (SDR-11)	Metre	2300	284.85	6,55,155.00		-
c	18.8.3	25 mm nominal outer dia pipes (SDR-11)	Metre	1250	333.60	4,17,000.00		-
	18.8.4	32 mm nominal outer dia pipes (SDR-11)	Metre	100	412.90	41,290.00		-
						-		-
3.03	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 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.						
		External Work				-		-
b)	18.9.3	25 mm nominal outer dia pipes (SDR-11)	Metre	10	191.65	1,916.50		-
c)	18.9.5	40 mm nominal outer dia pipes (SDR-11)	Metre	150	321.15	48,172.50		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
d)	18.9.6	50 mm nominal inner dia Pipes (SDR-11)	Metre	250	484.20	1,21,050.00		-
e)	18.9.7	62 mm nominal inner dia Pipes (SDR-11)	Metre	450	1,081.75	4,86,787.50		-
	18.9.8	75 mm nominal inner dia Pipes (SDR-11)	Metre	200	1,201.05	2,40,210.00		-
						-		-
3.04	18.10	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, i/c cutting and making good the walls etc. (For Pump Room)				-		-
		Internal work - Exposed on wall				-		-
a	18.10.6	50 mm dia nominal bore	Metre	10	472.40	4,724.00		-
b	NS	80 mm dia nominal bore	Metre	10		-	650.00	6,500.00
						-		-
3.05	18.13	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including, cutting and threading the pipe etc. complete including obtaining approval for connection from DJB/Municipal corporation :				-		-
a)	18.13.2	50 to 80 mm nominal bore (SDR-11)	Each	2	771.20	1,542.40		-
						-		-
3.06	18.17	providing and fixing Gun metal gate valve with C.I. wheel of approved quality (screwed end)				-		-
a)	18.17.1	25 mm nominal bore	Each	100	428.20	42,820.00		-
b)	18.17.2	32 mm nominal bore	Each	100	500.75	50,075.00		-
c)	18.17.3	40 mm nominal bore	Each	30	584.70	17,541.00		-
d)	18.17.4	50 mm nominal bore	Each	50	749.90	37,495.00		-
e)	18.17.5	65 mm nominal bore	Each	30	1,286.80	38,604.00		-
f)	18.17.6	80 mm dia nominal bore	Each	4	1,919.50	7,678.00		-
						-		-
3.07	18.18	Providing and fixing Ball valve (brass) of approved quality, High or low pressure with plastic floats complete				-		-
a)	18.18.2	20mm.	Each	7	327.05	2,289.35		-
						-		-
3.08	18.19	Providing and fixing gun metal non-return valve of approved quality (screwed end)				-		-
a)	18.19.4	50 mm nominal bore				-		-
a.i)	18.19.4.1	Horizontal	Each	8	987.70	7,901.60		-
b)	18.19.6	80 mm nominal bore				-		-
b.i)	18.19.6.1	Horizontal	Each	10	2,503.10	25,031.00		-
						-		-
						-		-
3.09	18.20	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main				-		-
a)	18.20.3	25 mm nominal bore	Each	2	363.70	727.40		-
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.

Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
3.10	18.21	Providing and fixing unplasticised PVC connection pipe with brass unions:				-		-
a)	18.21.2	45 cm length				-		-
a i)	18.21.2.1	15 mm nominal bore	Each	440	67.80	29,832.00		-
						-		-
3.11	18.31	Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately):				-		-
a)	18.31.1	100 mm diameter				-		-
a.i)	18.31.1.1	Class I	Each	6	3,317.55	19,905.30		-
						-		-
3.12	18.32	Constructing masonry chamber 30x30x50 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement: 4 coarse sand) for stop cock, with C.I. surface box 100x100x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement: 2 coarse sand:4 graded stone aggregate 20 mm nominal size) 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				-		-
a)	18.32.1	With F.P.s bricks	Each	6	1,195.35	7,172.10		-
						-		-
3.13	18.33	Constructing masonry chamber 60x60x75 cm, inside with 75 class designation 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 20 mm nominal size) 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				-		-
a)	18.33.1	With F.P.S. bricks	Each	2	6,849.60	13,699.20		-
						-		-
3.14	18.47	Providing and fixing G.I. Union in existing G.I. pipe line, cutting and threading the pipe and making long screws including excavation, refilling the earth or cutting of wall and making good the same complete wherever required:				-		-
a)	18.47.6	50 mm diameter pipe	Each	4	682.85	2,731.40		-
b)	18.47.8	80 mm diameter pipe	Each	4	996.45	3,985.80		-
						-		-
3.15	18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank ISI:12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank				-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
	a)	Treated water Tank and Untreated water tank	per litre	1,10,000.00	7.25	7,97,500.00		-
3.16	18.49	Providing and fixing C.P brass Bib Cock of approved quality.(Roca model no RT5A7825CA1 or other equivalent model as per approved make)				-		-
a)	18.49.1	15 mm nominal bore	Each	160	371.70	59,472.00		-
3.17	18.50	Providing and fixing C.P. brass Long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms. (Or other approved make Roca/Jaquar/Parryware.)				-		-
a)	18.50.1	15 mm nominal bore	Each	40	555.30	22,212.00		-
3.18	18.53	Providing and fixing C.P. brass Angle Valve for basin mixer and geyser/cisterns points of approved quality conforming to IS:8931.(Roca model no. RT5A8009CA1 or other equivalent model as per approved make)				-		-
a)	18.53.1	15 mm nominal bore	Each	440	475.70	2,09,308.00		-
3.19	18.52	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to 18:8931.(Roca model no. RT5A1525CA1 or other equivalent of approved make				-		-
a)	18.52.1	15mm nominal bore.	Each	40	545.95	21,838.00		-
3.20	18.59	Providing and fixing C.I. double acting air valve of approved quality with bolts, nuts, rubber insertions etc. complete (The tail pieces, tapers etc. if required will be paid separately):				-		-
a)	18.59.1	50 mm dia	Each	2	4,662.45	9,324.90		-
b)	18.59.2	80 mm dia	Each	2	5,649.75	11,299.50		-
3.21	18.60	Providing and fixing enclosed type water meter (bulk type) conforming to IS : 2373 and tested by municipal board complete with bolts,nuts rubber, insertions etc. (the tail plases if required will be paid seperatly)				-		-
a)	18.60. 1	80mm dia nominal bore (25 to 80 mm)	Each	2	3,104.90	6,209.80		-
3.22	18.62	Providing and fixing PTMT ball cock of approved quality, colour and make complete with Epoxy coated aluminium rod with L.P./H.P.H.D. plastic ball.				-		-
a)	18.62.4	40 mm nominal bore, 206 mm long weighin not less than 690 gms	Each	2	646.70	1,293.40		-
b)	18.62.5	50 mm nominal bore, 242 mm long weighin not less than 1240 gms	Each	2	1,125.25	2,250.50		-
3.23	18.76	Cutting holes upto 30x30 cm in walls including making good the same				-		-
a)	18.76.1	with F.P.S bricks	Each	150	219.20	32,880.00		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
3.24	18.77	Cutting holes up to 15x15 cm 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	100	209.25	20,925.00		-
						-		-
3.25	NS	Providing and fixing divertor type shower mixer with provision for shower & single tap complete in all respect.(roca model no.RT5A1725CA1 or other equivalent model as per approved make)	Each	50		-	3,500.00	1,75,000.00
						-		-
3.26	NS	Providing & fixing full way lever operated forged brass ball valve of brass body with forged brass hard chrome plated steel ball tested to a pressure not less than 10 Kg / sqcm with threaded / flanged joints complete with nuts, bolts, gaskets, washers etc.						
a)		15 mm diameter	Each	30		-	247.00	7,410.00
b)		20 mm diameter	Each	50		-	336.00	16,800.00
c)		25 mm diameter	Each	50		-	450.00	22,500.00
						-		-
3.27	NS	Providing and fixing motorized butter fly valve/rotary actuator (CI body, SS 316 disc. EPDM boot seat, EPDM boot seat, ss416 shaft,RPTEF bushing@PN16 rating) for filling of water tank complete with electrical water level control panel, including by pass connection for the same dia with manually operated butterfly valve and all piping and accessories complete in all respect- valve at domestic and flushingOHT Filling)						
a)		32 mm nominal bore	Each	6		-	3,296.25	19,777.50
b)		40 mm nominal bore	Each	6		-	4,179.20	25,075.20
c)		50 mm nominal bore	Each	8		-	4,789.39	38,315.12
						-		-
3.28	NS	Providing and fixing mosquito proof coupling of approved Municipal design for scour and vent pipes for RCC overhead tanks complete in all respects						
b)	17.3	25 mm diameter	Each	10	38.50	385.00		-
						-		-
3.29	NS	Providing and fixing CP brass air valves with gunmetal isolation valve fixed on pipe lines						
a)		15 MM nominal bore air vent with 15 mm isolation valve	Each	10		-	1,040.00	10,400.00
b)		20 MM nominal bore air vent with 20 mm isolation valve	Each	10		-	1,404.00	14,040.00
						-		-
	NS	Supply, instalation , testing & commissioning o PN10 rated Bronze compected pressure reducing valve stations complete.						
a)		PRV suitable for pipe line size of 40 mm dia NB(6.5-1.5 bar)	Each	4		-	20,249.00	80,996.00
b)		PRV suitable for pipe line size of 40 mm dia NB(6.5-1.5 bar)	Each	4		-	16,636.00	66,544.00
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
3.30	NS	Providing and fixing puddle flanged including 40 cm long GI pipe piece welded/threaded with MS plates 450x450x6 mm thick with both end screwed/flanged.				-		-
	a)	For 80 mm dia pipe	Each	2		-	962.00	1,924.00
	b)	For 100 mm dia pipe	Each	2		-	1,252.00	2,504.00
	c)	For 150 mm dia pipe	Each	4		-	1,851.00	7,404.00
						-		-
3.31	NS	Providing and fixing double seal type D.I. Manhole cover of 560 mm clear internal diameter of over all heavy duty with locking arrangement complete in all respects.	Each	10		-	7,500.00	75,000.00
						-		-
3.32	NS	Providing and fixing gun metal foot valve with stainer of approved quality/model complete in all respect				-		-
	a)	50 mm dia	Each	2		-	4,000.00	8,000.00
	b)	80 mm dia	Each	2		-	5,500.00	11,000.00
	c)	100 mm dia	Each	2		-		-
						-		-
3.33	NS	Providing and fixing of C.I. 'Y' type strainer flanged with SS 304 perforated screen including nuts, bolts and rubber insertions etc				-		-
	a)	80 mm dia	Each	2		-	5,318.00	10,636.00
	b)	100 mm dia	Each	2		-	6,121.00	12,242.00
						-		-
3.34	NS	Supplying, storing, handling, shifting, installation, testing and commissioning of C.P. head shower set comprising head shower with arm and wall flange chrome with ball joint adjustable shower jet. (Roca- RF18700A1 or other equivalent model as per approved make).	Each	30		-	1,383.00	41,490.00
						-		-
3.35	NS	Providing & fixing 9 mm thick thermal insulation tubing of elastomeric flexible material on hot water supply/return pipes having hermetic blistered closed cell structure of expanded synthetic rubber over pipes/ fitting as per manufacturer's specifications etc.complete.				-		-
	a	15 mm to 25 mm diameter	Meter	800		-	120.00	96,000.00
						-		-
3.36	NS	Supplying, fixing, testing and commissioning of storage type water heater (Geyser) etc. with outer body of ABS, 2 MM Thick Mild Steel inner Tank with glass line coating,option of 1/2/3 KW electrically operated single phase 230V, including Glass Lined Double Heating Element,Digital Display, Multifunction Safety Device, ELCB, Anode Rod System, and Brackets for fixing on wall with connecting Wire & plug etc. conforming to IS: 2082 and energy efficient star rated model.				-		-
	a)	25 Litre Capacity	Each	50		-	8,783.00	4,39,150.00
	b)	35 litre capacity	Each	30		-	11,072.00	3,32,160.00
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
3.37	NS	Providing & fixing water storage cooler of approved make and brand with SS body Complete in respects-230V Single Phase. (Voltas/Shriram/BLUE-STAR)				-		-
	a)	minimum flow rate of 40 ltrs. Per hour and storage capacity 80 ltrs.	Each	8		-	32,500.00	2,60,000.00
3.38	NS	Providing and fixing approved make & suitable model of R.O. plant 100 ltrs. Per hour flow rate having capacity to treat the raw water having TDS 1200 ppm and not less than 40%. The treated water should have TDS less than 100 ppm and hardness less than 50 ppm. The operating voltage to 230 volt AC +/- 10% alongwith required capacity pump and solenoid valves, dry run protection of pump, automatic tank level control, inbuilt auto flush timer for periodic flushing of membranes, hydro pneumatic tank, over voltage and over current protection with switch mode power supply system antiscaling dosing system complete in all respects including installation and fittings with the following provisions: (IONIEXCHANGE/ KENT/AQUAPROCESS/Pantair)				-		-
	a)	10 micron polypropylene sediment pre filter				-		-
	b)	10 micron bacteriostatic activated carbon block on line micron filter with 5 micron rating				-		-
	c)	3 Nos. of reverse osmosis memberane with 0.0001 micron pore size energy saving poly amide type				-		-
	d)	UV lamp of minimum capacity 100 LPM and minimum lamp wattage 9W	Each	3		-	1,55,000.00	4,65,000.00
						-		-
3.39	NS	Providing and fixing approved make & suitable model of R.O. plant (fully automatic operation) 600ltrs. Per hour flow rate having capacity to treat the raw water and average recovery not less than 35% . The operating voltage to 230 volt AC +/- 10% alongwith required capacity on line SS pump of approved make (3HP minimum) and solenoid valves, dry run protection of pump, automatic tank level control, inbuilt auto flush timer for periodic flushing of membranes, storage tank (3.0 mm (minimum) thick S.S. 304 sheet) 1500 lts of suitable size and its supporting structure, over voltage and over current protection with switch mode power supply system complete in all respects including installation and fittings with the following provisions: (IONIEXCHANGE/ KENT/AQUAPROCESS,Pantair)				-		-
		10 micron polypropylene sediment pre filter				-		-
		10 micron bacteriostatic activated carbon block on line micron filter with 5 micron rating				-		-
		Required Nos. and size of reverse osmosis memberane with 0.0001 micron pore size energy saving poly amide type				-		-
		UV lamp of minimum capacity 600LPH and minimum lamp wattage 15W				-		-
		MS powder coated frame efficient of TDS removal more than 90%. Antiscalant dosing and acid dosing system for self flushing/cleaning.Pressure switches and gauges, pH correction dosing system, Digital TDS meter, Digital pH meter, electric panel and necessary instrumentation included Rotameter.MS structure and fibre glass sheet weather protection cover as per site condition.	Each	2		-	4,50,000.00	9,00,000.00

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Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
						-		-
		SUB TOTAL(Water Supply)				47,43,896.65		37,72,927.82
4.00		SEWARAGE & DRAINAGE						
4.01	19.1	Providing laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the pro-portion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete.						
a)	19.1.1	100 mm diameter	Metre	50	216.25	10,812.50		-
						-		-
4.02	19.2	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design:				-		-
a)	19.2.1	100 mm diameter S.W. pipe/RCC NP2	Metre	50	622.95	31,147.50		-
b)	19.2.2	150 mm diameter S.W. pipe/RCC NP2	Metre	250	761.85	1,90,462.50		-
c)	19.2.4	250 mm diameter S.W. pipe/RCC NP2	Metre	300	1,027.00	3,08,100.00		-
						-		-
4.03	19.3	Providing and laying cement concrete 1:5:10 (1 cement:5 coarse sand:10 graded stone aggregate 40 mm nominal size) up to haunches of S.W. pipes including bed concrete as per standard design:				-		-
a)	19.3.2	150 mm diameter S.W. pipe	Metre	50	479.85	23,992.50		-
b)	19.3.4	250 mm diameter s.W. pipe	Metre	200	656.60	1,31,320.00		-
c)	19.3.5	300 mm diameter s.W. pipe	Metre	500	757.60	3,78,800.00		-
						-		-
4.04	19.4	Providing and fixing square-mouth S.W. gully trap grade 'A' complete with C.I. grating, brick masonry chamber with water tight C.I. cover with frame of 300x300 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:.				-		-
a)	19.4.2	150x100mm size P type				-		-
a.i)	19.4.2.1	F.P.S. Bricks class designation 75	Each	20	1,623.25	32,465.00		-
						-		-
4.05	19.6	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement:2 fine sand) including testing of joints etc. complete				-		-
a)	19.6.2	150 mm dia R.C.c. pipe	Metre	200	356.70	71,340.00		-
b)	19.6.3	250 mm dia R.C.C. pipe	Metre	450	482.05	2,16,922.50		-
	19.6.4	300 mm dia R.C.C. pipe	Metre	500	518.55	2,59,275.00		-
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
4.06	19.7	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand), R.C.C. top slab with 1:2:4 mix (1cement : 2 coarse sand : 4graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 (1cement : 4 coarse sand : 8graded stone aggregate 40 mm nominal size), inside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, and making necessary 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 all complete as per standard design.				-		-
a)	19.7.1	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):				-		-
a i)	19.7.1.1	With F.P.S. bricks with class designation 75	Each	10	8,634.10	86,341.00		-
						-		-
4.07	19.8	Extra depth for manholes				-		-
a)	19.8.1	Size 90 x 80 cm				-		-
a i)	19.8.1.1	With F.P.S. bricks class designation 75	Metre	1	5,718.60	5,718.60		-
						-		-
4.08	19.9	Constructing brick masonry circular type manhole 0.91m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement :4 coarse sand), in side cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement: 3 coarse sand: 6 graded stone aggregate 40mm nominal size), and making necessary channel 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 all complete as per standard design:				-		-
a)	19.9.1	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182kg., fixed in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) including centering shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :				-		-
a i)	19.9.1.1	With F.P.S. bricks class designation 75	Each	30	8,683.75	2,60,512.50		-
						-		-
4.09	19.10	Extra depth for circular type manhole 0.91m dia (at bottom) with beyond 0.91m to 1.67 m				-		-
a)	19.10.1	With F.P.S. bricks class designation 75	Metre	2	4,911.80	9,823.60		-
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.

Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
4.10	19.11	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement: 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 mix (1 cement :3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominalsize) finished with a floating coat of neat cement complete as per standard design.				-		-
a)	19.11.1	1.68 m deep with SFRC cover and frame(heavy duty HD-20 grade designation) 560 mm internal diameter conforming to IS: 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominalsize) including centering shuttering all complete. (Excavation, foot rests and 12 mm tick cement plaster at the external surface shall be paid for separately)				-		-
a.i)	19.11.1.1	With F.P.S. bricks with class designation 75	Each	10	16,560.80	1,65,608.00		-
						-		-
4.11	19.12	Extra depth for circular type manhole 1.22 m internal dia (at bottom) with beyond 1.68 m to 2.29 m				-		-
a)	19.12.1	With F.P.S. bricks with class designation 75	Metre	1	6,362.65	6,362.65		-
						-		-
4.12	19.16	Providing and fixing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS: 10910 on 12 mm dia steel bar conforming to IS: 1786 having minimum cross section as 23 mm x 25 mm and over all minimum length 263 mm and width as 165 mm 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 specification 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	150	327.90	49,185.00		-
						-		-
4.13	19.21	Making connection of drain or sewer line with existing manhole including breking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement:2 coarse sand:4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cemnet mortar 1:3 (1 cement:3 coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete (including obtaining approval from DJB/Municipal corporation				-		-
a)	19.21.1	For pipes 100 to 230 mm dia	Each	2	391.15	782.30		-
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
4.14	19.22	Providing sand cast iron drop connection externally for 60 cm drop from branch sewer line to main sewer manhole including inspection and cleaning eye with chain and lid sand cast Iron drop pipe and bend encased all-round with cement concrete 1 :5:1 0 (1 cement:5 fine sand: 10 graded stone aggregate 40 mm nominal size) with all centering and shuttering required, cutting holes in walls and making good with brick work in cement mortar 1:4 (1 cement: 4 coarse sand) plastered with cement mortar 1:3 (1 cement: 3 coarse sand) on, inside of the manhole wall lead caulked joints between sand cast iron pipes and fittings, stiff cement mortar 1:1 (1 cement: 1 fine sand) joints between sand cast iron tee and S.W. pipe, making required channels complete as per standard design and specifications:				-		-
a)	19.22.2	150 mm dia. sand cast iron drop connection	Each	15	8,902.10	1,33,531.50		-
						-		-
4.15	19.27	Constructing brick masonry road gully chamber 50x45x60 cm with bricks of class designation 75 in cement mortar 1:4 (1 cement:4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design:				-		-
a)	19.27.1	With F.P.S. bricks	Each	50	4,043.10	2,02,155.00		-
						-		-
						-		-
4.18	23.9	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four nos longitudinal & 9 nos cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations@ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 50 mm x 1.6 mm complete, all as per direction of Engineer-in-charge	Each	100	959.35	95,935.00		-
						-		-
4.19	NS	Constructing brick masonry open surface drain including with edge protected with MS plate of 3 mm thick with bricks of class designation 75 in cement mortar 1:4 (1 cement : 4 fine sand) including earth excavation, 10cm thick bed concrete 1:5:10 (1 cement: 5 fine sand :10 graded stone aggregate 40mm nominal size) and 25mm thick cement concrete 1:2:4 (1 cement:2 coarse sand:4 graded stone aggregate 12.5 mm nominal size) for filling hunches including 12mm cement plaster 1:4 (1 cement:4 coarse sand) with a floating coat of neat cement inside the drain, its top and exposed side including disposal of surplus earth complete as per standard design.				-		-
		300mm drain 450 mm average depth				-		-
a)		With F.P.S bricks	Metre	100		-	1,579.00	1,57,900.00
						-		-
4.20	NS	Providing and laying Laboratory/hospital effluent waste pipe and fitting of high density polyethelene (HDPE),CLASS -PE 80 ,pressure rating PN-6,conforming to IS :4427, electric fusion joints/flanged joints , fittings and jointing				-		-
a)	a)	160 mm dia	Metre	100		-	1,150.00	1,15,000.00

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
b)	b)	200 mm dia	Metre	150		-	1,360.00	2,04,000.00
						-		-
		SUB TOTAL(SEWERAGE AND DRAINAGE)				26,70,592.65		4,76,900.00
5.00		EARTH WORK						
5.01	2. 6	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth,1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50 m and lift up to 1.5 m , disposed earth to be levelled and neatly dressed.						
a)	2.6.1	All kinds of soil	Cum	60	125.95	7,557.00		-
						-		-
5.02	2. 10	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m:						-
a)	2.10.1	All kinds of soil				-		-
a.ii)	2.10.1.2	Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia	Metre	1500	225.45	3,38,175.00		-
						-		-
5.03	2. 25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m	Cum	20	125.75	2,515.00		-
						-		-
		SUB TOTAL(EARTH WORK)				3,48,247.00		-
7.00		RAIN WATER PIPING						
7.01	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	15	40.90	613.50		-
						-		-
7.02	17.4	Providing and fixing rain water ,soil, waste and vent pipes.						-
a)	17.35.1	100 mm dia.				-		-
a i)	17.35.1.2	Centrifugally cast (spun) iron socketed pipe as per IS:3989	Metre	640	921.65	5,89,856.00		-
c)	NS	150 mm dia pipe as per IS:3989	Metre	640		-	2,151.70	13,77,085.25
						-		-
7.03	17. 37	Providing and fixing M.S holder-bat clamps of approved design to Sand Cast iron/ cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) including cost of cutting holes and making good the walls etc.						-
a)	17.37.1	for 100 mm dia. pipe	Each	360	167.35	60,246.00		-
c)	NS	for 150 mm dia pipe	Each	360		-	200.00	72,000.00
						-		-
7.04	17.39	Providing and fixing plain bend of required degree.						-
a)		100 mm	Each	21	334.95	7,033.95		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
a ii)	17.39.1.2	Sand cast iron S&S as per IS:3989				-		-
c)	NS	150 mm	Each	21		-	1,191.79	25,027.63
						-		-
7.05	17.40	Providing and fixing heel rest sanitary bend.				-		-
a)	17.40.1	100 mm dia				-		-
a.ii)	17.40.1.2	sand cast iron S&S as per IS-3989	Each	21	370.95	7,789.95		-
c)	NS	150 mm dia	Each	21		-	925.20	19,429.12
						-		-
7.06	17.57	Providing and fixing collar				-		-
a)	17.57.1	100 mm				-		-
a.ii)	17.57.1.	Sand cast iron S&S as per IS-3989	Each	50	351.20	17,560.00		-
c)	NS	150 mm	Each	50		-	935.83	46,791.38
						-		-
7.07	17.58	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:				-		-
a)	17.58.1	100 mm	Each	100	309.95	30,995.00		-
c)	NS	150 mm	Each	100		-	401.00	40,100.00
						-		-
7.08	17.65	Painting sand cast iron / centrifugally cast (spun) iron soil, waste vent pipes and fittings with paint of any colour such as chocolate, grey, or buff etc. over a coat of primer (of approved quality) for new work:				-		-
a)	17.65.1	100 mm diameter pipe	Metre	640	40.65	26,016.00		-
c)	NS	150 mm diameter pipe	Metre	640		-	45.00	28,800.00
						-		-
		SUB TOTAL(Rain Water pipe & fitting)				7,40,110.40		16,09,233.38
8.00		BOREWELL(2 Nos.)						
8.01	4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :Providing and laying cement concrete 1:2:4 mix (for sanitary sealing of well at top.)						
	4.1.3	ment : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size).	Cum	2	5,481.95	10,963.90		-
						-		-
8.02	18.12	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc				-		-
	18.12.7	65 mm dia nominal bore	Metre	120	451.70	54,204.00		-
	18.12.8	80 mm dia nominal bore	Metre	200	576.30	1,15,260.00		-
						-		-
8.03	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)				-		-
	18.17.6	80 mm dia(horizontal)	Each	2	1,919.50	3,839.00		-
						-		-
8.04	18.19	Providing and fixing gunmetal non return valve of approved make tested to a pressure of 21kg/sqcm.				-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
	18.19.6.1	80 mm dia(horizontal)	Each	2	2,503.10	5,006.20		-
					-	-		-
8.05	23.1	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level			-	-		-
		All types of soil				-		-
	23.1.1.3	400mm	Metre	180	518.95	93,411.00		-
	23.1.2	Rocky strata including Boulders			-	-		-
	23.1.2.3	400 mm dia	Metre	20	1,034.50	20,690.00		-
						-		-
8.06	23.2	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, beyond 90 metre & upto 150 metre depth below ground level.				-		-
	23.2.1	All types of soil			-	-		-
	23.2.1.3	400 mm dia	Metre	100	648.70	64,870.00		-
	23.2.2	Rocky strata including Boulders				-		-
	23.2.2.3	400 mm dia	Metre	20	1,218.55	24,371.00		-
						-		-
8.07	23.8	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	Cum	10	1,175.60	11,756.00		-
8.08	23.10	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 mild steel screwed and socketed/ plain ended casing pipes of required dia, conforming to IS: 4270, of reputed & approved make, including painted with outside surface with two coats of anticorrosive paint of approved brand and manufacture, including required hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer-in-charge.			-	-		-
	23.10.3	200 mm nominal size dia having minimum wall thickness 5.00 mm	Metre	200	1,525.90	3,05,180.00		-
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
8.09	23.11	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 plain slotted (having slot of size 1.6/3.2 mm) mild steel threaded and socketed/ plain bevel ended pipe (type A) of required dia, conforming to IS: 8110, of reputed and approved make, having wall thickness not less than 5.40 mm, including painted with outside surface with two coats of anticorrosive bitumestic paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge			-	-		-
	23.11.3	200 mm nominal size dia	Metre	100	1,607.50	1,60,750.00		-
					-	-		-
8.10	23.12	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc.,all as per requirement and direction of Engineer-in-charge..	Hour	100	542.20	54,220.00		-
					-	-		-
8.11	23.13.	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of:				-		-
	23.13.3	200 mm dia	Each	2	231.75	463.50		-
						-		-
8.12	23.14	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.				-		-
	23.14.3	200 mm clamp	Each	2	1,154.45	2,308.90		-
						-		-
8.13	23.15	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).				-		-
	23.15.3	150 MM DIA	Each	2	253.95	507.90		-
						-		-
8.14		Submersible pumps				-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
		Providing and installing submersible pump and electrical panel suitable for 200 mm dia casing of bore with SS impeller, high tensile SS shaft, copper wound squirrel cage wet type induction motor 2880 rpm, 415 V, 50 Hz, 3 phase A.C. supply, conforming to ISS: 8034-1976, capacity 300-500 LPM at 80-120 m head along with a directly coupled submersible type squirrel cage electric induction 7.5 H.P(minimum) . motor suitable for operation on 400 V, 3 phase, 50 c.p.s. A.C. supply, water lubricated bearings and provided with pivoted segment type thrust bearings to withstand non-vertical lead with minimum wear and tear and duly fitted with device to take up the expansion of water with heating of motor, including supply, testing and commissioning of electrical panel from the same manufacturer, complete with all accessories in all respects. The contractor to obtain approval for model and make of pumpset & suitable Electrical panel after having yield report of fully developed tube well and submit actual bore strata chart.			-	-		-
		including supplying laying and fixing water proof PVC insulated flat submersible cable 3x10 sqmm with end termination with its accessories. complete in all respect as required. 1 No. 3 Phase, fully automatic star-delta starter, type - II of 15 HP with thermal overload relay, contactor, Timer, Push Buttons and Auto-manual selector switch etc complete as required.	Set	2		-	2,50,000.00	5,00,000.00
8.15	NS	Carrying out Electrical logging of Borewell before lowering of pipe for analysiing of water quality including Electrical logging report, calculation etc. including carry out hydrological survey report before boring & getting the approval based on Hydrogeological survey before start of the work. Also getting approval from local authority if any required	Job	2		-	30,000.00	60,000.00
						-		-
		SUBTOTAL (BOREWELL)				9,27,801.40		5,60,000.00
9.00		RAIN WATER HARVESTING (4 Nos.)						
9.01	23.1	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, repairing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level						
		All types of soil						
	23.1.1.3	400mm	Metre	40	518.95	20,758.00		-
	23.1.2	Rocky strata including Boulders				-		-
	23.1.2.3	400 mm dia	Metre	40	1,034.50	41,380.00		-
						-		-
9.02	23.3	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.				-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
	23.3.2	150 mm dia	Metre	20	572.30	11,446.00		-
						-		-
9.03	23.4	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				-		-
	23.4.2	150 mm nominal size dia	Metre	4	529.35	2,117.40		-
						-		-
9.04	23.5	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge	Cum	4	921.90	3,687.60		-
						-		-
9.05	23.6	Supplying, filling, spreading & leveling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	Cum	4	1,038.05	4,152.20		-
						-		-
9.06	23.7	Supplying, filling, spreading & leveling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads & lifts, all complete as per direction of Engineer-in-charge.	Cum	4	1,038.05	4,152.20		-
						-		-
9.07	23.8	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge	Cum	2	1,175.60	2,351.20		-
						-		-
9.08	23.9	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four nos longitudinal & 9 nos cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations @ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 50 mm x 1.6 mm complete, all as per direction of Engineer-in-charge	Each	8	959.35	7,674.80		-
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
9.09	NS	Constructing bar screen / settling tank, of sizes 4500x2500 with suitable depth up to 2.0 m in 1: 4 Cement Mortar (one cement : 4 coarse sand) height as per site requirement, in brick masonry 350mm thick walls upto water level and 230mm thick walls above water level & upto ground level, including all excavation, 20 cm thick bed concrete in 1:4:8 (one cement 4 fine sand 8 stone aggregate 40 mm), cement plaster 1:3 (one cement :3 coarse sand) with a floating coat of neat cement as inside finish , top slab in RCC 1:2:4, including centring, shuttering and steel work, also providing and fixing D.I. manhole cover & frame of size 605mm x 450mm of weight not less than 38 kg (frame + cover) and cost of 100mm dia C.I. vent pipe with C.I. Ventilating Cowl and suitable wire mesh provision for inlet, 115mm baffle walls extending 2/3 the width spaced@500mm c/c including finishing with 1:3 cement plaster 15mm thick with floating coat of neat cement slurry , all complete in every respect as per drawing and as directed to hart. y	Each	4		-	80,000.00	3,20,000.00
						-		-
						-		-
		SUBTOTAL (RAIN WATER HARVESTING)				97,719.40		3,20,000.00
10.00		SOLAR WATER HEATING SYSTEM & RECIRCULATION OF HOT WATER SYSTEM						
10.01	NS	Supply, installation, testing and commissioning of solar water heating system, Thermosyphon type, all complete based on Flat plat collector system (Cu-Cu Type only) comprising of but not limited to the following:				-		-
						-		-
a)		Requisite number of Flat plate collectors of 2 sq. mtr. collector area. Collector absorber plate to be made of copper tubes & copper fins only				-		-
						-		-
b)		Hot water storage tank made of 3 mm (mini.) stainless steel 304- food grade quality with 100 mm Glass wool insulation and cladding with 24 SWG Aluminum sheet. One temperature measuring device and suitable inlet, outlet and drain connections on the storage tank to be provided. Suitable Electrical Heater backup to be provided inside the tank along with thermostat				-		-
						-		-
c)		Heat Exchanger - Cage type Internal Heat Exchanger made of SS pipes shall be provided inside the Solar Tank. Heat exchangers shall have min. heat transfer area of 0.24 sq. mtrs. for every 100 LPD calacity. Suitable make up tank for the Heat Exchanger circuit shall also be provided				-		-
						-		-
d)		Interconnecting system piping shall consist of B Class insulated GI pipes covered with 50mm thick glasswool & clad with 26 SWG Aluminium Sheet. All Gate/Ball valves shall be of ISI make.				-		-
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
e)		Electrical control panel, cabling from panel to pumps and electrical heaters shall also be provided				-		-
f)		The solar collector shall be arranged on roof of building in such a way that shadow can be avoided and requisite number of MS support for collector/tanks of minimum 35x35x5 MS angle adequate for 150 Km/Hr wind speed.				-		-
g)		Solar water heating system based on Flat plat collector system technology with output capacity of as mentioned below with hot water at 60 degree centigrade having required Nos. solar collectors as per complete item as per technical specification of make BHEL/TATA/EMMVEE/ inter-solar. The system has to be installed by Manufacturers authorised distributors/approved specialised firms of Solar water heating of approved makeThe shop drawing of the systems shall be provided by the agency as per site condition obtain the proper efficiency The system shall be procured after obtaining the approval of shop drawings from HSCC / Engineer-in-charge.(Electric heating element shall not be provided in the system as the solar hot water system will supply the hot water to the individual geyser).				-		-
	i)	Solar System of Capacity 1000 Litre/day (With minimum 8nos of Collector of 2.0 Sqm area each)	Each	10		-	2,75,000.00	27,50,000.00
	ii)	Solar System of Capacity 1500 Litre/day (With minimum 12 nos of Collect) of 2.0	Each	15		-	3,90,000.00	58,50,000.00
						-		-
10.02	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.				-		-
		Internal work- Exposed on wall				-		-
a)	18.7.1	15 mm nominal outer dia pipes (SDR-11)	Metre	100	142.95	14,295.00		-
b)	18.7.2	20 mm nominal outer dia pipes (SDR-11)	Metre	200	179.95	35,990.00		-
c)	18.7.3	25 mm nominal outer dia pipes (SDR-11)	Metre	150	216.20	32,430.00		-
						-		-
10.03	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.				-		-
		Concealed work including cutting chases and making good the walls etc.				-		-
a)	18.8.1	15 mm nominal outer dia pipes (SDR-11)	Metre	100	246.20	24,620.00		-
b)	18.8.2	20 mm nominal outer dia pipes (SDR-11)	Metre	80	284.85	22,788.00		-
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
10.04	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):				-		-
a)	18.17.1	25 mm nominal bore	Each	4	428.20	1,712.80		-
10.05	NS	Providing & fixing 9 mm thick thermal insulation tubing of elastomeric flexible material having hermetic blistered closed cell structure of expanded synthetic rubber over pipes/ fitting as per manufacturer's specifications etc.complete.				-		-
a)	a)	15 mm dia to 25 mm dia	Each	630		-	120.00	75,600.00
10.06	NS	Providing & fixing full way lever operated forged brass ball valve of brass body with forged brass hard chrome plated steel ball tested to a pressure not less than 10 Kg / sqcm with threaded / flanged joints complete with nuts, bolts, gaskets, washers etc.				-		-
a)		15 mm nominal bore	Each	10		-	247.00	2,470.00
b)		20 mm nominal bore	Each	8		-	336.00	2,688.00
						-		-
		SUBTOTAL(SOLAR WATER HEATING SYSTEM & RECIRCULATING SYSTEM)				1,31,835.80		86,80,758.00

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
11.00	NS	WATER TREATMENT PLANT (for Domestic use)						
		Planning, Designing, Detailing, Manufacturing, Supplying, Erection, Testing and Commissioning of Water treatment plant for supply of treated water for use of domestic purpose comprising of filter and pumps. The plant is to be installed in pump room and Raw water supply is available in UGT including design and execution of all Civil, Structural, Electrical, Mechanical, Plumbing and processing, ancillary equipments & works etc required to complete the package, getting approval from HSCC/client etc.				-		-
		The shop drawings & design of WTP shall also be prepared in such a way that it comprise of the following units of required size as per detail design requirements. The work has to be carried through authorised vendor, dealer/representative of approved make.				-		-
						-		-
i)		Providing and fixing vertical on line SS raw water filter feed pumps with CI volute and SS impeller and with stainless steel shaft, mechanical seal and chrome steel shaft sleeve, connected to a TEFC induction motor suitable for 400/440 volts, 1500 RPM, 3 phase 50 cycles A.C. supply having IP 55 protection enclosure. complete with base frame, vibration eliminating pads, nuts and bolts etc. with suction strainer (Necessary RCC foundations as per requirement and as per instructions shall be provided by the agency)				-		-
		Raw water , filter feed pumps(only for domestic use).				-		-
		Capacity : 350 lpm (Each)				-		-
		Head 35 m				-		-
		Power : 5 HP or				-		-
		with 100% standby pumps(1W+1S)				-		-
ii)		Providing and fixing C.I. "Y" Type suction strainer with stainless steel perforated sheet screen, flanged ends iner installed outside water tanks. (Make: Leader / Zoloto / Kartar or equivalent)				-		-
		50/80 mm dia (min.) or required size and required number(1 Set)				-		-
						-		-
iii)		Providing and fixing gun metal or bronze ball valves/butterfly valve/NRV/Rotameter, tested to 15.00 Kg / cm ² , screwed end connections complete . (Make: Leader/ Zoloto or equivalent)				-		-
		80/50 mm NB (min.) or required size and number(1 Set)				-		-
						-		-
iv)		Filtration Plant : Vertical Downflow Multigrade Pressure Sand Filter in MS Welded construction fabricated in accordance with IS 2825 from minimum 6 mm thick M.S. plate on shell and minimum 8 mm thick M.S. plate on dished ends as per applicable IS standards. The filter shall have :				-		-
		a) One no pressure tight manhole and at least one no. pressure tight side hole for maintenance purposes.				-		-
		b) Initial charge of Filter Media.				-		-

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Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
		c) Complete underdrain system and raw water distributor as per manufacturer's design.				-		-
		d) M.S. heavy class fabricated - epoxy coated / post galvanised face piping comprising of connections with CI Butterfly Valves of required size for inlet, outlet, backwash inlet, backwash drain and rinse drain. Air release line with GM Ball Valve of required size.				-		-
		e) Pressure gauges (100 mm dia bourdon type pressure gauge) / Sampling points with SS isolation cocks at inlet and outlet.				-		-
		f) All internal parts of the filtration plant shall be coated with two coats of food grade epoxy paint after thorough sand blasting. All external surfaces of the plant including piping shall be coated with two coats of red iron oxide / zinc chromate primer followed by two coats of high gloss enamel paint .				-		-
		g) The filter shall be complete with all gaskets / fasteners of standard quality as required.				-		-
		h) The filter shall be designed to give rated output at given raw water quality and flow rate without any operational problem and should not get any loss of performance as long as the operating pressure remains within the given range rate including the all back washing system. Any additional provision is required to make the item complete, the same should be included herein. The work has to be carried through authorised vendor, dealer/representative of approved make. The filter water will be supplied to treated water tank through U.V. water steriliser (UV steriliser paid separately)				-		-
		Capacity - 350lpm				-		-
		Filtration rate - 20,000 lph/sqm (min.)				-		-
		Filter dia approx. 1.0 m (min.)				-		-
		Filter HOS Min. : 1600 mm (min.)				-		-
		Working pressure : 3.0 Kg/sq cm.				-		-
		Test pressure : 4.5 Kg/sq cm				-		-
		No. Of Unit - 1 Set				-		-
v)		UV WATER STERILISERS(between filter &clear water tank)				-		-
		High performance on line UV water sterilisers of capacity 250 lpm designed on at least 250 J/Sq. M. UV dosage, comprising of glass UV chamber in SS 316 housing, UV lamp and electrical circuit, wall mounted model / line mounted model, capacity 250 lpm, minimum lamp rating :150 watts - 1 Nos.				-		-
						-		-
vi)		Providing and fixing G.I.pipes/CPVC pipes to I.S. 3589/1239 (Heavy class) with G.I./CPVC Fittings e.g., Tee, elbow reducers, unions, end cap etc., flanges & clamps, including supporting the pipes with G.I. supports, cutting and making good the walls etc. complete. For Suction & Delivery headers. 1set				-		-
		50 mm dia (min.) (Interconnection between units)/ Drain lines etc. as per plant room requirement. (All piping and fitting of required size inside the plant room included in the item)				-		-

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Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
						-		-
vii)		Painting G.I./CPVC pipes with two or more coats of synthetic enamel paint of approved quality and shade over a coat of approved priming coat as directed by the Project-in-charge (shade as per pipe colour code).				-		-
						-		-
		Complete W.T.P as mentioned above including testing, training and trial run till commissioning of W.T.P. [Total of Sub Head WTP(i) to (vii)]	Set	1		-	1182100	11,82,100.00
						-		-
11.02		Providing and fixing of OxiLyte (Mixed Oxidant) Generation System , based on ECA technology, producing non toxic mixed oxidant solution 30 Ltrs/hr at 1000 ppm of Oxidant concentration with auto flushing system . The solution should be at a pH 3+-0.5 suitable for 24x7 operations should produce 720 L per day. The system should be supplied complete with appropriate dosing pumps, valves, piping, fittings, chemical dosing tank etc. complete in all respect(shope drawing model and technical data etc. are to be submitted for approval before purchase). The system shall install to dose the oxylite solution in the treated water transfer pumping main and synchronised with the operation of transfer pump	LOT	2.00		-	15,50,400.00	31,00,800.00
						-		-
11.03		STRUCTURAL STEEL WORK				-		-
i)		Supply, fabrication, erection, painting of pipe supports of structural steel, for piping work in the production areas and anchoring them. 2 coats of zinc chromate primer and one coat of finishing paint	Kgs	3,000.00		-	60.00	1,80,000.00
						-		-
11.04		Supplying, assembly, erection, testing and commissioning of level controllers based on level switches and necessary auxillary circuits included in the electric panel ,including all accessories required for the performance of the system to the satisfaction of the engineer in charge complete including providing and fixing wiring from control panel to the level switches of required size,all interconnections as required . Note : The required transformers / associated equipment shall be designed keeping in view the actual distance of various tanks from the control panel, particularly the distance of Terrace water tank from panel. The most suitable route of sensor cable travel between the panel and the tank shall have to be worked out by the contractor according to site conditions and in consultation with engineer in charge. All cabling / switch installation should be done in an easy to maintain manner.				-		-
		One way one tank level controller as under.				-		-
i)		To switch on the tube well pump when the level of water in the UG raw water tank is low and to cut off the pump when the level in the underground raw water tank is high. (Approx. control cable requirement -100 meters.)	set	2.00		-	30,000.00	60,000.00
		Two way - Two tank level controller as under.				-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
ii)		For Filter Feed Pumps for Domestic Water.(Operating between the raw water tank and the under ground treated water tank near the plant room. (Approx. control cable requirement - 50 meters.)	set	2.00		-	25,000.00	50,000.00
iii)		For Feed Pumps for Softener.(Operating between the Treated water tank and the under ground soft water tank near the plant room. (Approx. control cable requirement - 50 meters.)	set	2.00		-	20,000.00	40,000.00
iv)		For Treated water supply Pumps(Operating between the under ground treated water tank near the plant room and the Terrace treated water tank . (Approx. control cable requirement - 50 meters.)	set	2.00		-	20,000.00	40,000.00
v)		For Raw water supply Pumps(Operating between the under ground Raw water tank near the plant room and the Terrace Raw water tank . (Approx. control cable requirement - 50 meters.)	set	2.00		-	20,000.00	40,000.00
vi)		For soft water supply Pumps(Operating between the under ground soft water tank near the plant room and the Terrace soft water tank .(Approx. control cable requirement - 50 meters.)	set	2.00		-	20,000.00	40,000.00
						-		-
						-		-
11.05		Supplying, installing, testing and commissioning vertical on line multi stage centrifugal pumping set with mechanical seal, C.I. volute and SS impeller & SS shaft connected to a TEFC induction motor of suitable HP for 415 volts, 3 phase, 50 cycles A.C. supply with 150 mm dia pressure gauge with SS/gunmetal isolation cock, vibration eliminating pads, base plate wiring upto panel and equipment for water level controller to start and stop the pump automatically at predecided levels of the water in the tank with provision of protection for dry run etc. complete in all respect. The efficiency of the pump shall be more than 60% (The shop drawing or the pumps along with its characteristics curves, model and technical data etc. are to be submitted for approval before purchase of pump).				-		-
a)		Domestic water pumps (Treated water transfer pump to terrace tank)				-		-
		Capacity 350 lpm	Each	4.00		-	1,50,000.00	6,00,000.00
		Head 65 M				-		-
b)		Domestic water pumps (Raw water Transfer pump to terrace tank)				-		-
		Capacity 150 lpm				-		-
		Head 65 M	Each	2.00		-	1,25,000.00	2,50,000.00
						-		-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
11.06		Supply, installing, testing and commissioning vertical fully floodable type submersible drainage pump of non-corrosive material in close coupled design single stage, suitable for handling minimum 10 mm dia solids for transferring waste water from sump to outside the building with float switch for automatic start and stop arrangement with panel and wiring, chain and pulley, mechanical seal complete in all respect as per instruction of the Engineer in charge. (The shop drawing or the pumps along with its characteristics curves, model and technical data etc. are to be submitted for approval before purchase of pump).Star delta suitable starter complete in all respect for automatic/manual operation of pump,start and stop push button contactor with required overload production and single phase preventor.				-		-
		Material of Construction (M.O.C): Corrosion Resistant in general				-		-
		: Casing — Cast Iron				-		-
		: Impeller — SS				-		-
		: Bearings — Anti friction, prelubricated ball bearings, packed with grease for life.				-		-
		Motor: — Dry Motor with built in over load protection				-		-
		Protection - IP68.				-		-
		Insulation Class - F				-		-
		Duty of each pump				-		-
		250 LPM against 15 M head	Each	4.00		-	50,800.00	2,03,200.00
						-		-
11.07		Testing Underground tank for water seepage before fixing of tiles or any other finishing including pressure grouting (if required). The tank should be disinfected and cleaned before use as per instruction of Engineer-in-charge(up to 5 lac ltr tank)	Set	1.00		-	15,000.00	15,000.00
						-		-
11.08		Softener				-		-
		Supply, installation & testing and commissioning of upflow cation Ion exchange resin water Softener fabricated with Fibre reinforced Plastic (FRP) with frontal piping & valves, back wash system & strongly acidic cation resin with regeneration assembly comprising of power valve ejector,brine suction valve,tankl etc. with single lever operated multiport valve system with standard fittings like pressure gauge at inlet & outlet, sampling cock, rinse drain valve, air vent valve with piping, bolts, nuts & rubber gaskets, pump and Panel complete in all respect including regeneration pump,tank, compressure, pipe etc.complete.				-		-
		Flow rate = 3.0 cub. m/hour				-		-
		Working pressure = 3.5 kg/Sq. cm.				-		-
		Raw Hardness-700-1500 mg/l				-		-

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Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
		Soft water quality-Commercial zero hardness(less than 5ppm)				-		-
		Output per Regeneration-10 cum.(min.)	Each	1.00		-	1250500	12,50,500.00
		Online Softner feed pump(SS) of suitable size & capacity				-		-
						-		-
		Total (Water treatment Plant,Pump and Equipment)				-		70,51,600.00

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.

Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
12.00		WATER SUPPLY ELECTRICAL PANEL						
1.00	NS	Water Supply Pump						
		Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, powder coated, Free standing type, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as technical specification & as required.						
		Note :						
		All MCCBs shall have Ics=Icu =100%						
1.01		INCOMER :						
		250 Amp 415 volts, 35 KA (Ics=Icu), FP MCCB microprocessor based, with O/L, S/C & inbuilt E/F protection release.						
		R,Y&B phase indicating lamp (LED type) with 6A control SP MCB						
		"ON" ,"OFF" and "TRIP" LED indicating lamp and 6A control SP MCBs						
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
		1 no. Digital voltmeter with selector switch						
		1 no Digital ammeter with selector switch with one set of suitable C.T. s						
		BUSBARS :						
		300 Amp TPN busbars of aluminium						
		OUTGOINGS :						
i		2 Sets of following (Treated water transfer pump to terrace tank)						
		63 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. .						
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
		1 NOs. 3 Phase,star-delta starter of 10 HP with thermal overload relay with inbuilt/separate single phase preventer , contactor, Timer, Push Buttons and Auto-manual selector switch etc including its mounting on the wall and control cables for starting of the motor complete as required.						
		LED indicating Lamps for "ON" , "OFF" & "TRIP".						
		Digital ammeter with selector switch with one set of suitable cast resin C.T' s						
ii		2 Sets of following (Raw water transfer pump)						
		32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. .						

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.

Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
		1 no 3 Phase,DOL starter of 5 HP with thermal overload relay with inbuilt single phase preventor , contactor, Push Buttons and Switches etc complete as required.						
		LED indicating Lamps for "ON" , "OFF" & "TRIP".						
		Digital ammeter with selector switch with one set of suitable cast resin C.T' s						
iii		2 Sets of following (Soft water transfer pump)						
		32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. .						
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
		1 no 3 Phase,DOL starter of 1 HP with thermal overload relay with inbuilt single phase preventor , contactor, Push Buttons and Switches etc complete as required.						
		LED indicating Lamps for "ON" , "OFF" & "TRIP".						
		Digital ammeter with selector switch with one set of suitable cast resin C.T' s						
iv		4 Sets of following (Filter feed pump for WTP)						
		32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. .						
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
		1 no 3 Phase,DOL starter of 7.5HP with thermal overload relay with inbuilt single phase preventor , contactor, Push Buttons and Switches etc complete as required.						
		LED indicating Lamps for "ON" , "OFF" & "TRIP".						
		Digital ammeter with selector switch with one set of suitable cast resin C.T' s						
v		1 Sets of following (Drainage pump)						
		32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. .						
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
		1 no 3 Phase,DOL starter of 2 HP with thermal overload relay with inbuilt single phase preventor , contactor, Push Buttons and Switches etc complete as required.						
		Digital ammeter with selector switch with one set of suitable CT,s.						
		LED indicating Lamps for "ON" , "OFF" & "TRIP".						

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
vi		1 Sets of following (tube well)						
		63 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. .						
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
		Digital ammeter with selector switch with one set of suitable CT,s.						
		LED indicating Lamps for "ON" , "OFF" & "TRIP" .						
		Digital ammeter with selector switch with one set of suitable CT,s.						
vii		2 Sets of following (Spare)						
		32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. .						
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
		LED indicating Lamps for "ON" , "OFF" & "TRIP" .						
		Water supply PUMP PANEL in pump room as above	Set	1.00			3,24,290.57	3,24,290.57
								-
1.02		Starter for Tubewell						-
		I nos . 3 Phase, fully automatic star Delta starter of 20HP with thermal overload relay with inbuilt/separate single phase preventer , contactor, Timer, Push Buttons and Auto-manual selector switch etc including its mounting on the wall and control cables for starting of the motor complete as required.	each	1.00			19,446.45	19,446.45
								-
		Subtotal (Water Supply Panel)						3,43,737.02

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
						-		-
13.00		EFFLUENT TREATMENT PLANT(ETP)				-		-
		Providing and fixing packaged type Effluent treatment plant including design/shop drawing and obtain the approval from HSCC,erection,commissioning,construction of ETP including civil,mechanical,electrical,piping work complete in all respect on turnkey basis.The system should be fully automatic with level control,compact,odor free and shall consume low power. ETP will be placed near STP site of the building of suitable size for 15 KLD required to treat the effluent of lab,laundry,kitchen and hospital facilities by using suitable technology complete in all respect including oil and grease trap/chemical reaction with suitable chemical dosing such as Fentons reagent or any other suitable for effluent/mixer/settler/neutralisation chamber,dosing pump and agitator ,holding tank,including multigrade filter stand by motor pump,blower etc. pumps and piping,filter,sludge holding tank,filter press,testing kit,electrical panel,air blower,RCC Equilisation tank/holding tank.Treated water transfer pump and sump of suitable chart. i						
		Agency has to monitor the lab waste effluent for various parameter and quantity obtaining desired no. of test reports of raw/treated lab effluent The ETP work includes pumps,blower,raw and treated water tank PVC,electric Panel, electric wire inside the ETP area, 1 No. mixed oxident generation system based on ECA Technology of approved make 30 Ltrs/hr capacity. SS Agetor in reactor Tanks, Dosing pumps & tanks , ladder,working platform,painting,interconnecting pipe valve,foundation, support etc., complete in all respect(all pump shall be SS impler & adequate solid handling capacity, Mechanical Sea				-		-
		All the unit of ETP shall be MS sheet min. 4/5 mm thickness with suitable structure support complete in all respect including min2-3 layers approved epoxy / FRP or other approved corrosion resistant coating/protection of all parts.The ETP units shall be designed in such a way that the lab effluent doesnot effect the function of STP when treated lab effluent mixed in the domestic sewer line,treated effluent shall meet the SPCB norms and also obtain adequacy report and treated effluent test report for SPCB. Agency has to maintain and operate the ETP during defect liability period including cost of manpower,chemical etc except electricity cost.Work shall be carried out by specialised agency / authorized Vender of ETP (Geo Miler & Co, Ion-Exchange, Oxybee, Pollucon Technologies, Thermax,) authorized Vender will be required to produce documents in support of their authorization from the specialised agency. The work shall be carried out by trained authored staff of the company. (excluding cost of civil wohar	Each	1.00		-	35,00,000.00	35,00,000.00
						-		-
		Subtotal (Effluent Treatment Plant)				-		35,00,000.00
14.00		SEWAGE TREATMENT PLANT						

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.

Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
14.01		Planning,Designing,Detailing,Supplying, Erection,Testing and Commissioning of Sewage treatment plant based on MBBR (Moving bed Bio Reactor)/FAB technology of average flow rate of 185 cu.m/day for sewer including provision of recirculation of treated sewage/effluent for the use of horticulture/flushing/A/c purposes including design and execution of all civil,structural,electrical,mechanical, plumbing and processing, ancillary equipments and works etc required to complete the package, getting approval from state pollution control board and other statutory bodies as well as from HSCC /Client including the cost of STP building for electrical room, treated sewage under ground storage tank etc.						
		All the water retaining structure shall be designed as water retaining structure as per provision of IS code and water proofing with fixed or any other approved chemical shall be carried out by approved agency with 10 year (minimum) guaranty. All the unit shall be painted by epoxy or fixed with the white glazed tiles of approved make. The civil works of entire STP will be carried out by agency as per drawings prepared by STP E&M agency. The shop drawings & design of STP shall also be prepared in such a way that it comprise of the following units of required size as per detail design requirements & meeting the following requirements The work has to be carried by approved make agency / through authorised vendor/dealer of approved make under overall supervision of main approved agency as per list of approve make (lon exchange, Pollucon technologies, Thermax, geo miler).						
a)		The shop drawings & design of STP shall be prepared by the agency . As per site condition/available space most of the unit will be placed below ground under road/green area/ as per site condition and equipment and Panel room may be above the ground level as per approved drawings .The STP shall be comprising of the following units of required size as per detail process and hydraulic design. The structure design shall be carried as per provision of IS code. The agency has to get their structure drawing checked and approved by any govt. Engineering college approved by consultant. (Set-1)						
b)		RCC Suitable size mechanical Bar Screen chamber with minimum free board 300 mm and minimum size 1.5 mx1.0mx0.40 m SWD and additional manual suitable size SS Bar screen is installed at suitable angle at the inlet of raw sewage sump before pumping and mechanical system to collect and lifts/transport the screening material . The unit shall be designed for peak flow , and one no. SS slotted additional manual fine screen 2 mm thick after mechanical bar screen to be fixed in chamber itself. Inlet chamber of suitable size with Motorized sluice valve to control the inlet raw sewage to STP.						
i.		Complete mechanical Bar Screen and SS slotted fine screen Electrical & mechanical Works , screening material collection and lifting system upto Ground formation level (excluding civil works) (Set-1)						

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.

Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
c)		RCC 2 nos., Suitable size Grit chamber with grit removal arrangement at one end of the chamber operated at a fixed interval. The grit chamber shall be suitable for surface overflow rate 959 m ³ / m ² / day, The unit shall be designed for peak flow.						
		Cost of deflector (MOC- SS 304) at upstream and proportional flow weir (MOC-SS 304) at downstream of Grit Chamber.						
d)		Supply, installing, testing and commissioning vertical fully floodable type submersible drainage pump of non-corrosive material in close coupled design single stage, suitable for handling 40 mm(approx.) dia solids for transferring raw sewer from sump to outside the building with float switch for automatic start and stop arrangement with panel and wiring, chain and pulley, mechanical seal complete in all respect as per instruction of the Engineer in charge. (The shop drawing or the pumps along with its characteristics curves, model and technical data etc. are to be submitted for approval before purchase of pump).Star delta suitable starter complete in all respect for automatic/manual operation of pump, start and stop push button contactor with required overload protection and single phase preventer.						
		Material of Construction (M.O.C): Corrosion Resistant in general : Casing — Cast Iron						
		: Impeller — Ductile cast iron/SS						
		: Bearings — Anti friction, prelubricated ball bearings, packed with grease for life.						
		Motor: — Dry Motor with built in over load protection Protection - IP68.						
		Insulation Class - F						
		RAW SEWAGE PUMP						
		Capacity -100LPM (min.)						
		Head - 15 m						
		Solid handling - 20-40mm						
i.		RAW SEWAGE PUMP Electrical & mechanical Works , excluding civil works (2 working+ 2 stand by) Total 4 Nos.						
ii.		Drainage Sump Pump-300LPM & 10 M head (2 Nos.)						
iii.		Sludge recirculation pump: 50 LPM & 10 m Head(2 Nos.)						
e)		RCC Equalization tank with hydraulic retention time Min.5 Hrs HRT of STP designing Average flow with suitable Size free Board 500 mm, the effluent of equalisation tank is agitated with diffused air that is fed by an air blower, including pipe non-corrosive material and its complete system.						
i.		Equalisation tank Electrical & mechanical Works , excluding civil works (Set-1)						

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.

Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
f)		RCC Moving bed Bio Reactor (MBBR) with minimum 5hr. retention time of STP designing Average flow rate for each reactor of suitable size with Air grid CPVC/SS - 304 pipe material of construction or corrosion resistant material, Air diffusers (fine bubble), HDPE approved make Bio media for each aeration tank, with minimum water depth of 3.8 m.(media - MM Acqua or approved by HSCC.						
i.		Moving bed Bio Reactor - Electrical & mechanical Works , excluding civil works -(2 nos.)						
g)		ROTARY AIR BLOWERS						
		Providing and Installation of Rotary air blowers for air scouring, driver through v-belt or directly coupled through flexible coupling. Motor shall be of suitable HP for 400-440 volts, ,1500RPM, 3 phase, along with air filter, non-return valve, safety valve, base plate and necessary air piping fittings, valves, flowmeters etc.						
		(Blower capacity - 50cfm at 4000 mm wc(minimum) shall be provided as per detail design calculation. It is use for equalisation tank and MBBR reactor - (2 working +2 stand by) Blowers shall be fully automatic. with fine bubble Air diffusers (tubeler type, Rating -5 -6 cfm at normal working condition, MOC diaphragm- Neoprene/silicon) - Complete including Electrical & mechanical Works , excluding civil works. Make of diffuser - Rehau, Techpro , OTT, MM Aqua Make of Blowers- Kay, Everest , Usha , Swam						
i.		ROTARY AIR BLOWERS - Electrical & mechanical Works , excluding civil works(4 nos. Blower &etc)						
h)		RCC secondary tube settler/Lamella Clarifier - maximum Hydraulic loading 1.75 cu.m/sq.m/hr /1.5 cu.m/sq.m./hr. respectively and with approved quality media with minimum water depth of 2.4 m.+ Free board & hopper bottom. The lamina clarifier media shall be of acrylic plate min. 10 mm thick						
i.		Tube settler - Electrical & mechanical Works , excluding civil works (Set-2)						
i)		Providing and fixing of OxiLyte (Mixed Oxidant) Generation System, based on ECA Technology, producing non toxic mixed Oxidant Solution 30 ltrs/hr at 1000 ppm of Oxidant Concentration . The solution should be at a pH 3+-0.5 suitable for 24x7 operations should produce 720 litre per Day. The system should be supplied complete with appropriate dosing pumps , valves, piping, fittings, chemical dosing tank etc. complete in all respect. with auto flushing system.						
i.		OxiLyte (Mixed Oxidant) Generation System - Electrical & mechanical Works , excluding civil works (Set-2)						
j)		RCC supernatant tank /Filter feed tank minimum 60 cu.m capacity with following filter feed pumps -						
k)		FILTER FEED PUMPSETS						

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.

Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
		Providing and installation vertical inline single/multistage centrifugal pumping set with CI body, SS impeller, coupled with totally enclosed fan cooled induction motor mounted on common structural base plate with all pump accessories complete as per specifications inclusive rubber vibration eliminators motor suitable for 415 volts, 1500RPM, 3 phase 50 HZ. A/c supply.						
		Type of pump - Horizontal						
		Capacity -300LPM (Mini.)						
		Head - 30 M						
		(1 working +1 stand by) - 2 nos.						
i.		Filter feed tank & Pumps - Electrical & mechanical Works , excluding civil works						
l)		MULTI GRADE FILTER						
		Providing and installation of mild steel pressure vessel (as per IS:2825) 6 mm thick natural rubber lining fabrication standard multi grade filter complete in all respects, with dished ends, supporting legs, manhole cover, frontal pipe work fitting with valves. Plant shall be provided with inlet, outlet pressure gauge, sample cocks, charge of filter media graded sand and internals consisting of strainers fitted on plate for collection.						
		Dia of vessel - 900 mm (minimum)&1.6 m height						
		Shell thickness -6mm (minimum.)						
		Filtration rate - 20,000 lph/sqm (min.) &						
		Dish end thickness-8mm (minimum.)						
		Nozzle plate -10mm thick (minimum.)						
		Manhole -450mm						
		Total capacity -300 LPM each Filter, complete (mini.)						
i.		MULTI GRADE FILTER - Electrical & mechanical Works , excluding civil works-1 no.						
m)		ACTIVATED CARBON FILTER						
		Providing and installation of mild steel pressure vessel (as per IS:2825) 6 mm thick natural rubber lining fabrication standard multi grade filter complete in all respects, with dished ends, supporting legs, manhole cover, frontal pipe work fitting with valves. Plant shall be provided with inlet, outlet pressure gauge, sample cocks, charge of approved quality activated carbon media. Provision of backwash and recharging of activated carbon etc. complete						
		Depth of Activated carbon media- 1.0 m						
		Activated carbon type-(950 IV 4/8 mesh)						
		Dia of vessel -900mm (minimum)& 1.6 m ht.						
		Shell thickness -6mm (minimum.)						
		Dish end thickness-8mm (minimum.)						
		Nozzle plate -10mm thick (minimum.)						
		Manhole -450mm						
		capacity -300LPM,						
i.		ACTIVATED CARBON FILTER - Electrical & mechanical Works , excluding civil works-1 no.						

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.

Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
n)		RCC 1 nos. Suitable size sludge sump of min. capacity 25 cu.m with min. free board 500 mm. The sludge of sludge sump is agitated with diffused air that is fed by an air blower (Common for MBBR tank), including pipe non-corrosive material and its complete system.						
		Cost of Screw type sludge feed pump set with CI body, SS screw and shaft coupled with to a totally enclosed fan cooled induction motor complete with CPVC / SS 304 piping's, sluice valves, non return valves, fittings etc as required. Motor suitable for 415 volts, 3 phase 50Hz. A/c supply with control auto start float switch / level controller for automatic operation - Electrical & mechanical Works , excluding civil works (2 Nos.)						
		SLUDGE FEED PUMP-(2 Nos)						
		Capacity - 50 LPM(minimum)						
		Head - 20 m						
i.		Type of pump - Screw type						
o)		Cost of centrifuge including drive, feeding arrangement, withdrawn arrangement, MOC- All wetted part SS 304, etc complete with PE Dosing System (Each set consist of 1 No. 500 ltr capacity dosing tank with 2 nos positive displacement dosing pump of min. capacity 50 LPH, CPVC / SS 304 pipings, valves, fittings etc as required(One set)						
		Capacity -50 LPM(minimum)						
		Type - Solid bowl						
		Make - Alfa, humboldt ,Penwalt						
p)		RCC 2 No. suitable size treated water tank of minimum 50 cu. M capacity with min.free board 500 mm(1 unit)						
		Treated Water Transfer Pump Sets						
q)		Ultra Filtration System (UF) - 1Sets						
i.		Supplying, installing, testing and commissioning of UF System piping and Valves with all the required accessories & chemical cleaning system, complete in all respects.						
ii.		UF Module (Hollow Fibre -outside in type porocity 0.04- 0.09 micron) including micron cartridge filter in SS 304, Pneumatic Valve, PLC Electrical Panel, flow meter, compressor and all other accessories making the system complete						
		Flow rate : 10.0 cum/hr						
		Inlet TSS :- 20 mg/lit						
		Make : Norit, Toray, Koch, Dow						
		Membrane Type :- Pressure Feed Mambrane having life of atleast 4 years or 10 lac ppm hrs when compared with chlorine tolerance capacity in working hour with resect to PPM of chlorine dosing. Out to in process						
		No. of UF Membrane - As per Manufacturer						

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.

Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
iii.		UF Feed Pump Capacity : 15.0 m3/hr each (1W + 1S) Head : 35 Mts (or as per manufacturer) RPM : 2900 Motor Efficiency Class - IE2						
iv.		Supply, installation, testing & commissioning of UF pre fine filtration. It can be micron filter or Bag filter or as per vendor design. The MOC of housing of filter shall be SS 304						
v.		Supplying, installing, testing, commissioning of centrifugal Vertical UF Backwash pumps with Complete SS - 304 with motor, pressure gauge with isolation cock, Isolation valve, NRV on delivery line. Isolation valve, strainer at suction. The pump shall be suitable for 415±10% volts 3 phase AC supply. Capacity : - 20.0 m3/hr Head : - 35 m (or as per manufacturer) No. of Pumps: 1 No. Note-CIP pumps can be common with item no.c Motor Efficiency Class - IE2						
vi.		Supply, installation & commissioning of HDPE backwash tank of 500 Litre capacity including required level controller						
r)		Providing and fixing vertical in line SS centrifugal pumps(if positive Secution) with CI volute and SS impellar and with stainless steel shaft, mechanical seal and chrome steel shaft sleeve, connected to a TEFC induction motor suitable for 400/440 volts,1500 RPM, 3 phase 50 cycles A.C. supply having IP 55 protection enclosure. complete with base frame, vibration eliminating pads, nuts and bolts, pressure gauge on delivery side etc. with suction strainer (Necessary RCC foundations as per requirement and as per instructions shall be provided by the agency)						
i.		Irrigation Pump in STP Capacity : 200 lpm (Each) Head : 50 m Power : 10.0 HP with 100% standby pumps(1W+1S) 2 Nos.						
ii.		Providing and fixing C.I. "Y" Type suction strainer with stainless steel perforated sheet screen,flangfd ends iner installed outside water tanks. (Make: Leader / Zoloto / Kartar or equivalent) 50/80 mm dia (min.) or required size and required number(1 Set)						

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Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
	iii.	Providing and fixing gun metal or bronze ball valves/butterfly valve/NRV/Rotameter, tested to 15.00 Kg / cm2, screwed end connections complete . (Make: Leader/ Zoloto or equivalent) 80/50 mm NB (min.) or required size and number(1 Set)						
	iv.	Providing and fixing heavy duty floating flange EPDM rubber expansion bellows with unit control (tie rod & gusset plate) as per manufacturers specifications of standard length complete with all accessories and a working pressure not less than 16 Kg./sqcm including rubber gaskets, flanges, nuts, bolts & washers complete as required. 80/50 mm NB (min.) or required size and 2 numbers(1 on suction and 1 on delivery)						
	s)	1# RCC Treated water tank of minimum 50 cu.m capacity with min. free board 500 mm(1 unit)						
	t)	1# RCC UF Permeate tank of minimum 50 cu.m capacity with min. free board 500 mm(1 unit)						
	u)	Providing and fixing Hydropneumatic filter press of 24 plates 1000 x 1000mm size, with suitable sludge pump(screw type) along with piping, fittings valve etc. complete in all respects.						
	i.	Filter press & sludge pump(screw type) with SS Shaft and Rotor - 2 cum/Hr., 40 m Head - Electrical & mechanical Works , excluding civil works(Set-I)						
	v)	Providing and fixing dust and vermine proof cubical type motor control panel center for the various pumps, blower etc. required. It is fabricated from 2mm thick CRCA sheet with stove enamelled finish and comprising of: Panel should have at least 20% spare feeders.						
	i.	One incoming main of 200 A MCCB or of required						
	ii.	MCCB/MPCB, one for each motor						
	iii.	Fully automatic DOL/star delta starters suitable for different motors/pumps/exhaust fans used in the ETP. Upto 7.5 HP DOL may be used and above star/delta starter used with push buttons one for each motor and on/off indicating neon lamps.						
	iv.	Single phasing preventers of appropriate rating for each motor.						
	v.	rotary type selector switch						
	vi.	Panel type ampere meters, one for each motor shall be with rotary selector switch to monitor line currents.						
	vii.	Panel type volt meters, on incoming main with rotary selecting switch to monitor voltage between phase to neutral and phase to phase.						
	viii.	Neon phase indicating lamps and indicating lamp for each motor on incoming mains.						
	ix.	Rotary switch for manual or auto operation for each pump						
	x.	Fully taped separate aluminum bus bar of required capacity for normal and emergency supply.						

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Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
	xi.	The panel shall be pre-wired with coded wiring. All intercnnting wiring from incoming main to switchgear, meters and accessories within the switchboard panel shall have suitable copper ferrules (Complete 1 set)						
	w)	Electrical works(including supply, installation and termination of cables of suitable size as per HP of all pumps with all structural supports, clamps and cable trays as per approved design/specifications, installation will be as per relevant Indian standard and CPWD specification along with control cable of suitable size).(1 lot). Axial exhaust Fan GI Sheet ducting for desire ventilation of Pump Room area as per approved Drawings. Any other electrical and mechanical item required to complete the work.(Set-1)						
	x)	Providing and fixing digital type flow meter and energy meter etc. complete in all respects. (Set-1) & Providing and fixing lab. Equipments including digital type pH meter, COD kit, TDS kit, bicker, conical flask etc. complete in all respects. (Set-1)						
	y)	Rooms for Pumps & control panel (80 sq.m.) (minimum size) - Electrical & mechanical Works , Ventilation fan & ducts with minimum air change 20 CFM and lighting etc.,excluding civil works.(Set-1)						
		Note: The cost of chemical & manpower for trial run for period of two month from the date of handing over obtaining approval from Local Pollution Department including the cost of consumables complete as specification as directed .Obtain required no. of test report of treated/raw sewer during trial run. No additional payment shall be made on this account.						
		Complete STP work as mentioned above						
		SUB TOTAL(Sewage Treatment Plant)-[Total of Sub Head STP(a) to (y)]	SET	1			91,50,100.00	91,50,100.00
14.02		Operation and maintance Cost (STP & ETP)						
	i)	Testing charges of Raw and treated effluent for all the required parameter from approved lab (after defect and liability period)	Set	6.00			6,000.00	36,000.00
	ii)	Providing chemical and consumables for satisfactory operation of STP etc. completed in all respect in all respect excluding cost of electricity and manpower and spare parts during defect liability period i.e. 1 year and also including the cost for providing the on plant training to the respective personnels for operation and maintenance of STP.	Month	12.00			23,000.00	2,76,000.00
								-

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.								
Sl. No.	Item no. (DSR-16)	Description of Item	Unit	Total Quantity	DSR 16 Rate (Rs)	DSR Amount	Market Rate	Market Amount
1	2	3	4	5	6	7	8	9
iii)		Providing (operator & one Helper) i.e. manpower to operate the STP in each shift. In case the additional manpower required for proper operation, the same will be considered as part of this item only.						-
a)		Helper - 3 no./day(i.e one in each shift)	Month	12.00			60,000.00	7,20,000.00
b)		technical operator - 2 no./day	Month	12.00			60,000.00	7,20,000.00
c)		Supervisor (1 No. Per day)	Month	12.00			75,000.00	9,00,000.00
iv)		AMC of all equipments, components and spares of STP after one year defect liability period.The consumables will be reimbursed by owner as per actual cost.	Year	1.00			3,00,000.00	3,00,000.00
		SubTotal(O & M)						121,02,100.00
		Grand total STP (Including O&M)						

ABSTRACT

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P) Plumbing Estimate.

S.No.	DESCRIPTION	DSR Amount (Rs)	Market Amount(Rs)
A	INTERNAL PLUMBING		
1.00	SANITARY FIXTURES	32,26,256.90	66,46,872.80
2.00	SOIL, WASTE AND VENT PIPES	56,92,489.00	42,22,294.36
3.00	WATER SUPPLY	47,43,896.65	37,72,927.82
4.00	SEWERAGE AND DRAINAGE	26,70,592.65	4,76,900.00
5.00	EARTH WORK	3,48,247.00	-
B	EXTERNAL PLUMBING		
7.00	RAIN WATER PIPING	7,40,110.40	16,09,233.38
8.00	BOREWELL	9,27,801.40	5,60,000.00
9.00	RAIN WATER HARVESTING	97,719.40	3,20,000.00
10.00	SOLAR WATER HEATING SYSTEM & RECIRCULATING SYSTEM	1,31,835.80	86,80,758.00
11.00	WATER TREATMENT PLANT		70,51,600.00
12.00	WATER SUPPLY ELECTRICAL PANEL		3,43,737.02
13.00	EFFLUENT TREATMENT PLANT		35,00,000.00
14.00	SEWAGE TREATMENT PLANT(including O&M)		121,02,100.00
	TOTAL	185,78,949.20	492,86,423.38
	DSR BASED ITEM(RS)	185,78,949.20	
	Add for cost index over DSR-2016 based item (27.45%)	50,99,921.56	
	Total	236,78,870.76	
	MARKET BASED ITEM(RS)	492,86,423.38	
	GRAND TOTAL (RS)	729,65,294.00	

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P)Fire Fighting work.								
Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
		Note: Based on the tender drawing the agency has to prepare the internal & external fire fighting shop drawing and obtain the approval of the same before start of work						
1.00		FIRE FIGHTING SYSTEM						-
1.01		Providing, fixing jointing and testing of Heavy (class -C) G.I. pipes as per relevant IS :1239/4736 with special accessories like tees, elbow, gesket, flanges, flanged joints, rubber insertion nuts and bolts including earth work excavation and trenching, wrapping pipekot 4mm thick 500mm width tar based plymaric corrosion protection tape or equivalent suitable to GI/ MS pipe line including applying uniform coat of cold pipekot primer complete 1 m below the ground level, refilling in layers not exceeding 20 cm in depth consolidated each deposited layer by ramming & watering complete in all respect as pe IS : 1022 (Under ground)						-
a)	NS	150 mm dia G.I. Pipe with flange joints (5.4 mm wall thickness)	Metre	780.00		-	2,550.00	19,89,000.00
b)	NS	80 mm dia G.I. Pipe with flange joints	Metre	200.00		-	1,246.00	2,49,200.00
								-
1.02	NS	Heavy class G.I. pipes conforming to IS with accessories like tees, elbows, flanged joints, rubber insertion, nuts, bolts or welded joints including fixing the pipe with suitable flat iron strip clamps/brackets, structural members, dash fastener , cutting hole and chases in walls, floor, R.C.C. slab etc. and making good the same, including painting pipes and fittings with a primer coat of steel primer and two coats of postal red enamel paint etc. complete as required. (All the fitting i.e. tee /elbow, Valve shall be joint the pumps will flanged joints)						-
a	NS	300 mm dia (with Flanged joints)	Metre	20.00		-		-
b	NS	200 mm dia (with Flanged joints)	Metre	50.00		-		-
c)	NS	150 mm dia (with Flanged joints)	Metre	350.00		-	2,329.00	8,15,150.00
d)	NS	100 mm dia (with Flanged joints)	Metre	250.00		-	1,595.00	3,98,750.00
e)	NS	80 mm dia	Metre	150.00		-	1,102.00	1,65,300.00
f)	NS	65 mm dia	Metre	130.00		-	904.00	1,17,520.00
g)	NS	50 mm dia	Metre	115.00		-	676.00	77,740.00
h)	NS	40 mm dia	Metre	200.00		-	541.00	1,08,200.00
i)	NS	32 mm dia	Metre	515.00		-	456.00	2,34,840.00
j)	NS	25 mm dia	Metre	1560.00		-	366.00	5,70,960.00
								-

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
1.03	NS	Providing and fixing Single headed hydrants flanged inlet with 63 mm female instantaneous outlet of gunmetal/SS complete with male blank caps, chains conforming to IS:5290 type A with stainless steel orifice plate (if required) to keep the pressure not more than 3.5 kg/sq.cm at any point.	Each	40.00		-	8,485.00	3,39,400.00
						-		-
1.04	NS	Providing 63mm dia 15 m long reinforced rubber lined hose pipe conforming to IS: 636-1992 Part-II with gunmetal/SS male & female coupling wire wound with pipe as required.	Each	80.00		-	6,191.00	4,95,280.00
						-		-
1.05	NS	Providing and fixing Gunmetal/SS branch pipe with 20mm dia nozzle conforming to IS:903. suitable for installation connections to hose coupling etc. as required.	Each	40.00		-	3,552.00	1,42,080.00
						-		-
1.06		Providing and fixing Four way fire brigade connection housed in steel cabinet of size 900mm x 750mm x 400mm fabricated from 1.5mm thick M.S. sheet having lockable arrangement, openable glazed door with 4mm thick glass, including painting a coat of steel primer and two coats of postal red enamel paint, with necessary supports for the cabinet etc. with 150 mm dia. non return and butterfly valves complete in all respects.				-		-
a)	NS	4 Way - 150mm dia	Each	1.00		-	18,064.00	18,064.00
						-		-
1.07	NS	Providing and fixing Set of "Siamese" quadruplet instantaneous fire brigade connections comprising of two gunmetal instantaneous male inlet coupling 63mm dia with plug and cap, chain bends, tees etc for inlet to the static tank.	Each	1.00		-	14,380.00	14,380.00
						-		-
1.08	NS	Providing & Fixing 150 mm dia, 3 way collecting head complete with 3 nos. 63 mm dia male coupling, NRV and rubber blank cap with chain as per IS 904(suction coupling for firebrigade withdrawal of water from the fire tank)	Each	1.00		-	8,322.00	8,322.00
						-		-
1.09	NS	Providing and fixing glazed door shutter and frame for Fire hose shaft with hold fasts (shutter & frame fabricated from powder coated aluminium section - aluminium work will be paid in civil) 2100 mm high x 1200 mm wide with locking arrangement, 4mm thick glass including all accessories, painting/ powder coating of postal red paint complete as per drawing and as directed. The words " hose cabinet" to be painted on the box complete in all respects.	Each	30.00		-	10,935.00	3,28,050.00
						-		-

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
1.10	NS	Providing and fixing stand post type hose cabinet for external hydrant of size (750 x 600 mm x 300 mm) fabricated from 1.6 mm thick SS sheet having openable glazed door shutter with 4mm thick glass suitable to accommodate hydrants, 2 Nos. canvas hose pipe bearing ISI mark Under IS:639-992 type B (not less then 30 Meter length) and branch pipe including necessary locking arrangements, painting inside and external part shall be natural polished in matt finish including SS 304 angle stand and PCC foundation 1:2:4 complete with locking arrangement and inbuilt key box.	Each	10.00		-	15,223.00	1,52,230.00
						-		-
1.11		Providing and fixing cast iron body IS: 210 FG 200 and double flange gear simple operation type butterfly valve conforming to IS: 13095 with SS304 disc and shaft NITNLE rubber replaceable seat of the following size complete with bolts, nuts, washers and rubber insertions as per specification.				-		-
a)	NS	200 mm dia	Each	24.00		-	9,865.00	2,36,760.00
b)	NS	150 mm dia	Each	6.00		-	5,246.00	31,476.00
c)	NS	100 mm dia	Each	10.00		-	3,773.00	37,730.00
d)	NS	80 mm dia	Each	10.00		-	2,965.00	29,650.00
						-		-
1.12	NS	Supplying, testing, installation & commissioning of pressure switches for pumps including necessary wiring upto the control panel.	Each	20.00		-	7,839.00	1,56,780.00
						-		-
1.13	18.34	Constructing masonry chamber 90x90x100 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement: 4 fine sand) for sluice valve, with C.I. surface box 100mm top diameter, 160mm bottom diameter and 180mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) 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.				-		-
	18.34.1	with F.P.S. bricks	Each	4.00	11,842.75	47,371.00		-
						-		-
1.14		Supplying and Fixing First Aid Hose Reel , wall mounting swinging type complete with drum & bracket of MS construction, spray painted in Post office Red, conforming to IS 884/1995 with upto date amendments, complete with the following as required.				-		-
		36 Meter long 20 mm dia water hose Thermoplastic (Textile reinforced) Type - 2 as per IS : 12585				-		-

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
		20 mm dia gun metal ball valve & nozzle.				-		-
		Drum and brackets for fixing the equipments on wall.				-		-
	NS	Connection from riser with stop valve (gun metal) & M.S. Pipe	Each	30.00		-	17,528.00	5,25,840.00
						-		-
1.15		Providing and fixing C.I. sluice valves (With cap) of approved quality complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) Class II				-		-
	18.31.4.6	300 mm dia	Each	2.00	22,784.75	45,569.50		-
a)	18.31.4.2	200 mm dia	Each	2.00	11,316.05	22,632.10		-
b)	18.31.3.2	150 mm dia	Each	8.00	5,387.20	43,097.60		-
						-		-
1.16	NS	Supply, Installation, Testing and Commissioning of 100 mm dia Bourden type, Stainless Steel dial type Pressure Gauge including brass isolation valve and siphon pipe having calibration of 0 - 16 Kg / cm ² .	Each	40.00		-	1,023.00	40,920.00
1.17	NS	Supplying and Fixing of Fire Man's axe with heavy insulated rubber as per standard conforming to IS 926	Each	30.00		-	1,156.93	34,707.90
						-		-
1.18	NS	Supplying and Fixing vane type waterflow switch with contacts suitable for installation on 50 mm to 150 mm dia pipeline for a service pressure upto 20 Kg/sq.cm.	Each	30.00		-	5,785.00	1,73,550.00
						-		-
1.19	NS	Providing, Fixing, Testing and Commissioning of Sprinkler Installation Control Valve of Cast iron body and brass / bronze working parts comprising of water motor, alarm, bronze seat clapper and clapper arm, hydraulically driven mechanical gong bell to sound continuous alarm when the Sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc. of size 200/150 mm dia, as required.	Each	4.00		-	74,374.00	2,97,496.00
						-		-
1.20		Supplying, Installation, Testing & Commissioning modular construction master control annunciation panel for sprinkler with provision for requirer No. of Zone (30% additional spares),eachsprinkler hydrant will have atleast 4 zone on each floor as approved by engineer.The panel shall have but not limited to the following arrangement.				-		-
a)		Indication of Zone sprinkler				-		-
b)		Indication of zone fault				-		-
c)		Fire/fault hooter				-		-
d)		Alarm cancel for fire/fault				-		-

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
e)		Battery for emergency back up of 4 Hrs.	Set	8.00		-	95,000.00	7,60,000.00
1.21	NS	Providing and fixing SS flexible sprinkler drop unbraided 20 mm NB UL listed having a working pressure of 12 kg/sq.cm complete with GI nipple, sprinkler fixing adaptor and fixing clamps complete as per Manufacturer's catalogue and decorative 65 mm dia CP brass/SS flange for fixing sprinkler below false ceiling						
a)		20mm NBx700 mm long	Each	1200.00		-	750.00	9,00,000.00
b)		20mm NBx1000 mm long	Each	250.00		-	848.00	2,12,000.00
c)		20mm NBx1200 mm long	Each	300.00		-	946.00	2,83,800.00
d)		20mm NBx1500 mm long	Each	200.00		-	1,044.00	2,08,800.00
1.22		Providing and Fixing 15 mm dia gunmetal / brass quartzoid type Sprinkler Head with quartz bulb and set to operate at specified temperature.						
a)	NS	Pendent / Upright type, 68 C, Chrome plated With cp cover	Each	3200.00		-	427.00	13,66,400.00
b)	NS	Side wall extended throw 20 mm dia 68 C, Chrome plated	Each	300.00		-	516.00	1,54,800.00
1.23	NS	Providing and fixing of C.I. 'Y' type strainer flanged with SS 304 perforated screen including nuts, bolts and rubber insertions etc						
a)		200mm dia	Each	2.00		-	32,838.00	65,676.00
b)		150 mm dia	Each	4.00		-	20,500.00	82,000.00
1.24	NS	Providing and fixing of foot valve complete with including M.S. flange nuts, bolts, washers, gaskets insertions etc.						
a)		150 mm dia	Each	4.00		-	12,246.30	48,985.20
b)		200 mm dia	Each	2.00		-	15,000.00	30,000.00
1.25		Fabricating, Supplying, Installation, Testing and Commissioning Air Vessel of continuous welded construction with flanged discharge header on the top of each riser fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve complete with suitable drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes						
a)	NS	1.2 Metre high and 250 mm dia	Each	6.00		-	48,909.00	2,93,454.00

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
1.26	NS	Supply, Installation, Testing and Commissioning External Yard Hydrant Stand Post comprising of GI pipe 80 mm dia (heavy duty C class) from existing ringmain to about 1 meter above ground level and Single Headed Yard Hydrant Valve with 80 mm dia flanged inlet, instantaneous gunmetal coupling of 63 mm dia with cast iron wheel ISI marked, conforming to IS : 5290 (Type A), with ABS cap and chain etc.complete with all accessories as required.	Each	10.00		-	10,091.00	1,00,910.00
1.27	18.48	Providing and placing on terrace polyethylene water storage tank ISI : 12701 MARKED indicating the BIS license No 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.	Ltrs.	20000.00	7.25	1,45,000.00		
1.28	NS	Supply, erection, testing & commissioning of exit glow sign board of size 200mm x 350 mm wall mounting signage consisting of photo luminescent coating, non radioactive on acrylic cover						
a)		Single sided luminescent exit glow sign board	Each	32.00			1,031.00	32,992.00
b)		Double sided luminescent exit glow sign board	Each	16.00			1,500.00	24,000.00
1.29		Providing and fixing fire extinguisher of carbon dioxide type consisting of brand new high pressure steel cylinder bearing IS: 7285 mark and having the approval of controller of explosives Nagpur, wheel type valve bearing IS:3224/15683 mark internal discharge tube, 1 meter long high pressure discharge hose, non conducting horn, suspension bracket, fully charged bearing IS: making fixed to wall as directed.						
a)	NS	4.5kg capacity cylinder	Each	30.00			10,159.00	3,04,770.00
				9.00				
1.30	NS	Providing and fixing 9 liters capacity fire extinguisher water type gas pressure conforming to IS marking, fixed to wall.	Each	30.00			3,958.00	1,18,740.00
1.31		Providing and fixing ABC type fire extinguishers complete in all respects.						
a)	NS	Capacity 6.0 Kg.	Each	30.00			5,000.00	1,50,000.00
1.32	NS	Providing and fixing ABC type automatic modular ceiling mounted type extinguisher with body powder coated 10 lts. Capacity min. 300 mm dia 68 degree centigrade bul temperature complete in all respect of approved make and model	Each	4.00			8,000.00	32,000.00

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
1.33		Supression System				-		-
(i)		S/F 10 LB capacity NOVEC 1230/ DLP Assembly with Automatic valve, push in connector for tube, 5 LB NOVEC 1230/FM 200 (HFC 227 ea) gas, mounting bracket, end of line adopter and low pressure switch for monitoring system activation of automatic linear pneumatic tube detection system complete etc. as reqd as one job make: Fire Trax/Servo System/FireTEC.	JOB	6.00		-	1,25,672.00	7,54,032.00
(ii)		S/F 2.5 LB capacity NOVEC 1230/ DLP Assembly with Automatic valve, push in connector for tube, 2.5 LB NOVEC 1230/FM 200 (HFC 227 ea) gas, mounting bracket, end of line adopter and low pressure switch for monitoring system activation of automatic linear pneumatic tube detection system, complete etc. as reqd as one job make: Fire Trace/Servo System/FireTEC.	JOB	16.00		-	76,142.00	12,18,272.00
(iii)		S/F linear pneumatic heat detection tube and suppression system operated on 92-100 deg, Cent temp. With all necessary fittings and supports, fixing in the existing electrical panel board, complete etc as required at site . Make: FireTraco/Srevo System/Fire System/Fire TEC	MTR	200.00		-	1,682.00	3,36,400.00
(iv)		S/F audio visual alarm system for automatic linear fire trace tube detection system, complete etc as required at site	Each	22.00		-	2,882.00	63,404.00
1.34		Fabricating, Supplying, Installation, Testing and Commissioning Air Vessel of continuous welded construction with flanged discharge header in pump house fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve, complete with drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes				-		-
a)	NS	2 Metre high and 450 mm dia suitable to operate Jockey Pump, Main Fire Pump & Diesel Engine Driven Fire Pump	Each	1.00		-	78,512.00	78,512.00
1.35		Providing and fixing C.I. double flanged horizontal/vertical type check valve NRV including nuts, bolts, rubber insertions as required conforming to IS:5312				-		-
a)	NS	200 mm dia	Each	1.00		-	22,243.48	22,243.48
b)	NS	150 mm dia	Each	5.00		-	13,013.97	65,069.85
c)	NS	80 mm dia	Each	4.00		-	7,597.29	30,389.16
						-		-

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
1.36	NS	Providing and fixing of 150mm dia deluge valve of cast iron body and brass/bronze working parts comprising of water motor, alarm, bronze seat clapper and clapper alarm, pressure gauges, emergency releases, pressure switch cock valve complete with drain valve, ball valve, flanges, gasket etc.	Each	2.00		-	93,447.40	1,86,894.80
						-		-
1.45	NS	Supplying, installing, testing and commissioning of electric driven fire pump suitable for automatic operation consisting of the following (as per CPWD specification Part V-1985 for Fire Fighting and its amendments) (For Hydrant system & Sprinkler system).				-		-
						-		-
a)		Fire pump with stainless steel impeller, CI casing, SS shaft & mechanical seal shall be horizontal split casing centrifugal suction type multistage having following capacity and head so as to ensure a minimum pressure of 3.0 kg per square cm. at the highest and farthest out let at the specified flow complete with necessary strainer / foot valve suction side and pressure gauge on the delivery side including by pass arrangement for periodical testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.				-		-
						-		-
b)		Squirrel cage type TEFC motor suitable for operation on 415V, 10%, 3 phases 50 Hz. system of suitable HP for the above pump with synchronous speed of 1500 RPM and flexible coupling. The pump motor should conform to IS: 325-1978.				-		-
						-		-
c)		Common bed plate fabricated from mild steel channel or cast iron type.				-		-
						-		-
d)		Suitable cement concrete pump foundation & vibration damping arrangement with cushy foot mounting as required.				-		-
						-		-
l)	NS	Capacity 2280 LPM and Head 70 Metres	Each			-	4,06,290.00	-
						-		-
1.46		Supplying, installing, testing and commissioning of diesel engine driven fire pump suitable for automatic operation consisting of the following (as per CPWD specifications PartV 1985.) (For Hydrant system & Sprinkler system).				-		-
						-		-

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
a)		Horizontal centrifugal type multi-stage, fire pump with stainless steel impeller CI casing, SS shaft & mechanical seal complete of following capacity and Head so as to ensure a minimum pressure of 3.0 kg per sq.cm. at the highest & farthest outlet at the specified flow, complete with necessary strainer pressure gauge on the delivery side etc. including by pass arrangement for periodical testing of the working of the pump set as required. The pump shall be provided with mechanical seals.				-		-
b)		Water cooled cold starting type multi cylinder 4 stroke diesel engine, developing suitable BHP at 1500 RPM for the above pump set with automatic starting mechanism, cooling system shall be with radial cool engine, maintenance free batteries, battery charge unit, flexible coupling with the pump, common bed plate for mounting diesel engine fuel day tank fuel piping and pump and vibration damping arrangement by cushy foot mounting as required complete in all respects.				-		-
c)		The engine shall be capable to drive the pump at 150% rated discharge at 65% head and shall be suitable for 10% overload capacity for one hour in any period of 12 hrs. continuous run.				-		-
d)		Common bed plate fabricated from mild steel channel or cast iron type.				-		-
e)		Isolation Valve				-		-
f)		Suitable cement concrete pump foundation & vibration damping arrangement with cushy foot mounting as required.				-		-
l)	NS	Capacity 2280 LPM and Head 70 Metres	Each			-	6,47,524.00	-
1.47		Supplying, installation, testing and periodic commissioning of electric motor driven automatic pressurization pump set consisting of the following (as per specification) (For Hydrant system & Sprinkler system).				-		-
a)		Centrifugal pump of specified capacity capable of building up pressure lost in any leakage in the system against atotal head (mentioned as under) complete with C.I. casing stainless steel impellor ; mechanical seal & S.S. shaft necessary strainer, pressure gauge on delivery side etc. including by-pass arrangement for testing of the working of the pumping set as required .				-		-

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
b)		Squirrel cage A.C. induction motor suitable for operation on 415 V, 10% 3 phase 50 Hz. A.C. supply and of minimum 7.5 HP,1500 RPM, for the above pump with flexible coupling as per specification and conforming to IS: 325/ 1978 and shall be TEFC type only.				-		-
c)		Common bed plate fabricated from mild steel channel or cast iron type.				-		-
d)		Suitable cement concrete pump foundation with vibration damping arrangement with cushy foot or similar mounting as per required.				-		-
i)	NS	180 LPM & Head -70 Metres	Each			-	70,889.00	-
1.37		Supplying, installing, testing and commissioning of electric driven fire pump suitable for automatic operation consisting of the following (as per CPWD specification Part V-1985 for Fire Fighting and its amendments) (For Hydrant system & Sprinkler system).				-		-
a)		Fire pump with stainless steel impeller, CI casing, SS shaft & mechanical seal shall be horizontal split casing centrifugal suction type multistage having following capacity and head so as to ensure a minimum pressure of 3.0 kg per square cm. at the highest and farthest out let at the specified flow complete with necessary strainer / foot valve suction side and pressure gauge on the delivery side including by pass arrangement for periodical testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.				-		-
b)		Squirrel cage type TEFC motor suitable for operation on 415V, 10%, 3 phases 50 Hz. system of suitable HP for the above pump with synchronous speed of 1500 RPM and flexible coupling. The pump motor should conform to IS: 325-1978.				-		-
c)		Common bed plate fabricated from mild steel channel or cast iron type.				-		-
d)		Suitable cement concrete pump foundation & vibration damping arrangement with cushy foot mounting as required.				-		-
	NS	Capacity 2280 LPM and Head 85 Metres	Each	2.00		-	4,06,290.00	8,12,580.00

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
1.38		Supplying, installing, testing and commissioning of diesel engine driven fire pump suitable for automatic operation consisting of the following (as per CPWD specifications PartV 1985.) (For Hydrant system & Sprinkler system).				-		-
						-		-
a)		Horizontal centrifugal type multi-stage, fire pump with stainless steel impeller CI casing, SS shaft & mechanical seal complete of following capacity and Head so as to ensure a minimum pressure of 3.0 kg per sq.cm. at the highest & farthest outlet at the specified flow, complete with necessary strainer pressure gauge on the delivery side etc. including by pass arrangement for periodical testing of the working of the pump set as required. The pump shall be provided with mechanical seals.				-		-
						-		-
b)		Water cooled cold starting type multi cylinder 4 stroke diesel engine, developing suitable BHP at 1500 RPM for the above pump set with automatic starting mechanism, cooling system shall be with radial cool engine, maintenance free batteries, battery charge unit, flexible coupling with the pump, common bed plate for mounting diesel engine fuel day tank fuel piping and pump and vibration damping arrangement by cushy foot mounting as required complete in all respects.				-		-
						-		-
c)		The engine shall be capable to drive the pump at 150% rated discharge at 65% head and shall be suitable for 10% overload capacity for one hour in any period of 12 hrs. continuous run.				-		-
						-		-
d)		Common bed plate fabricated from mild steel channel or cast iron type.				-		-
						-		-
e)		Isolation Valve				-		-
						-		-
f)		Suitable cement concrete pump foundation & vibration damping arrangement with cushy foot mounting as required.				-		-
						-		-
	NS	Capacity 2280 LPM and Head 85 Metres	Each	1.00		-	6,47,524.00	6,47,524.00
						-		-
1.39		Supplying, installation, testing and periodic commissioning of electric motor driven automatic pressurization pump set consisting of the following (as per specification) (For Hydrant system & Sprinkler system).				-		-
						-		-

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
a)		Centrifugal pump of specified capacity capable of building up pressure lost in any leakage in the system against atotal head (mentioned as under) complete with C.I. casing stainless steel impellor ; mechanical seal & S.S. shaft necessary strainer, pressure gauge on delivery side etc. including by-pass arrangement for testing of the working of the pumping set as required .				-		-
b)		Squirrel cage A.C. induction motor suitable for operation on 415 V, 10% 3 phase 50 Hz. A.C. supply and of minimum 7.5 HP,2900 RPM, for the above pump with flexible coupling as per specification and conforming to IS: 325/ 1978 and shall be TEFC type only.				-		-
c)		Common bed plate fabricated from mild steel channel or cast iron type.				-		-
d)		Suitable cement concrete pump foundation with vibration damping arrangement with cushy foot or similar mounting as per required.				-		-
	NS	180 LPM & Head - 85 Metres	Each	2.00		-	70,889.00	1,41,778.00
						-		-
1.40		Supplying, installing, testing and commissioning of electric motor driven type automatic pressurisation, pump set suitable for automatic operation of terrace down comer and consisting of the following (as per CPWD specifications Part V-1985) for fire fighting and its amendmends).				-		-
a		Fire pump with stainless steel impeller CI casing, SS shaft shall be horizontal end suction centrifugally type having a capacity of 900 LPM against a total head of 25m so as to ensure a minimum pressure of 3.0 kg/sqm at the highest and farthest out at the specified flow complete with necessary strainer with foot valve in suction side and pressure gauge on the delivery side including bypass arrangement for periodic testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.(Including taking necessary approval of complete fire fighting scheme from local fire authority before and after start of work) {Agency also has to submit characteristic curve of the pumps, model & other technical data for approval before placing the order}				-		-

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
b		Squirrel cage AC induction motor suitable for operation of 415 V ,+/-10%, 3 phase 50 HZ, AC supply and of minimum 7.5 HP,1500 RPM for the above pump with flexible coupling as per specification and conforming to IS 325-1978 and shall be TEFC type only				-		-
c		Common base plate fabricated from mild steel channel of castiron type				-		-
d		1 No. 3 Phase, fully automatic DOL starter, type - II of 10 HP with thermal overload relay, contactor, Timer, Push Buttons and Auto-manual selector switch etc complete as required.				-		-
e	NS	Suitable cement concrete pump foundation with vibration damping arrangement with cushy foot mounting as required and having provision of suitable weather protection cover.	Each	2.00		-	1,07,076.69	2,14,153.38
1.41		Providing & fixing puddle flanged including 40 cm long GI pipe piece welded / threaded with MS plates 450x450x6mm thick with both end screwed / flanged				-		-
a)	NS	For 80 mm dia pipe	Each	2.00		-	962.00	1,924.00
b)	NS	for 150 mm dia pipe	Each	2.00		-	1,851.00	3,702.00
c)	NS	for 200 mm dia pipe	Each	2.00		-	3,870.00	7,740.00
						-		-
						-		-
2.00		FIRE -FIGHTING PANEL				-		-
2.01		FIRE -FIGHTING PANEL (In Pump Room)				-		-
		Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, powder coated, free standing type, dust, damp and vermin proof, indoor type Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as required.				-		-
		Note :				-		-
		All MCCBs shall have Ics=Icu .				-		-
						-		-
		INCOMER :				-		-
		400 Amp 415 volts, 50 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.				-		-
		R,Y&B phase indicating lamp (LED type) with 6A control SP MCB				-		-
		"ON" ,"OFF" and "TRIP" LED indicating lamp and 6A control SP MCBs				-		-

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				-		-
		1 No. 0 to 500 V Digital voltmeter with selector switch.				-		-
		Digital ammeter with selector switch with one set Suitable C.Ts.				-		-
		BUSBARS :				-		-
		600 Amp TPN busbars of aluminium				-		-
		OUTGOINGS :				-		-
i		2 Sets of following (Terrace pump)				-		-
		32 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. .				-		-
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				-		-
		1 no 3 Phase,DOL starter of 7.5 HP with thermal overload relay with inbuilt single phase preventor , contactor, Push Buttons and Switches etc complete as required.				-		-
		LED indicating Lamps for "ON" , "OFF" & "TRIP".				-		-
		Digital ammeter with selector switch with one set of suitable cast resin C.T' s				-		-
						-		-
ii		2 Sets of following(main electric Driven pump)				-		-
		125 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. .				-		-
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				-		-
		1 NOs. 3 Phase,star-delta starter of 75 HP with thermal overload relay with inbuilt/separate single phase preventer , contactor, Timer, Push Buttons and Auto-manual selector switch etc including its mounting on the wall and control cables for starting of the motor complete as required.				-		-
		LED indicating Lamps for "ON" , "OFF" & "TRIP" .				-		-
		1 no Digital ammeter with selector switch with one set of suitable C.T. s				-		-
						-		-
iii		2 Sets of following(main electric Driven pump)				-		-
		200 Amp. 415 volts, 35 KA (Ics=Icu), TPN MCCB, with Thermal magnetic release having variable current settings. .				-		-

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				-		-
		1 NOs. 3 Phase,star-delta starter of 100 HP with thermal overload relay with inbuilt/separate single phase preventer , contactor, Timer, Push Buttons and Auto-manual selector switch etc including its mounting on the wall and control cables for starting of the motor complete as required.				-		-
		LED indicating Lamps for "ON" , "OFF" & "TRIP" .				-		-
		1 no Digital ammeter with selector switch with one set of suitable C.T. s				-		-
						-		-
iv		2 Sets of following(jockey Pump)				-		-
		63 Amp. 415 volts, 35 KA (lcs=lcu), TPN MCCB, with Thermal magnetic release having variable current settings. .				-		-
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				-		-
		1 NOs. 3 Phase,star-delta starter of 9 HP with thermal overload relay with inbuilt/separate single phase preventer , contactor, Timer, Push Buttons and Auto-manual selector switch etc including its mounting on the wall and control cables for starting of the motor complete as required.				-		-
		LED indicating Lamps for "ON" , "OFF" & "TRIP" .				-		-
		1 no Digital ammeter with selector switch with one set of suitable C.T. s				-		-
						-		-
v		4 Sets of following (Spare)				-		-
		32 Amp. 415 volts, 35 KA (lcs=lcu), TPN MCCB, with Thermal magnetic release having variable current settings. .				-		-
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				-		-
		LED indicating Lamps for "ON" , "OFF" & "TRIP" .				-		-
						-		-
vi		1 Set of following in a separate cubicle (Diesel engine auto starting kit)				-		-
		One no. Diesel engine auto starting kit with all necessary relay, controls, wiring etc to start 45 HP diesel engine when electrical driven fire pump fail to start including one no rectifier circuit, battery charger, batteries, DC Voltmeter, DC Ammeter and its interconnection with control cables etc complete in ready to use condition.				-		-

Item No	Ref. No.	Description Of Item	Unit	TOTAL QTY.	DSR16 Rate (Rs)	DSR 16 Amount	Market Rate(Rs)	Amount Mkt(Rs)
1	2	3	4	5	6	7	8	9
						-		-
iii		8 Sets of following (for Terrace Pump)				-		-
		63 Amp. 415 volts,25 KA, TPN MCCB, with Thermal magnetic release having variable current settings. .				-		-
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				-		-
		Digital ammeter with selector switch with one set of suitable CT,s.				-		-
		1 Set of phase indicating lamp with 2A SP control MCBs				-		-
		LED indicating Lamps for "ON" , "OFF" & "TRIP".				-		-
						-		-
		Fire Fighting Pump Panel Hospital Block in Pump room as above	Set	1.00		-	6,04,497.49	6,04,497.49
		Sub Total(Fire Fighting work)					3,03,670.20	181,47,819.26

Name of Work : Construction of Proposed Super Specialty Block, at Shimla (H.P)Fire Fighting work.			
ABSTRACT OF COST			
S.No	DESCRIPTION OF WORK	DSR AMOUNT(Rs)-2016	MARKET RATE AMOUNT(Rs)
1	FIRE FIGHTING	3,03,670.20	181,47,819.26
	Sub Total(Fire Fighting work)	3,03,670.20	181,47,819.26
	Cost of DSR based works	3,03,670.20	
	Add for cost index over DSR based item(27.45%)	83,357.47	
	Value of market rate based items	181,47,819.26	
	GRAND TOTAL	185,34,846.93	
	Total	185,34,847.00	

BILL OF QUANTITIES OF ELECTRICAL WORKS FOR CONSTRUCTION OF SUPER SPECIALITY BLOCK AT IGMCSHIMLA HIMACHAL PRADESH

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
1.00	SUB HEAD 1: HT SUB STATION						
	HT PANEL						
1.01	Supply, erection, testing and commissioning of 5 panel, 630A , 11 kV, 3 Phase, 50 Hz., metal clad, dead front, 500 MVA (26.3 KA) rupturing capacity Vacuum Circuit Breaker Incoming & Outgoings as per the detailed specifications and drawings including connections etc. Including interlocking as per technical specifications and as required.						
	a) INCOMER:						
	i) 2 No. VCB Panel having following						
	1 No. 630A, 11kV, 3 Phase, 50Hz., metal clad, dead front, 500 MVA rupturing capacity, Fully Draw out type, Vacuum Circuit Breaker (VCB).						
	1 set of 11kV/110V -110 V Potential Transformers with HRC fuses for metering & protection.						
	1 Set of Phase indicating lamps with HRC fuses.						
	1 No. Digital voltmeter.						
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP, SPRING CHARGED, TRIP CIRCUIT HEALTHY.						
	Push button for ON, OFF & TRIP circuit healthy.						
	1 set of 300/5-5A Current Transformer for metering and protection.						
	1 No. digital Ammeter with selector switch to select R, Y or B phase current.						
	1 Set of Microcontroller based numerical relay having 4 element relay (30/C+1E/F). Relay should have display of phase current and trip history.						
	Digital frequency meter, Digital Tri vector meter.						
	1 Set of undervoltage relay and Overvoltage relay.						
	Trip circuit supervision relay, Auxiliary relays with shunt trip coil (WTI & Door open trip).						
	1 No. Master Trip relay.						
	1 No. Digital Power factor meter.						
	8 window annunciator.						
	1 no. Phase reversal Relay.						
	b) BUSBARS:						
	11kV, 500 MVA, 630 Amps Three Phase busbars of copper.						
	c) OUTGOINGS:						
	i) 2 No. VCB each having the following:						
	1 No. 630A, 11kV, 3 Phase, 50Hz., metal clad, dead front, 500 MVA rupturing capacity, Fully Drawout type, Vacuum Circuit Breaker (VCB).						
	1 set of 11kV/110V-110 V Potential Transformers with HRC fuses for metering & protection.						
	1 Set of Phase indicating lamps with HRC fuses.						
	1 No. Digital voltmeter.						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP, SPRING CHARGED, TRIP CIRCUIT HEALTHY.						
	Push button for ON, OFF,TRIP&TRIP circuit healthy.						
	1 No. Digital ammeter with selector switch and one set of C.T 150/5-5 A, For measurement & protection.						
	1 Set of Microcontroller based numerical relay having 4 element relay (30/C+1E/F). Relay should have display of phase current and trip history.						
	Digital frequency meter,Digital Tri vector meter.						
	1 Set of undervoltage relay and Overvoltage relay.						
	Trip circuit supervision relay,Auxiliary relays with shunt trip coil.						
	8 window annunciator.						
	1 No. Master Trip relay.						
	1 No. Digital Power factor meter.						
	d) BUS COUPLER:						
	i) 1 No. VCB having following:						
	1 No. 630 A, 11kV, 3 Phase, 50 Hz, metal clad, dead front, 500 MVA rupturing capacity, Fully Drawout type, Vacuum Circuit Breaker (VCB).						
	1 Set of Phase indicating lamps with HRC fuses.						
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP.						
	Push button for ON and OFF.						
	HT PANEL AS MENTIONED ABOVE	Set	1	2250000			2250000
	TRANSFORMER						
1.02	(a) Supply, installation, testing and commissioning of 2500 KVA, 11kV/0.433 kV, 3 Phase, 4 wire, 50 Hz., ON-AN Transformer, Dyn11 Vector group, copper bound Class A insulation with outdoor duty type, On load tap changer on HV Side range -15%, 0, +5% in the steps of 2.5% per step, type transformer with RTCC+AVR inclusive of all control cable. Cable box connection including cable adapter box at primary and secondary end (LT side) shall be connected through busduct/ cable, complete with all accessories including first filling of oil, double float buchholz relay protection, high winding temperature, oil temperture sensors and gauges etc. as per to IS 1180 ammended upto date, interconnection of control cables and accessories etc complete including Foundation .	Each	2	4715000.000			9430000
	BATTERY CHARGER PANEL						
1.03	Supply, erection, testing and commissioning of battery charger panel with 24 Volts DC continuous out put for control supply of HT panel complete with battery, control cabling etc. as required. Capacity of battery charger panel should be suitable for above mentioned HT Panels.						
	2 numbers battery of minimum 180 AH ampere hour capacity.						
	Boost and Trickle charger suitable for above items.						
	1 No. AC Voltmeter (0-500Volt).						
	1 No. DC Voltmeter.						
	1 No. DC Ammeter.						
	1 set of AC and DC indicating lamps.						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	1 No. DC Battery charging position indicator.						
	DC distribution board suitable for above application to incoming & outgoing MCBs include tripping, closing and indication etc.						
	Control cabling between DC Distribution panel to the HT panel of the Substation with suitable core 1.5 sqmm copper cable.	Each	1	125000			125000
1.04	BUS DUCT						
	Supply, Installation, testing and commissioning of following rating 3 Phase, 4 Wire, sandwich construction Aluminium Bus Duct having 65kA short ckt for one Second with temperature rise of 55Deg. above ambient of 40deg. In extruded aluminium/ sheet steel housing suitable for operation on 415V, 50Hz AC supply with 50% neutral complete with all accessories bends, flange ends with adaptor box, Tinned copper laminated flexibles for all the panels , flexible joints, earth bus (minimum 2 runs of suitable rating aluminum strips), plug in point at required positions, expansion joints, transposition joint, end covers, ceiling/wall/ floor mounted support structure of painted/ powder coated with required hardware for installation, supporting arrangements, etc. Indoor type busduct shall be IP54 & Outdoor Busduct shall be IP65 protected . Outdoor /indoor duty type complete as per technical specifications and as requirement. Note- for outdoor installtion canopy will be mounted on bus duct for protection. Canopy Fabricated out of 1.2mm GI/CRCA powder painted						
	OUTDOOR TYPE BUSDUCT (IP65) with Canaopy Fabricated out of 1.2mm GI / CRCA Powder Painted.						
	A)						
	i) 4000 Amp	Meter	50	54780			2739000
	ii) 3200 Amp	Meter	40	42790			1711600
	B) INDOOR TYPE BUSDUCT (IP54)						
	i) 4000 Amp	Meter	50	49800			2490000
	ii) 3200 Amp	Meter	40	38900			1556000
	ii) 2000 Amp	Meter	40	25700			1028000
	HT CABLE						
1.06	Supply of following sizes of 11 kV grade multicore aluminum conductor XLPE armoured power cable as per IS : 7098.						
	i) 3 Core, 240 sq mm	Mtrs.	500	2568			1284000
1.07	Laying of one number PVC insulated and PVC sheathed/ XLPE power cable of 11 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.						
	i) upto 400 Sq mm	Meter	300	298			89400
1.08	Laying of one number PVC insulated and PVC sheathed/ XLPE power cable of 11 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.						
	i) upto 400 Sq mm	Metre	100	65			6500
1.09	Laying of one number PVC insulated and PVC sheathed/ XLPE power cable of 11 KV grade of following size in the existing masonry open duct/cable tray as required.						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	i) upto 400 Sq mm	Metre	100	56			5600
1.10	Supplying and making end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size 3 Core, XLPE aluminium conductor cable of 11kV grade as required.						
	i) 240 sqmm 3 core (Heat Shrunken Type) Indoor Type	Each	4	6457			25828
	ii) 240 sqmm 3 core (Heat Shrunken Type) Outdoor Type	Each	4	9464			37856
1.11	Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refilling etc as required.						
	i) 300 mm dia	Metre	500	592			296000
	i) 150 mm dia	Metre	500	405			202500
	CABLE ROUTE MARKER						
1.12	Supplying and fixing cable route marker with 10 cm x 10 cm x 5 mm thick G.I. plate with inscription there on, bolted /welded to 35 mm x 35 mm x 6 mm angle iron, 60 cm long and fixing the same in ground as required.	each	20	269			5380
	SAFETY EQUIPMENT						
1.13	i) Providing and fixing HT (11 kV) danger notice plate of 250 x 150 mm made of mild steel, atleast 2 mm thick and vitreous enameled white on both sides and with inscription in signal red colour on front side as required.	Each	1	163			163
	ii) Providing and fixing MV danger notice plate of 200 x 150 mm made of mild steel, atleast 2 mm thick and vitreous enamelled white on both sides and with inscription in signal red colour on front side as required.	Each	10	149			1490
	iii) Supply & erection of the following Safety and testing Equipment including miscellaneous items like Clamps, nuts & Bolts, rawl plugs etc. at suitable places in the Substation building as required.						
	a) GI buckets, 4 nos of 5 Litres Capacity duly painted white inside and red oxide paint out side and with 'FIRE' written in white paint & Filled with Dry sand and mounted on MS angel iron bracket of Size 50 x 50 x 6 mm thick and 1200 mm long including grouting in wall / floor etc as required .	Each	2	1200			2400
	b) Supplying, storing, handling and fixing in position First Aid Medical Box complete as per technical specifications as required.	Each	1	600			600
	c) Shock Treatment Chart duly glazed mounted on Aluminum Frame with Sheet Glass as required.	Each	1	600			600
	d) Supplying and laying of 12 kV grade 1 metre wide anti skid chequered type rubber mat.	Metre	10	2500			25000
	e) Supplying and laying of 1.1 kV grade 1 metre wide anti skid chequered type rubber mat.	Metre	30	1800			54000
	f) Supply rubber hand gloves 11 kV grade as per I.S. Code.	Set	1	400			400
	g) Supplying of digital Earth Tester complete with probes etc as required	Set	1	6000			6000
	h) Supplying of Telescopic folding Aluminium ladder folding double with sitting stand 6 M etc as required.	Each	1	10000			10000

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
1.14	Providing and fixing of M.S Slotted angle iron with fixing materials and painting for cable racks in trenches/ on wall etc. as required.	KG	300	120			36000
1.15	Providing and fixing of M.S Slotted angle 'C' channel/ Ladder type rack/ tray including fixing material grouted in wall or haning with M.S rod hanger from ceiling including 2 coat synthetic enamel painting over 1 coat of red oxide primer etc. as required.	KG	300	150			45000
1.16	Fabrication and Installing following size of preforted M.S Cable tray including Horizontal and vertical bends, reducers, tee, crossmember and other accessories as required and duly Suspended from the ceiling with M.S 12 mm rod suspenders and including painting etc. as required.						
	i) 150 mm width x 50 mm depth x 1.6 mm thickness	Metre	1000	393			393000
	ii) 300 mm width x 50 mm depth x 1.6 mm thickness	Metre	2000	523			1046000
	iii) 450 mm width x 62.5 mm depth x 2.0 mm thickness	Metre	500	782			391000
	iv) 600 mm width x 62.5 mm depth x 2.0 mm thickness	Metre	500	950			475000
1.17	Fabrication and Installing following size of Ladder type M.S Cable tray including Horizontal and vertical bends, reducers, tee, crossmember and other accessories as required and duly Suspended from the ceiling with M.S 12 mm rod suspenders and including painting etc. as required.						
	i) 450 mm width x 62.5 mm depth x 2.0 mm thickness	Metre	500	1000			500000
	ii) 600 mm width x 62.5 mm depth x 2.0 mm thickness	Metre	500	1300			650000
	TOTAL SUB HEAD 1: HT SUB STATION AS MENTIONED ABOVE						26919317
2.00	SUB HEAD 2: MAIN LT PANEL						
2.01	MAIN LT PANEL						
	Supply, installation, testing and commissioning of LT Panel, Type Tested Assembly (TTA), cubicle type, totally enclosed, free standing type, dust ,damp and vermin proof panel , powder coated, made up of CRCA sheet, complete with aluminum busbars, danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, necessary interlocking, and having incoming and outgoing switchgears as mentioned below, all the outgoing feeder of 1600 amp and above will be connected to load thought busduct. Complete as per technical specifications and as required.						
	Note :						
	i All ACBs shall have spare contacts						
	ii All relays to operate at 240Volts, Single phase, 50Hz., AC supply through UPS. UPS of suitable Rating is also in the scope of Supply						
	iii Intelligenet Panel Meter: Flush mounting, 96 x 96 mm size class 1 accuracy and LCD display. Panel meter should be suitable for true RMS reading. Meter should measure line and phase voltage, current of all 3 phases and neutral, HZ, PF, KW, KWH, KVAR, KVARH, KVA, KVAH, Voltage and current including one set of CT and Meter shall have RS 485 port for BMS connectivity or any other port for connection to BMS. Meter should be EMI/ EMC complaint.						
	iv All ACBs shall have 65 KA for 1 second.						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
v	All ACBs should have $I_{cw} = I_{cs} = I_{cu} = 100\%$						
vi	All MCCBs shall have $I_{cs} = I_{cu} = 100\%$						
VII	Automatic Change over of DG on LT Panel at the time of power failure and visa versa.						
a)	INCOMER:						
i)	2 No. ACB Panels each having following:						
	4000 A, 415 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & Earth Fault trip including under voltage release and lockable trip push button. ACB should have $I_{cw} = I_{cs} = I_{cu} = 65\text{KA}$ for 1 sec.						
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.						
	Push button to Close the ACB.						
	R, Y & B Phase indicating lamps (LED type) with 6A control SP MCBs.						
	Intelligent Panel Meter as mentioned above with one set of CTs						
	One set of dual core dual ratio CT of 4000/2000/5/5A for capacitor panel.						
ii)	1 No. ACB Panels each having following:						
	3200 A, 415 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & Earth Fault trip including under voltage release and lockable trip push button. ACB should have $I_{cw} = I_{cs} = I_{cu} = 65\text{ KA}$ for 1 sec.						
	Indicating lamps (LED type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.						
	Push button to close the ACB.						
b)	BUSBARS:						
	4000 Amps TPN busbars of aluminium with temperture rise of 40°C over and above Ambient temperture of 45°C Degree Celsius.						
c)	BUS COUPLER:						
i)	1 No. ACB Panels each having following:						
	4000 A, 415 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & Earth Fault trip including and lockable trip push button. The ACB should have $I_{cw} = I_{cs} = I_{cu} = 65\text{ KA}$ for 1 sec.						
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.						
	Push button to CLOSE the ACB.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
d)	OUTGOING:						
i)	2 Nos. ACB Panels each having following:						
	2000 A, 415 Volts, Fully Motorised, Fully Drawout type (EDO), 65 KA, Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous, Earth fault trip and lockable trip push button.						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.						
	Push button to CLOSE the ACB.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
ii)	4 Nos. ACB Panels each having following:						
	1250 A, 415 Volts, Fully Motorised, Fully Drawout type (EDO), 65 KA, Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous , Earth fault trip and lockable trip push button.						
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.						
	Push button to CLOSE the ACB.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
iii)	6 Nos. ACB Panels each having following:						
	800 A, 415 Volts, Fully Motorised, Fully Drawout type (EDO), 65 KA, Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous , Earth fault trip and lockable trip push button.						
	Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.						
	Push button to CLOSE the ACB.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
iv)	4 Nos. MCCB feeder as per following details/ specifications:						
	630 Amp, 415 volts, 65 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.						
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
v)	5 Nos. MCCB feeder as per following details/ specifications:						
	400 Amp, 415 volts, 65 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.						
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
vi)	10 Nos. MCCB feeder as per following details/ specifications:						
	250 Amp, 415 volts, 65KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
	vii) 6 Nos. MCCB feeder as per following details/ specifications:						
	160 Amp, 415 volts, 65KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.						
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
	vii) 5 Nos. MCCB feeder as per following details/ specifications:						
	100 Amp, 415 volts, 65 KA, Four Pole, Microprocessor release based MCCB with variable current settings and having O/L, S/C & inbuilt E/F protection.						
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
	Main LT Panel as mentioned above.	Set	1	115,07,300.00			11507300
2.03	CAPACITOR PANEL (1000 KVAR at 415V)						
	Supply, installation, testing and commissioning of LV cubicle type totally enclosed free standing type, powder coated, dust, damp and vermin proof Capacitor Panel complete with busbars, MV danger notice plate, ammeter, ammeter selector switch, indicating lamps, CTs, heavy duty, MPP resin filled, type Capacitors suitable for non linear loads upto 15% with Copper wound 14% D-tunned filters with linearity should not be less than 143%, total operating losses of capacitor shall not more than 0.5 W/ KVAR. Contactors suitable for capacitor switching or Capacitor duty switching contactor with current limiting contactor circuit to suppress switching inrush current interconnections with suitable capacity aluminium leads/ solid aluminium strips, rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as per technical Specifications as required.						
	a) INCOMER:						
	2000 A, 415 Volts, Fully Motorised, Fully Drawout type (EDO), 50 KA, TP, Air Circuit Breaker with microprocessor based overload, short circuit & Instantaneous Earth fault trip including lockable trip push button.						
	Indicating lamps with 6A protection MCBs to indicate OPEN, CLOSE, TRIP.						
	R, Y & B Phase indicating lamps (LED type) with 6A control SP MCBs.						
	Day & Night mode selector Switch.						
	14 steps Intelligent microprocessor based Automatic Power factor Correction relay having measurement sensitivity of 1 % or better.						
	Extension of incoming busbars for connection of multicore armoured aluminium cables.						
	ON/ OFF delay timers for switching capacitor circuit.						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	b) METERING: 1 set of Digital Amp. Meter, Digital Power factor meter and Digital voltmeter.						
	c) BUSBARS: 2000 Amps TP busbars of aluminum with temperture rise of 40 degree celsius over and above Ambient temperture of 45 degree celsius.						
	d) OUTGOINGS:						
	i) 7 Nos.100KVAR at 415V Delta connected step as per following details/ specification:						
	200 Amps, 415 volts, 50 KA TP MCCB with Thermal Magnetic release having variable current settings.						
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	415 volts, TP Capacitor duty Contactor Suitable for capacitive switching including current limiting contactor circuit to supress switching inrush current and suitable for 100KVAR step.						
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.						
	100 KVAR heavy duty MPP type resin filled capacitors suitable for non linear loads upto 15%, & total operating losses not more than 0.5 W per KVAR.						
	415Volts, 14% copper wound D-tuned reactor suitable for 50KVAR step .This 50KVAR further connect parallel (2x50KVAR) to make physicaly 100KVAR steps for effective heat dissipation.						
	ii) 6 Nos. 50Kvar at 415V Delta connected step as per following details/ specification:						
	100 Amps, 415 volts, and having O/L, S/C & inbuilt E/F protection. TP MCCB with Thermal Magnetic release having variable current settings.						
	Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	415 volts, TP Capacitor duty Contactor Suitable for capacitive switching including current limiting contactor circuit to supress switching inrush current and suitable for50KVAR step.						
	Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.						
	50 KVAR heavy duty MPP type resin filled capacitors suitable for non linear loads upto 15% & total operating losses not more than 0.5 W per KVAR.						
	415Volts, 14% copper wound D-tuned reactor suitable for 50KVAR step.						
	CAPACITOR PANEL AS MENTIONED ABOVE	Set	2	2400000			4800000
	TOTAL SUB HEAD 2: MAIN LT PANEL AS MENTIONED ABOVE						16307300
3.00	SUBHEAD 3: DG SET & ACCESSORIES						
3.01	SOUND PROOF DG SETS OF 1000 KVA.						
	DG SET OF 1000 KVA						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	Supply, installation, testing and commissioning of sound proof (silent type) Diesel Generating set having 1000 KVA Prime Power Ratings , 415 volt at 1500 RPM, 0.8 power factor suitable for 50 Hz, 3 phase system , suitable bhp. Water cooled Radiator type diesel engine- alternator set mounted on common base frame, return fuel cooler, battery & battery charger, Anti Vibration mounting pads, Engine alternator safeties, electronic governor including all accessories, their wiring and control cable between DG set and panel etc. is also in the scope of supply, including its connections etc. complete as per technical specification. DG set should be PLC/PC compatible. This includes the following:						
	- Supplying and fixing of suitable sizes Heavy class MS pipe for DG exhaust complete with bends, elbow, flanges etc including silencer and catalytic convertor exhaust pipe chimney as per CPCB norms for exhaust of DG sets.						
	- Supply and fixing of 50mm thick compressed mineral wool insulation (Rock wool) for D.G. exhaust pipe with 24 gauge aluminium sheet cladding etc. as required for the under mentioned dia pipe.						
	- Supply, installation, testing and commissioning of suitable size fuel pipe for connecting diesel engine to individual day service tank including supply and fixing of required valves & filters etc. as required.						
	- Fabrication of supports for exhaust pipe, fuel pipe or for any other purpose out of suitable M.S. structural steel including supplying and applying of enamel paint of approved shade after one coat of steel primer of reputed company.						
	- Supplying and fixing of suitable capacity cable adapter box for alternator.						
	- Providing and fixing oil tank of 990 litres capacity complete with suitable M.S. fabricated MS stand oil level indicator gauge tank and stand duly painted, complete with float switches etc. as required.						
	- Factory assembled Sound proof Canopy as per pollution control board requirement to achieve noise level desired during night condition, with base frame, doors, inspection window, fresh air supply fans etc						
	- Any other item required for completion of system above (D.G. set).						
	DG Set (1000 KVA) AS MENTIONED ABOVE	Set	2	11917700			23835400
3.02	SYNCHRONISING-CUM-AMF PANEL FOR 2 DG						
	Supply, installation, testing and commissioning of Synchronising Panel, M.V. cubicle type, totally enclosed, free standing type, powder coated , dust, damp and vermin proof indoor type Panel made up of CRCA sheet, complete with aluminium busbars, M.V. danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, and having incoming and outgoing switchgears as mentioned below and complete as required.						
	Note :						
	1. All ACBs shall have Spare contacts						
	2. All relays to operate at 240Volts, Single phase, 50Hz., AC supply through UPS						
	3. Panel shall be suitable for manual synchronising & auto synchronising and automatic operation (AMF) for 2 nos. DG Sets and shall be complete with 1 no. operator control & software with PC						
A.	INCOMER :						
i)	2 Nos. ACB as per following details/ specification:						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
-	1600 A, 415/500V, Fully Drawout type (EDO) (Breaking Capacity=50kA), three Pole & Neutral contractor with suitable rating contactor Air Circuit Breaker with microprocessor based overload, short circuit & earth fault release.						
-	Indicating lamps with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB						
-	Push button for CLOSE and TRIP with lock & key arrangement						
-	R, Y & B Phase indicating lamps (LED type) with 6A control SP MCBs						
-	Digital multi function meter with one set of suitable CTs, CT shorting links, R/Y/B LED indicating lamps and 6A control SP MCBs						
ii)	BUSBARS :						
-	1600 Amps FP busbars of aluminum with temperture rise of 40 Degree Celsius over and above Ambient temperture of 45 Degree Celsius.						
B.	OUTGOING :						
i)	1 Nos .ACB Panel consisting of the following						
-	3200A, 415/500V, Fully Drawout type (EDO) (Breaking Capacity=50kA), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit & earth fault release						
-	Indicating lamps with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB						
-	Push button for CLOSE and TRIP with lock & key arrangement						
-	R, Y & B Phase indicating lamps (LED type) with 6A control SP MCBs						
-	Digital multi function meter with one set of suitable CTs, CT shorting links, R/Y/B LED indicating lamps and 6A control SP MCBs						
C.	SYNCHRONISING COMPONENTS :						
	Metering & Indication :						
-	Power and Energy Monitor						
-	Set running indicating lights : 230 volts AC-22mm dia						
-	Emergency stop push button 230 volts AC-22 mm dia						
-	Governor/AVR raise/lower joy stick						
-	12 window annunciation with hooter, test accept & reset push button						
-	Motorised potential AVR						
-	Time Totalizer						
D.	Manual Synchronising :						
-	144 mm sq. Double voltmeter(AC/DC)						
-	144 mm sq. Double frequency meter						
-	144 mm.sq. synchroscope						
-	Check Synchronizing relay						
-	Synchronizing switch						
-	Selector swtich						
-	Dark and Bright lamps						
-	Breaker Control Switch						
-	Mode selector switch (Manual/Auto/stand alone)						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	- Engine Cranking Relay.						
	- Main supply voltage monitor, alternator voltmeter monitor and Engine Starting Relays						
	- Auxillary relays, timer, push button and control fuses.						
	- Timer for AMF Circuit (2 sets)						
	- DG Start/stop push button						
	- Auxilliary relays for overspeed, low lub oil pressure (LLOP) & high water temperature						
	- 8 channel temperature controller for winding/bearing protection						
	- Pulsating cable required to connect field RTD's/PTC's to temperature scanners.						
E.	Auto Synchronizing with PLC control						
	- Voltage monitors for DG supply						
	- Voltage monitors for main supply						
	- Line synchronising module						
	- Windows based operator interface graphics software						
	- CPU (Allen Bradley/Siemens/ABB/Schnieder) with desk.						
	- EPROM (EP)						
	- On line synchronizing and Load sharing modules						
	- PLC Rack etc. & any other item required for proper functioning of the system.						
	- Digital I / O modules as required with sufficient spare for future provision						
	- Analog I / O modules as required with sufficient spare for future provision						
	- PL to PLC communication card						
	- PL to PLC communication cable						
	- Power supply module						
	- Auto load sharing and management relay						
	- 1kVA, Single phase input and single phase output, 240volts, 50 Hz., AC, Online UPS with inbuilt 30 minutes battery backup in form of sealed maintenance free batteries with power wiring to the control bus for power supply to relays. (To be installed inside the panel)						
	- PC with P-IV intel processor, 80GB hard disk, 1GB RAM, 15" TFT colour monitor, PCI-VGA card 2MB, DVD drive (reader & writer)						
	- Auxilliary relays for output command						
	- Set of Software for PLC in CD						
	- 1 Set mimic (SEM)						
	- Set of control MCBs						
F.	DG PROTECTION AND AMF COMPONENTS:						
	- Reverse power and Reactive power relay						
	- Over Voltage relay						
	- Under Voltage relay						
	- Over frequency relay						
	- Trip circuit supervision relay						
	- Master lockout relay						
	- Master trip/supervisory relay						
	- Battery charger (with trickle and boost charging).						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	- DC voltmeter and ammeter.						
	- DC ammeter.						
	- 8 window Alarm annunciator with separate hooter, accept, reset and rest push button.						
	- Hooter.						
	- Engine Cranking Relay.						
	- Main supply voltage monitor, alternator voltmeter monitor and Engine Starting Relays.						
	- Auxillary relays, timer, push button and control fuses.						
	- Phase sequence relay						
G.	ENCLOSURE :						
	- Fabrication, PVC Sleeving, Control/Power Wiring and necessary hardware for complete synchronisation and load sharing						
	SYNCHRONISING-CUM-AMF PANEL FOR 2 DG AS MENTIONED ABOVE	Set	1	2028500			2028500
	TOTAL SUBHEAD 3: DG SETS AS MENTIONED ABOVE						25863900
	SUBHEAD 4: RISING MAINS						
4.00	RISING MAINS						
4.01	Supply, installation, testing and commissioning of plug in type , indoor sandwich type with high conductivity Aluminium Conductor , 415 V,3 phase, 4 wire, vertical Aluminium Rising main Class B or better in following sizes including bends, flexible, provision of the tap off's as per requirement , Adoptor boxes for cable connection if required are inclusive, 2 nos of aluminium earthing strips 50 X 6mm through out the length of the rising mains, end cover, including all types of support and necessary hardware for installation of the rising main etc. complete as per specifications and as required. (Exact lengths to be measured at site).						
	i) 250 A , 415 volts	Metre	95	10000			950000
	ii) 630 A, 415 volts	Metre	30	11200			336000
	ii) 800 A, 415 volts	Metre	95	13600			1292000
4.02	Supply, fixing, testing and commissioning of Direct End Feed Unit of following ratings, wall mounted, dust, damp and vermin proof complete with M.V. danger notice plate, interconnections with suitable capacity aluminium strips / bars, connection of incoming cables with thimbles, powder coat painted and having following incoming switchgears for rising main complete as required.						
	i) 1 No. MCCB Panels each having following						
	1 no. 250 Amps, 415 volts, four pole, Moulded Case Circuit Breaker with microprocessor based release with variable current settings and having O/L, S/C & inbuilt E/F protection . Separate fault indication for O/L, S/C, & E/F to be provided on Panel Door. Indicating lamps with 6 A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB. Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V digital voltmeter with selector switch. 1 No. 0 to 250 Amp digital ammeter with selector switch with 250/5A C.T.'s.	Set	3	63790			191370

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	i) 1 No. MCCB Panels each having following						
	1 no. 800 Amps, 415 volts, four pole, Moulded Case Circuit Breaker with microprocessor based release with variable current settings and having O/L, S/C & inbuilt E/F protection. Separate fault indication for O/L, S/C, & E/F to be provided on Panel Door. Indicating lamps with 6 A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB. Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V digital voltmeter with selector switch. 1 No. 0 to 800 Amp digital ammeter with selector switch with 800/5A C.T.'s.	Set	3	123933			371799
	i) 1 No. MCCB Panels each having following						
	1 no. 630 Amps, 415 volts, four pole, Moulded Case Circuit Breaker with microprocessor based release with variable current settings and having O/L, S/C & inbuilt E/F protection. Separate fault indication for O/L, S/C, & E/F to be provided on Panel Door. Indicating lamps with 6 A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB. Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V digital voltmeter with selector switch. 1 No. 0 to 800 Amp digital ammeter with selector switch with 630/5A C.T.'s.	Set	1	85900			85900
4.03	Supply, fixing, testing and commissioning of distribution tap off box of following Capacity on the existing rising mains complete with Four Pole, Moulded Case Circuit Breaker, interconnection, earthing etc. complete as required.						
	i) 100 Amps with MCCB 50 KA	Nos	23	11765			270595
	ii) 125 Amps with MCCB 50 KA	Nos	10	28455			284550
	iii) 200 Amps with MCCB 50 KA	Nos	9	40858			367722
	iv) 250 Amps with MCCB 50 KA	Nos	12	49508			594096
	v) 320 Amps with MCCB 50 KA	Nos	3	60262			180786
	vi) 400 Amps with MCCB 50 KA	Nos	2	60262			120524
	TOTAL SUBHEAD 4: RISING MAINS AS MENTIONED ABOVE						5045342
	SUB HEAD 5: MV PANELS						
5.00	MV PANELS						
	Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, wall mounted/Free standing type, powder coated, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as per technical specification and as required.						
	NOTE						
	i All MCCBs shall have Ics=Icu.						
	ii MCB Should be connected through terminal Strip of suitable rating						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
5.01	MV Panel Emergency (SEC-1(G,1,2,3,4,5&6), Sec2(G,1,2,3,4,5&6) & Sec3(L1 , L2 ,G,1,2,3,4,5&6))						
	a) INCOMER:						
	i) 1 No. MCCB Panels each having following						
	100 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.						
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).						
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
	1 No. 0 to 500 V Digital voltmeter with selector switch.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
	b) BUSBARS:						
	300 Amp TPN Aluminium busbars						
	c) OUTGOING:						
	i) 6 no. 40 Amps, 415 volts, 9 KA, Four Pole Miniature Circuit Breaker.						
	MV Panel Emergency (SEC-1(G,1,2,3,4,5&6), Sec2(G,1,2,3,4,5&6) & Sec3(L1 , L2 ,G,1,2,3,4,5&6)as mentioned above	Set	23	94050			2163150
5.02	MV PANEL NORMAL ((Section -1 (Ground , First , Second, Third , Fourth, Fifth & Sixth Floor) Section - 2 (Ground , Second, Third , Fourth, Fifth Floor))						
	a) INCOMER:						
	i) 1 No. MCCB Panels each having following						
	250 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.						
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).						
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
	1 No. 0 to 500 V Digital voltmeter with selector switch.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
	b) BUSBARS:						
	500 Amp TPN Aluminium busbars						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	c) OUTGOING:						
	i) 8 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.						
	MV PANEL NORMAL ((Section -1 (Ground , First , Second, Third , Fourth, Fifth & Sixth Floor) Section -2 (Ground , Second, Third , Fourth, Fifth Floor))as mentioned above	Set	12	126400			1516800
5.03	MV PANEL NORMAL (SECTION -1 & Section-2 First Floor)						
	a) INCOMER:						
	i) 1 No. MCCB Panels each having following						
	400 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.						
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).						
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
	1 No. 0 to 500 V Digital voltmeter with selector switch.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
	b) BUSBARS:						
	500 Amp TPN Aluminium busbars						
	c) OUTGOING:						
	i) 10 no. 63 Amps, 415 volts, 9 KA, Four Pole Miniature Circuit Breaker.						
	MV PANEL NORMAL (SECTION -1 & Section-2 First Floor)as mentioned above	Set	2	148500			297000
5.04	MV PANEL NORMAL ((Section -2 (Sixth Floor) Section -3 (-2 & -1, Ground , Second, Third , Fourth, Fifth & Sixth Floor))as mentioned above						
	a) INCOMER:						
	i) 1 Nos. MCCB as per following details/ specifications:						
	200 Amp 415 volts, ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.						
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.						
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
	1 No. 0 to 500 V Digital voltmeter with selector switch.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	b) BUSBARS: 300 Amp TPN Aluminium busbars						
	c) OUTGOING:						
	i) 6 no. 63 Amps, 415 volts, 9 KA, Four Pole Miniature Circuit Breaker.						
	MV Panel as mentioned above	Set	9	97500			877500
5.06	LIFT Panel (Location - Electrical Room SECTION -1,2&3 -Ground Floor)						
	a) INCOMER:						
	i) 1 Nos. MCCB as per following details/ specifications:						
	100 Amp 415 volts, ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.						
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.						
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
	1 No. 0 to 500 V Digital voltmeter with selector switch.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
	b) BUSBARS: 300 Amp TPN Aluminium busbars						
	c) OUTGOING:						
	i) 1 Nos. MCCB as per following details/ specifications:						
	63 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release.						
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	ON, OFF, TRIP indication (LED Type).						
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.						
	ii) 6 no. 63 Amps, 415 volts, 9 KA, Four Pole Miniature Circuit Breaker.						
	Lift Panel as mentioned above	Set	3	85300			255900
5.07	Main Computer Panel Section 3 (Lower Floor)						
	a) INCOMER:						
	i) 1 Nos. MCCB as per following details/ specifications:						
	250 Amp 415 volts, ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.						
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
	1 No. 0 to 500 V Digital voltmeter with selector switch.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
	b) BUSBARS:						
	400 Amp TPN Aluminium busbars						
	c) OUTGOING:						
	i) 3 Nos. MCCB as per following details/ specifications:						
	100 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release.						
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	ON, OFF, TRIP indication (LED Type).						
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.						
	ii) 8 Nos. MCCB as per following details/ specifications:						
	40 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release.						
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	ON, OFF, TRIP indication (LED Type).						
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.						
	ii) 4 no. 32 Amps, 250 volts, 9 KA, Double Pole Miniature Circuit Breaker.						
	Computer Panel Section -3 (Ground Floor)as mentioned above	Set	1	246200			246200
5.09	Computer Panel Section -1 &2 (Ground Floor)						
	a) INCOMER:						
	i) 1 Nos. MCCB as per following details/ specifications:						
	100 Amp 415 volts, ,35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.						
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.						
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
	1 No. 0 to 500 V Digital voltmeter with selector switch.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	b) BUSBARS: 400 Amp TPN Aluminium busbars						
	c) OUTGOING:						
	ii) 8 Nos. MCCB as per following details/ specifications: 40 Amp 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection release. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. ON, OFF, TRIP indication (LED Type). Digital Ampere Metre of suitable range with suitable set of CT's and ASS.						
	ii) 4 no. 32 Amps, 250 volts, 9 KA, Double Pole Miniature Circuit Breaker.						
	Computer Panel Section -1,2,& 3 (Ground Floor) as mentioned above	Set	3	158300			474900
5.10	Sub Computer Panel Section -1 (First ,Second ,Third, Fourth, Fifth, Sixth Floor) Section -2 (First ,Second ,Third, Fourth, Fifth, Sixth Floor)& Section-3 (-1 , First ,Second ,Third, Fourth, Fifth, Sixth Floor),						
	a) INCOMER:						
	i) 1 Nos. MCCB as per following details/ specifications: 40 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module. R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type). Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers. 1 No. 0 to 500 V Digital voltmeter with selector switch. Digital ammeter with selector switch with one set Suitable C.Ts.						
	b) BUSBARS: 300 Amp TPN Aluminium busbars						
	c) OUTGOING:						
	ii) 4 no. 32 Amps, 250 volts, 9 KA, Double Pole Miniature Circuit Breaker.						
	Sub Computer Panel Section -1 & Section -2 (First ,Second & Third Floor), as mentioned above	Set	19	45100			856900
5.11	Inverter Panel						
	a) INCOMER:						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	i) 1 Nos. MCCB as per following details/ specifications:						
	63 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.						
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).						
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
	1 No. 0 to 500 V Digital voltmeter with selector switch.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
	b) BUSBARS:						
	300 Amp TPN Aluminium busbars						
	c) OUTGOING:						
	ii) 10 no. 32 Amps, 250 volts, 9 KA, Double Pole Miniature Circuit Breaker.						
	Inverter Panel as mentioned above	Set	1	54000			54000
5.12	A UPS INPUT PANEL (OTs-80 KVA)						
	a) INCOMER:						
	i) 1 No. MCCB Panels each having following						
	500 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.						
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).						
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
	1 No. 0 to 500 V Digital voltmeter with selector switch.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
	b) BUSBARS:						
	600 Amp TPN Aluminium busbars						
	c) OUTGOING:						
	i) 1 Nos. MCCB as per following details/ specifications:						
	500 Amp 415 volts, 35 KA TP+NL MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.						
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	ON, OFF, TRIP indication (LED Type).						
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.						

S.No.		Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	ii)	2 Nos. MCCB as per following details/ specifications:						
		250 Amp 415 volts, 35 KA TP+NL MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.						
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
		ON, OFF, TRIP indication (LED Type).						
		Digital Ampere Metre of suitable range with suitable set of CT's and ASS.						
		UPS INPUT PANEL as mentioned above	Set	1	336600			336600
5.13	B	UPS OUTGOING Panel (OTs-80 KVA)						
	a)	INCOMER:						
	i)	2 No. MCCB Panels each having following						
		250 Amp 415 volts, 35 KA TP+NL MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.						
		R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).						
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
		1 No. 0 to 500 V Digital voltmeter with selector switch.						
		Digital ammeter with selector switch with one set Suitable C.Ts.						
	b)	BUSBARS:						
		400 Amp TPN Aluminium busbars						
	c)	OUTGOING:						
	i)	1 Nos. MCCB as per following details/ specifications:						
		500 Amp 415 volts, 35 KA TP+NL MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.						
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
		ON, OFF, TRIP indication (LED Type).						
		Digital Ampere Metre of suitable range with suitable set of CT's and ASS.						
		UPS OUTGOING Panel as mentioned above	Set	1	264700			264700
5.14		ICU Panel (80 KVA)						
	a)	INCOMER:						
	i)	2 No. MCCB Panels each having following						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	500 Amp 415 volts, 35 KA, Motorised, FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.						
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).						
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
	1 No. 0 to 500 V Digital voltmeter with selector switch.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
	b) BUSBARS:						
	400 Amp TPN Aluminium busbars						
	c) OUTGOING:						
	i) 16 no. 63 Amps, 415 volts, 9 KA, Four Pole, Miniature Circuit Breaker.						
	ICU Panel as mentioned above	Set	1			265600	265600
5.15	Equipment Panel						
	a) INCOMER:						
	i) 1 Nos. MCCB as per following details/ specifications:						
	800 Amp 415 volts, 35 KA FP MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.						
	R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication (LED type).						
	Separate fault indication for O/L, S/C, & E/F to be provided on Panel Door.						
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
	1 No. 0 to 500 V Digital voltmeter with selector switch.						
	Digital ammeter with selector switch with one set Suitable C.Ts.						
	b) BUSBARS:						
	800 Amp TPN Aluminium busbars						
	c) OUTGOING:						
	i) 3 Nos. MCCB as per following details/ specifications:						
	400 Amp 415 volts, 35 KA TP+NL MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.						
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	ON, OFF, TRIP indication (LED Type).						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	Separate fault indication for O/L, S/C, & E/F to be provided on Panel Door.						
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.						
ii)	3 Nos. MCCB as per following details/ specifications:						
	250 Amp 415 volts, 35 KA TP+NL MCCB with microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection release.						
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	ON, OFF, TRIP indication (LED Type).						
	Separate fault indication for O/L, S/C, & E/F to be provided on Panel Door.						
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.						
iii)	2 Nos. MCCB as per following details/ specifications:						
	160 Amp 415 volts, 35 KA TP+NL MCCB with thermal magnetic release having variable current settings of O/L, S/C protection and E/ F Module.						
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.						
	ON, OFF, TRIP indication (LED Type).						
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.						
	Equipment Panel as mentioned above	Set	1	703500		1	703500
	TOTAL SUB HEAD 5: MV PANEL AS MENTIONED ABOVE						8312750
	SUB HEAD 6: MCB DISTRIBUTION BOARDS.						
6.00	MCB DISTRIBUTION BOARD						
6.01	Supplying & fixing following way, three pole and neutral sheet steel, MCB distribution board, 415 volts, on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder coated including earthing connection bolt etc. as per technical specifications and as required.(but without MCB & RCCB).						
i	4 way (8+12), Double door	Each	48	2229			106992
ii	6 way (8+18) Double door	Each	20	2715			54300
iii	8 way (8+24), Double door	Each	86	3222			277092
6.02	Supplying & fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. Before procurement of DB the contractor has to take approval of DB schedule/ drawing of each DB from the Electrical Engineer, HSCC, as per technical specifications and as required.(but without MCB & RCCB),						
i	8 way Double door	Each	30	1167			35010

S.No.		Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	ii	12 way Double door	Each	15	1380			20700
6.03		Supplying & fixing 6 Amps to 32 Amps rating, 240 volts, 'B' series, miniature circuit breaker suitable for lighting & other loads of following poles in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications & as required.						
	i	Single pole	Each	3420	159			543780
	ii	Triple pole & neutral	Each	10	817			8170
6.04		Supplying & fixing following rating, four pole, 415 volts, Miniature Circuit Breaker (MCB), in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.						
	i	25 Amps	Each	48	995			47760
	ii	32 Amps	Each	5	995			4975
	iii	40 Amps	Each	10	1400			14000
	iv	63 Amps	Each	86	1400			120400
6.05		Supplying & fixing following rating, four pole, 415 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.						
	i	25 Amps	Each	48	2067			99216
	ii	32 Amps	Each	5	2067			10335
	iii	40 Amps	Each	10	2094			20940
	iv	63 Amps	Each	86	2402			206572
6.06		Supplying and fixing following rating, double pole, 240 volts, MCB (B/C/D/ Curve) in the existing MCB DB complete with connections, testing and commissioning etc. as required.						
	i	32 amps	Each	30	456			13680
	ii	40 amp	Each	15	729			10935
6.07		Supplying & fixing following rating, Double pole, 240 volts, Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.						
	i	32 amps	Each	30	1570			47100
	ii	40 amp	Each	15	1792			26880
6.08		Supplying and fixing Single pole Blanking plate in the existing MCB DB complete as required.	Each	200	6			1200
		TOTAL SUB HEAD 6: MCB DISTRIBUTION BOARDS AS MENTIONED ABOVE						1670037
7.00		SUBHEAD 7: UPS SYSTEM						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
7.01	UPS 80 KVA. (ICU& PRE, POST OT)						
	Supply, Installation, Testing and Commissioning of micro processor based 2 x 80 KVA at 0.8 power factor at output. with over all efficiency of minimum 92% at full load, True Online Double Conversion UPS using PWM IGBT technology. 3 Phase input 415 V +10% -15% and input frequency 50 Hertz plus minus 5%, 3 phase input and 3 phase output fixed setting at 380, 400 and 415V. UPS operating in parallel redundant load sharing mode (N+1) configuration and each comprising of the following:						
	(a) 125% rated Rectifier cum charger unit + 100% rated inverter, integrated in UPS module						
	(b) IGBT Rectifier input for achieving THDi<5% and Input power factor of greater than 0.99						
	(c)100% rated external isolation transformer of H-class Delta/Star at the UPS output, after static bypass including cabling between UPS and transformer						
	(d) 100% rated Inbuilt static switch						
	(f) 100% rated Inbuilt Maintenance Bypass						
	(g) 100% rated moulded case circuit breaker having I thermal, magnetic and automatic U/V trip mechanics						
	(i) RS 485 port for BMS connectivity						
	(j) Supplying and installing Built-in suitable air-circulating fan .						
	Input phase reversal protection to be provided as standard, UPS should shift on battery and provide alarm.						
	(k) Supply, Installation, Testing and Commissioning of 12 V sealed maintenance free, Valve Regulated Lead Acid (VRLA) batteries for providing 30 minutes back up on each UPS at full load at 0.8 power factor.						
	(l) Supply, Fixing of battery rack for each UPS system along with interconnecting links, BCB etc as required						
	(m) UPS Should be provided with of Static Bypass Module having High Switching Frequency Microprocessor Based with builtin Technical Protections like Short Circuit, Overload, High/ Low Voltage cutoff protection of load from source inclusive of Bypass facility, SBM is activated during malfunctioning conditions of Load like:- -Short Circuit - Overload - Over temperature - Bypassing of particular load if reqd.						
	UPS 80 KVA AS MENTIONED ABOVE.	Set	1	3200000.00			3200000
	TOTAL SUBHEAD 7: UPS SYSTEMS						3200000
	SUB HEAD 8: WIRING						
8.00	WIRING						

S.No.		Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
8.01	i	Wiring for light point/fanpoint/ exhaust fan point/call bell point with 1.5 sq.mm. PVC insulated, fire retardant low smoke (FRLS) copper conductor cable, single core/ multi strand, in steel conduit (Including supplying & recess laying of MS conduit and accessories) including the following and complete as required.						
	ii	Supplying and Fixing Modular type switches (modular Bell push in case of call bell points) in suitable size modular metal boxes, base plate & modular cover plates, space for fixing electronic fan regulator in case of fan point wiring & space for fixing 5A socket on the board etc.						
	iii	Supplying and fixing Hexagonal fan Boxes with 3 mm thick hylem sheet covers in case of Fan Points						
	iv	Supplying & Fixing Ceiling Rose in case of Exhaust Fan Points etc.						
		Note : i) Unless otherwise specified all the conduiting work to be done in recess						
		Point wiring as mentioned above Group C	Point	4200	1037			4355400
8.02	i	Wiring for twin control light points with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable in MS conduit (including supplying and recess laying of MS conduit) including the following and complete as required.						
	ii	Supplying and Fixing Modular type two numbers 2 Way switches in suitable size modular metal boxes, base plate & modular cover plates etc.						
		Note : i) Unless otherwise specified all the conduiting work to be done in recess						
		Wiring for twin control light points as mentioned above	Point	100	1094			109400
8.03		Wiring for Submain/ circuit wiring with following size of PVC insulated FRLS copper conductor single core/multi strand cable in recessed steel conduit (including supply & laying of recessed conduit) as required.						
	i	2X1.5 Sqmm with 1 No. 1.5 sqmm PVC FRLS insulated, copper conductor for earthing.	Metre	11625	181			2104125
	ii	2X2.5 Sqmm with 1 No. 2.5 sqmm PVC FRLS insulated, copper conductor for earthing.	Metre	17188	206			3540728
	iii	2X4 Sqmm with 1 No. 4 sqmm PVC insulated FRLS copper conductor for earthing	Metre	27300	237			6470100
	iv	2X6 Sqmm with 1 No. 6 sqmm PVC insulated FRLS copper conductor for earthing	Metre	500	324			162000
	v	2X10 Sqmm with 1 No. 6 sqmm PVC insulated FRLS copper conductor for earthing	Metre	1125	392			441000
	vi	4X4 Sqmm with 2 No. 4 sqmm PVC insulated FRLS copper conductor for earthing	Metre	1200	374			448800
	vii	4X6 Sqmm with 2 No. 6 sqmm PVC insulated FRLS copper conductor for earthing	Metre	1200	518			621600
	viii	4X10 Sqmm with 2 No. 6 sqmm PVC insulated FRLS copper conductor for earthing	Metre	500	653			326500
	ix	4X16 Sqmm with 2 nos 6 sq mm PVC insulated FRLS copper conductor for earthing.	Metre	2150	930			1999500

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
8.04	Supplying and fixing suitable Modular GI box on surface or in recess including providing and fixing 3 pin 5/6 amps. modular socket outlet with shutters and 5/6 amps. modular type switch with indicator type, base plate, modular cover plate, connections etc. and all civil works 'complete as required.	Each	380	313			118940
8.05	Supplying and fixing suitable modular GI box on surface or in recess including providing and fixing 6 pin 15/16 A modular socket outlet with shutters and 15/16 A modular switch with indicator, base plate, modular cover plate, connections, etc. and all civil works complete as required.	Each	680	406			276080
8.06	Supplying and fixing suitable Modular metal box on surface or in recess including providing and fixing three nos 3 pin 5/6 amps. modular socket outlet with shutters and one no. 10 amps. modular type switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required. (For computer Points)	Each	300	824			247200
8.07	Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing two nos 3 pin 5/6 amps modular socket outlet with shutters and two no. 5/6 Amp modular switch, & two 6 pin 15/16 amp modular socket outlet with shutters and two no 15/16 modular switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required. (For Comb-1/ Bed Point)	Each	450	968			435600
8.08	Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing two nos 3 pin 5/6 amps. & one 6 pin 15/16 amp modular socket outlet with shutters and one no. 20 amps. modular switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required. (For Comb-2/Consultant point)	Each	235	732			172020
8.09	Supplying and fixing suitable Modular metal box surface or in recess including providing and fixing two nos 3 pin 5/6 amps. modular socket outlet with shutters and one no. 5 amps. modular type switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required. (COMBO POINT-3/ TV Point)	Each	85	542			46070
8.10	Supplying and fixing suitable module modular GI box on surface or in recess including providing and fixing 3 pin 20 A modular socket outlet with shutters and 20 AMP SP MCB, base plate, modular cover plate, etc. on surface or recess complete with all accessories including connections, testing and commissioning etc. as required.	Each	5	793			3965
8.11	Supply and fixing following 20/32 Amps, 240 volts, 2P+E, Industrial Socket Outlet (with plugs) in a metal box with 20/32 SP MCB in a sheet steel cover on surface or recess complete with all accessories including connections, testing and commissioning etc. as required.	Each	20	2000			40000
8.12	Supplying, providing & fixing cordless musical bell with batteries etc of approved make complete as required.	Each	50	500			25000

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
8.13	Supply and fixing following FP MCCB, 415 volts, 35 KA (Isc), Four Pole with thermal magnetic release having variable current setting (0.8 to 1.0 In) with Extended rotary operating mechanism including door interlocking with defeat feature and padlock facility in a sheet steel enclosure on surface complete with all accessories including connections, testing and commissioning etc. as required.						
	i 63 Amp	Each	2	7075			14150
	ii 63 Amp MCCB with 63 Amp RCCB	Each	6	10550			63300
	iii 125 Amp	Each	2	12510			25020
	iv 250 Amp	Each	2	21885			43770
	v 320Amp	Each	1	26414			26414
8.14	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	100	29			2900
	TOTAL SUBHEAD 8: WIRING AS MENTIONED ABOVE						22119582
	SUB HEAD 9: LIGHT FIXTURE AND FANS						
9.00	LIGHT FIXTURES AND FANS						
9.01	Supply of following LED light fixture with high efficiency with Driver, tubes/lamps, reflector, diffuser, body/housing holder etc. complete with all fixing accessories as required.						
	i 1 x 20 W LED box type light fixture (Philips BN108C LED 20S PSU CDL WH including Mounting Accessories, with minimum system lumen 2100 or approved equivalent from list of Makes)(136b/ 136bw)	Each	521	1640			854440
	ii 2 x 20 W LED box type light fixture (Philips BN108C LED 40S PSU CDL WH including Mounting Accessories, with minimum system lumen 2100 or approved equivalent from list of Makes)(236b/ 236bw)	Each	120	2560			307200
	iii LED Recessed flush mounted light fixture (Full Glow (1200mm), Philips RC380B G2 LED-35S-6500 L120W30 PSU OD or Crompton LCTLR-40-CDL as per requirement with minimum system lumen 3000 or approved equivalent from list of Makes)(RMSQ3, RMO1)	Each	864	4884			4219776
	iv LED recessed flush mounted light fixture with DALI type dimmable Electronic Ballast (Full Glow (1200mm), Philips RC380B G2 LED-35S-6500 L120W30 PSU OD or Crompton LCTLR-40-CDL as per requirement with minimum system lumen 3000 or approved equivalent from list of Makes)(RMSQ3, RMO1)	Each	250	6805			1701250
	iv LED recessed flush mounted light fixture (Full Glow (600mm), Philips RC380B G2 LED35S-6500 PSU OD WH or Crompton LCTLRN-36-FO-CDL per requirement with minimum system lumen 3000 or approved equivalent from list of Makes)(RMSQ3, RMO1)	Each	562	4884			2744808
	LED recessed flush mounted light fixture with DALI type dimmable Electronic Ballast (Full Glow (600mm), Philips RC380B G2 LED35S-6500 PSU OD WH or Crompton LCTLRN-36-FO-CDL per requirement with minimum system lumen 3000 or approved equivalent from list of Makes)(RMSQ3, RMO1)	Each	60	6805			408300

S.No.		Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	v	LED recessed flush mounted light fixture (Serenio Philips RC869B LED-30S-6500 PSE W30L 120 D8 WH Size 600 x 600 mm/ 1200 mm as per requirement, with minimum system lumen 3000 or approved equivalent from list of Makes)(236RMO2)	Each	20	5600			112000
	vi	LED Surface mounted light fixture (Philips SP824P LED 29S-5000 GR OD or Crompton LCTLS-40-CDL as per requirement with minimum system lumen 3000 or approved equivalent from list of Makes)(236SM01)	Each	50	7200			360000
		LED Surface mounted light fixture with DALI type dimmable Electronic Ballast (Philips SP824P LED 29S-5000 GR OD, Size 600 x 600 mm/ 1200 mm as per requirement with minimum system lumen 3000 or approved equivalent)	Each	10	9606			96060
	vii	LED recessed flush mounted light fixture (AURA I Crompton LCPL-36-CDL/TL Size 600 x 600 mm/ 1200 mm as per requirement, with minimum system lumen 3000 or approved equivalent from list of Makes)	Each	20	4643			92860
	viii	1 x 10 W Bulk Head light fixture (Philips WT202 W LED 6S CW PSU S1 PC or approved equivalent from list of Makes)(BH)	Each	40	1280			51200
	ix	1 x 14 W Mirror top with diffuser in 2ft variant (Crompton Greaves LINNET # LCL-14-CDL or approved equivalent from list of Makes)(wtoilet)	Each	160	1425			228000
	x	Surface mounted Batten holder (Plastic) with 9 watt LED	Each	30	550			16500
	xi	1 x 15 W LED Surface mounted down light fixture (Philips DN170C LED 10S-6500 PSU WH or approved equivalent from list of Makes)(DL1)	Each	280	2050			574000
		1 x 15 W LED Surface mounted down light fixture with DALI type dimmable Electronic Ballast (Philips DN170C LED 10S-6500 PSU WH or approved equivalent from list of Makes)(DL1/DL2)	Each	50	2850			142500
	xii	LED Recessed flush mounted down light fixture (Philips DN194B LED 15S -6500 PSU WH or Crompton LCDD-18-CDL/TL/WW or approved equivalent from list of Makes DL3)	Each	40	2200			88000
		1 x 24 W LED Recessed flush mounted down light fixture with DALI type dimmable Electronic Ballast (Philips DN194B LED 15S -6500 PSU WH or approved equivalent from list of Makes)(DL3)	Each	20	3000			60000
	xiii	1 x 18 W LED Surface mounted down light fixture (Crompton Greaves Pearl Round LCD SPL-R-18-CDL or approved equivalent from list of Makes)	Each	130	2100			273000
	xiv	1X3 / 5 W LED Surface /Recessed flush mounted light fixture to be used as night lamp Ceiling mounted (NLCM)	Each	20	600			12000
	xv	1X3 / 5 W LED Recessed flush mounted light fixture to be used as night lamp wall mounted (NLWM)	Each	10	800			8000
	xvii	1X36 LED Surface mounted down light fixture (Crompton Greaves Pensile LCSA1-36-CDL/S or approved equivalent)	Each	10	6334			63340
	xviii	1X50 LED Recess mounted down light fixture (Crompton Greaves Prakhar LCDNR-50-CDL/WW or approved equivalent)	Each	10	4750			47500
	xix							
9.02		Supply of following ceiling fans (BEE -5 Star Rated) complete with double ball bearing, motor, blades, downrod, canopies, capacitor, modular type electronic fan regulator, suitable for operation on 230 volts, 50 Hz., 1 phase, AC supply complete as required.						
	i	1400 mm Sweep	Each	50	2330			116500
	ii	1200 mm Sweep	Each	700	2210			1547000
	iii	900mm Sweep	Each	50	2140			107000

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
9.03	Supply of 1380 RPM, 300 mm (Crompton Greaves Trans Air or approved equivalent) exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	Each	50	1868			93400
9.04	Supply of 1250 RPM, 250 mm (Crompton Greaves Brisk Air or approved equivalent) exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	Each	50	1356			67800
9.05	Supply of 400 mm sweep, Crompton greaves model high flow 16" wall mounted fan complete with double ball bearing, motor, blades, capacitor etc suitable for single phase 230 volts, 50 Hz., AC supply, complete as required.	Each	10	2102			21020
9.06	Installation, testing and commissioning of wall bracket /ceiling fittings of all sizes and shapes containing LED lamps per fitting, complete with all accessories including connections etc. as required.	Each	3277	58			190066
9.07	Installation, testing and commissioning of ceiling fan and modular type electronic fan regulator (Electronic regulator to be fixed in switch board) including wiring the down rod and connection with 1.5 sqmm FR PVC insulated, copper conductor single core/multi strand cable including providing & fixing phenolic laminated sheet cover on the fan box, etc. as required.	Each	800	272			217600
9.09	Installation, testing and commissioning of exhaust fan up to 400 mm sweep in the opening, including making the hole to suit the size of the above fan including , fixing of louvers/ shutters with frame making good the damages etc. as required.	Each	100	294			29400
9.10	Installation, testing and commissioning of wall mounted fan up to 400 mm sweep including supply and fixing wall bracket arrangement complete as required.	Each	10	150			1500
9.11	Supply, installation, testing and Commissioning of LED Type Aviation light Philips XGP400 1xLED-K2/RD240V or approved equivalent including its wiring.	Each	2	3173			6346
	TOTAL SUBHEAD 9: LIGHT FIXTURE & FANS AS MENTIONED ABOVE						14858366

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	SUB HEAD 10: TELEPHONE SYSTEM						
10.00	TELEPHONE SYSTEM						
10.01	Supplying drawing, connecting and testing of 0.5mm dia annealed copper conductor PVC insulated PVC sheathed telephone Wire/cables in Existing M.S/ PVC conduit or a racks as required.						
	i 2 pair Telephone cable. (0.5 mm)	Meter	6300	21			132300
10.02	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.						
	i 20 mm	Metre	4200	126			529200
	ii 25 mm	Metre	1050	147			154350
10.03	Supply, fixing, connecting and testing of telephone modular sockets modular plate anodised MS box and blanking plate in surface / recessed including connection etc as required.						
	i Telephone socket outlet (RJ-11 telephone Jack Single with Shutter)	Each	200	171			34200
	ii Telephone socket outlet (RJ- 11 telephone Jack double with Shutter)	Each	10	208			2080
10.04	Supplying, Installation, testing and commissioning of following sizes of telephone distribution board in M.S. hinged type lockable box duly painted complete with Krone type tag block etc. including terminations of cable as required.						
	i 200 Pair	Each	1	15000			15000
	ii 100 Pair	Each	1	8000			8000
	iii 20 Pair	Each	2	1000			2000
	iv 10 Pair	Each	24	800			19200
10.05	Supplying and drawing of following pairs 0.5mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured telephone cable on surface/tray with saddels including termination of cables at both sides in Krone Tag Block etc. complete as required.						
	i 20 Pair	Metre	100	217			21700
	ii 10 Pair	Metre	500	113			56500
10.06	Supplying and drawing of following pairs 0.5 mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured jelly filled telephone cable in the existing trench/ hume pipe/ GI pipe etc with saddels etc. including terniation of cables in both sides at krone tag block complete as required.						
	i 200 pair	Metre	200	2900			580000
	ii 100 Pair	Metre	100	1950			195000
10.07	DIGITAL EPABX SYSTEM (COMMUNICATION SERVER)						
	A Supply, installation, testing & commissioning of 32 bit microprocessor based, fully digital, 100% non blocking, PCM-TDM, true ISDN & PRI Line and IP ready digital EPABX with distributed architecture for power supply cards, as per specifications with following configuration:						
	IP PBX 256 Extensions Expandable type						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	IP User -10 users						
	Configured For-						
	Analog P&T Lines- 16 (Expandable upto 12 Lines)						
	ISDN PRI Line (30 Channels)- 2 nos with CLIP Facility						
	24 Extension Digital Card : 1no						
	SUBSCRIBER INTERFACE:						
	Voice Mail system Consisting of Voice mail Boxes for all Users , Auto attended system with greeting messages						
	PC for Attending voice mail system						
	Redundant Lan Port and Wan Port-2						
	Redundant Call Processor						
	Redundant Power Supply						
	Full Software Licences & Support						
	In-built Music on Hold						
	Remote maintenance.						
	Ethernet port for LAN connectivity and System Management						
	Support for Voice over IP (VoIP)						
	Day/Night service						
	8 party conference Facility						
	Speed Dial						
	Support for OFC Connectivity						
	Support for Wi-Fi based wireless extensions.						
	System Documentation on CD-ROM						
	Hot Standby Duplication of all common control card without call disconnection.						
	IP Based operator Console with PC - 1 Nos.						
	should support IP Telephony and should be able to intergrate other EPBAX System on IP						
	DIGITAL EPABX SYSTEM AS MENTIONED ABOVE	Set	1	2232400			2232400
B	Flaot Cum Boost Charger (FCBC)for Above EPBAX System 48 V/125 Amp Inculding SMS Batteries with 2 hr Battery Back Up)	Set	1	103700			103700
C	Supply .Installation ,Testing and commissiing of IP Digital Phone having following features						
	IP Hard Console Phone						
	Full Colour VGA Display with 4096 different colours						
	Full alphabetic keyboard						
	Key-based navigation						
	Hands free operation						
	Best in Class loudspeaker for speakerphone operation; also includes microphones						
	Jack for headset expansion						
	Compatible with PC applications						
	Bluetooth connectivity for the ultimate in integration						
	2 Ethernet ports						
	Downloadable admin softwar						
	Eight Personalized Ring Patterns.						
	Either desk or wall mountable.						
	DIGITAL IP PHONES AS MENTIONED ABOVE	Set	10	24000			240000

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	D. 24 port Layer 2 Switch 10/100/1000 GBPS for IP phone	Set	1	123100			123100
	E Supply ,Installation ,Testing and commissioning of Digital Phone having following features (Before procurement of this item, the contractor shall have necessary approval approval of quantity from HSCC/Client. Adjustable graphical display Resolution 64X128 pixels. Size 70X38 mm Socket for headset 40 Programmable keys 2X3 contextual keys, 2 personal keys/LED Navigator keys 4 directions Alphabetic keyboard (Dial by name) Feature keys Like: Message + LED, Redial, End Key, Volume +/-, Mute with LED, Help, Handsfree with LED						
	Digital Phone as mentioned above	Set	6	15400			92400
	F Supply of Analog phones having following features(Before procurement of this item, the contractor shall have necessary approval approval of quantity from HSCC/Client. FSK/DTMF Compatible Caller-Id 16 Digit LCD single Display 30 Incoming Memory 5 Outgoing Memory Real Time Clock with Year, Date and Month display Conversation Time Display (Approx.) 6 Step LCD Contrast Adjustable 36 Digits Redial Memory Auto Filter Local Area Code up to 5-digit Real time & Date in Idle Mode						
	Analog phones as mentoned above	Set	10	1500			15000
	G Supply of Analog phones Without display having following features ; Pulse or tune Dailing 3 repertory Keys, 10 Speed Dailing Number, Last Number redial , Manual Pause, Adjustable volume etc (Before procurement of this item, the contractor shall have necessary approval approval of quantity from HSCC/Client.	Set	200	1000			200000
10.08	Supply, installation, testing and commissioning of Main Distribution frame Excanger side - Krone type for above system with IPM (protection Magzine) including mounting frame, etc/ Complete as required as per specifications.	Set	1	117300			117300
10.09	Supply, installation, testing and commissioning of Field Side Distribution frame Excanger side - Krone type for above system with IPM (protection Magzine) including mounting frame, etc/ Complete as required as per specifications.	Set	1	64660			64660

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	TOTAL SUBHEAD 10: TELEPHONE SYSTEM AS MENTIONED ABOVE						4938090
	SUBHEAD 11 CONDUITING FOR COMPUTER SYSTEM .						
11.00	CONDUITING FOR COMPUTER SYSTEM .						
11.01	Supply and fixing of following sizes of MS conduit along with the accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required						
	i 20 mm dia	Metre	6500	126			819000
	ii 25 mm dia	Metre	1300	147			191100
11.02	Supplying and fixing two module modular plate in recess flush mounted with clear acrylic cover (suitable for RJ-45 computer socket) with GI box complete as required.	Each	260	437			113620
	TOTAL SUBHEAD: 11 CONDUITING FOR COMPUTER SYSTEM AS MENTIONED ABOVE						1123720
	SUB HEAD 12: CONDUITING FOR TV OUTLETS						
12.00	CONDUITING FOR TV OUTLETS						
12.01	Supply and fixing of following sizes of MS conduit along with the accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required						
	i 20 mm dia	Metre	1200	126			151200
	ii 25 mm dia	Metre	200	147			29400
12.02	Supplying and fixing 2 module modular metal box in recess flush mounted with clear acrylic cover with modular cover plate including fixing 1 no. coaxial TV outlet connection and all accessories complete as required	Each	40	233			9320
12.03	Supply and drawing Coaxial TV Cable RG - 6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Metre	1600	54			86400
	TOTAL SUB HEAD 12: CONDUITING FOR TV OUTLETS AS MENTIONED ABOVE						276320
	SUBHEAD 13: ADDRESSABLE FIRE ALARM SYSTEM						
13.00	ADDRESSABLE FIRE ALARM SYSTEM						
13.01	Supply, Installation, testing and commissioning of microprocessor based addressable type networkable Fire Detection & Alarm Panel complete with inbuilt power supply, battery charger with SMF batteries for minimum 24 hours back-up. The panel shall have a communication module and HI 485 network card. The panel should have rectifier, loop card, minimum 80 character LCD unit to indicate fire/ fault signals with address including external/ internal printer port etc complete as per technical specifications and as per the requirement of Local Fire Authority and as required.						
	i 8 Loop	Nos.	1	881432			881432

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in Rate in words (in Rs.)	Amount in Figures (Rs.)
13.02	Supply, installation, testing and commissioning of Automatic Analog addressable Photo - Thermal multicriteria detector with mounting Base, alarm LED. The Detector shall have automatic Electronic/ dip switch addressing feature , complete with the GI Mounting Box and the hardware etc. as required. (UL Approved)	Nos.	400	3784		1513600

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
13.03	Supply, installation, testing and commissioning of Automatic Analog addressable Photoelectric smoke detector with mounting Base, alarm LED shall be viewable from 360 degrees. The Detector shall have automatic Electronic/ dip switch addressing feature , complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	470	3551			1668970
13.04	Supply, installation, testing and commissioning of Automatic Analog addressable Fixed Temperature cum rate of Rise type Heat detector with mounting Base, alarm LED shall be viewable from 360 degrees. The Detector shall have automatic Electronic/ dip switch addressing feature, complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	44	3406			149864
13.05	Supply, installation, testing and commissioning of Automatic Analog addressable Duct Detector with Duct Housing and Duct probe tubes complete with Photoelectric Smoke Detector with mounting Base, alarm LED shall be viewable from 360 degrees. The Detector shall have automatic Electronic/ dip switch addressing feature , complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	30	14496			434880
13.06	Supply, installation, testing and commissioning of Automatic Addressable control module for AHU & Stair Pressurization fan, The Module shall have automatic Electronic addressing feature & each of these shall be equipped with fault Isolator complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	20	3668			73360
13.07	Supply, installation, testing and commissioning of Automatic Addressable Monitor module for Flow Switch Monitoring etc. The Module shall have automatic Electronic/ dip switch addressing feature, complete with the GI Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	20	3668			73360
13.08	Supply, installation, testing and commissioning of Dual LED Response indicator for indicating the activation of the Remotely located Detector.	Nos.	360	291			104760
13.09	Supply, installation, testing and commissioning of Addressable Manual call Station. The Call Point shall have automatic Electronic/ dip Swich addressing feature, complete with the Mounting Box and the hardware etc. as required. (UL Approved).	Nos.	35	3784			132440
13.10	Supply, installation, testing and commissioning of Addressable electronic Sounder. The Sounder shall have automatic Electronic/ dip switch addressing feature ,complete with the Mounting Box and the hardware etc. as required. The Sounders shall be Loop powered i.e. should not require additional cable to feed the Power & shall be programmable from the Fire Panel for Multiple type of tones selection. (UL Approved).	Nos.	34	4483			152422

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
13.11	Supply, installation, testing and commissioning of Addressable electronic Sounder with Optical Beacon. The unit shall have automatic Electronic addressing/ dip switch feature, complete with the Mounting Box and the hardware etc. as required. The unit shall be Loop powered i.e. should not require additional cable to feed the Power & shall be programmable from the Fire Panel for Multiple type of tones selection. (UL Approved).	Nos.	7	5181			36267
13.12	Supply testing and commissioning of isolator module as per specifications.	Set	45	3623			163035
13.13	Supply, installation, testing and commissioning of full duplex Fire Fighter's talk Back system with operator command centre and sufficient no. of point . The full duplex emergency communication system shall be able to display customized address of the location from which the Call is being made to the Fire Fighter's command Centre.	Nos.	1	56763			56763
13.13	Supply, installation, testing and commissioning of Addressable Fire Fighter's Telephone Jack for full duplex emergency communication with the Fire Fighter's command Centre.	Nos.	8	5589			44712
13.14	Supply, installation, testing and commissioning of 2 way communication Fire Fighter's Handset complete with suitable leads for inserion.	Nos.	8	2795			22360
13.15	Supply and laying of following size of MS Conduit pipe in recess including all accessories MS pull/ junction boxes, GI fish wire of 6 SWG, fixing hardware etc., including cutting, chasing the walls/ floor and plastering the chased portion and making good the damages etc., complete as required.						
	i 20 mm dia	Meter	4500	126			567000
	ii 25 mm dia	Meter	500	147			73500
13.16	Supply and drawing of 2C x 1.5 Sq.mm. Sheathed anneled flexible copper Conductor FRLS cable in existing M. S. Conduit, Complete with termination and testing as per requirement.	Meter	3500	86			301000
13.17	Supply and drawing of 4C x 1.5 Sq.mm. anneled flexible copper Conductor, Copper braided shielding and overall Sheathed FRLS cable in existing MS Conduit, Complete with termination and testing as per requirement.	Meter	500	126			63000
	TOTAL SUB HEAD 13: ADDRESSABLE FIRE ALARM SYSTEM as mentioned above						6512725
	SUB HEAD 14: PUBLIC ADDRESS SYSTEM						
14.00	PUBLIC ADDRESS SYSTEM						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
14.01	Supply, Installation, Testing and Commissioning of Analog based PA Controller capable of handling 8 zones, Digital audio controller complying to IEC EN 60849 with built-in high and low pass filters and parametric equalizer. With in built 500 W digital amplifier and 8 Outputs Led Indication of each zone independent output control button and volume control. Network input, BGM input, local emergency Mic input, can work with One Extra stand by amplifier, when the inbuilt amplifier come out faulty the standby amplifier takes over automatically. Support 24 V DC input interface. Paging integration with EPABX	Set	1	173201			173201
14.02	Supply, Installation, Testing and Commissioning of Power Amplifier						
	Power Amplifier SCPA500/ 70V, 100 V & 4-16 ohm, 2 channel power amplifier						
	- Inrush restraint and softstart						
	- Integrated electronic protection against thermal overload and short circuit.						
	- Temperature controlled fans, airflow from front to rear.						
	- Method of control: Class D						
	- Power output of amplifier: 2 x 500W sin. /100V						
	- Output range: 50 Hz – 22kHz; 0/-0,5 dB						
	- Signal to noise ratio (not valuated): > 105 dB						
	- Channel separation: > 75 dB						
	- THD (total harmonic distortion): < 0.08%						
	- Input level at max. output voltage: 0 dBu						
	- The amplifier has to be switched into Stand-by Mode in case of power loss by the control centre.						
	POWER AMPLIFIER as mentioned above	Set	1	91345			91345
14.03	Supply, Installation, Testing and Commissioning of CALL STATION 8 ZONE						
	- call station with electret microphone (cardioid-characteristics) on flexible 300 mm swan neck complete with wideband loudspeaker for monitoring, pre-listen and intercom operation for the networked PA system.						
	- Permanent inaudible supervision of the microphone and its capsule in accordance to EN 60849.						
	- 16 free programmable and label able keys.						
	DIGITAL CALL STATION 8 ZONE as mentioned above	Set	1	63109			63109
14.05	Supply, Installation, Testing & Commissioning of 6 W, transformer tapping 100 volt line multitap, driver impedance 8 ohm, SPL @ 1m, 1 Watt.(Ceiling speaker)	Each	122	2870			350140
14.06	Supply, Installation, Testing and Commissioning of Wall mountable type column type Speaker 6 watt, SPL 90 dB, Freq response 200-15000 Hz, rated input voltage 100 Volts & rated impedance 1667 Ohms.	Each	20	1455			29100
14.07	Supply, Installation, Testing & Commissioning of Music source CD/ MP3 Player 1 U table top and rack mount clearly visible LCD display, micro computer and touch button operation complete as required.	Each	1	10188			10188

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
14.08	Supply and drawing of 2 x 1.5 sqmm ATC Copper conductor cable/ wire in existing MS Conduit, Complete with termination and testing as per requirement.	Metre	2500	68			170000
14.09	Supply and fixing of following sizes of MS conduit along with the accessories in surface/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required						
i	25 mm dia	Metre	3000	147			441000
14.10	Supply, installation, testing and commissioning of 19" Equipment Rack with power coated finish with front lockable Door with MS Framed translucent Acrylic material, 2 Nos of fans for heat exhaust, Top & Bottom entry knock outs, back side lockable Door, inbuilt MCB, Power Points, raceways and partitions, one no. sliding Tray etc. complete as required	Each	2	56763			113526
TOTAL SUB HEAD 14: PUBLIC ADDRESS SYSTEM as mentioned above							1441609
SUB HEAD 15: CCTV SURVEILLANCE SYSTEM							
15.00	CCTV SURVEILLANCE SYSTEM						
15.01	Supply, Installation, Testing and Commissioning of Day/ night fixed dome with a discreet, dust and IK rated vandal-resistant indoor casing. Varifocal 2.8-10 mm P-Iris lens, remote focus and zoom. Multiple, individually configurable H.264 and Motion JPEG streams; max HDTV 720p or 1 MP resolution at 30 fps. WDR more than 70dB. Video motion detection and active tampering alarm. Memory card slot for optional local video storage. Power over Ethernet. Includes mounting bracket for wall/ ceiling or junction boxes.	Nos.	20	41364			827280
15.02	Supply, Installation, Testing and Commissioning of Ultra-compact, indoor fixed mini dome with dust and vandal-resistant casing for easy mounting on wall or ceiling. Fixed lens 2.8mm. Multiple, individually configurable H.264 and Motion JPEG streams; max HDTV 720p or 1 MP resolution at 30 fps. MicroSD/ microSDHC memory card slot for optional local video storage. Video motion detection and active tampering alarm. Comes with a 2 m (6.6 ft.) network cable and is powered using Power over Ethernet.	Nos.	75	33126			2484450
15.03	Supply, Installation, Testing and Commissioning of Intel Xeon Processor E5-2609 v3, 1.90 GHz, 15MB Cache, Memory: 8GB (2 x 4GB), storage: 16TB usable after RAID, HDD speed of 7200 rpm, 64MB Cache, SATA 6Gb/s interface, RAID 5 Hotpluggable, RAID controller: PERC H730, 1GB NV, Graphics Matrox 200 eR, recording Shall support recording up to 64 video channels with a total recording rate up to 256 Mbit per second, software Compatible with Cameras, Encoders including HD, Standard resolution, High Resolution, Pant Tilt, Zoom, Thermal, Cameras, playback upto 64x or frame by frame upto 25 cameras synchronized playback, power supply Dual, Hot-plug, Redundant Power Supply, 495 W, AXIS S1048, connector 4 x USB 2.0, 2 x VGA, Serial port (DB9), 4 x Ethernet (RJ45), 2 x Power inlet complete as required.	Nos.	1	1615611			1615611

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
15.04	Supply, Installation, Testing and Commissioning of Client system with processor Intel i5-4570S 2.90 GHz, memory 4 GB DDR3-SDRAM PC3-12800 (800 MHz) - [DDR3-1600] storage 500 GB, 7200 rpm HDD with 64 MB cache and SATA 6Gb/s interface, graphics AMD Radeon R5 A240 1 GB DDR3 with DVD-RW.NETWORK CARD Integrated Intel I217LM Ethernet LAN 10/ 100/ 1000 Mbit Live VIDEO stream Minimum Support for resolutions upto 5 Mpixel upto 15 fps or 3MP upto 20 fps or 2MP upto 25 fps, client software Compatible for all cameras, encoders, PTZ Cameras, Thermal Cameras, 6 x USB 2.0, 4 x USB 3.0, 3 x Display Port, 1 x VGA, 1 x Dual link DVI-I, AXIS S 9001, Network connector, Line-in/ out connectors, Computer mouse and keyboard connectors with two display monitor output.with Mouse, Keyboard USB Type complete as required.	Nos.	1	215720			215720
15.05	CCTV COLOR MONITOR Supply, installation, testing & commissioning of 32" Flat LED Color Monitors.	Nos.	2	65001			130002
15.06	ETHERNET SWITCHES						
	i Supply, installation, testing & commissioning of PoE Layer II Managed Ethernet switch: 16 port RJ45 10 base 100 T with 2 Fibre Ports.	Nos.	16	74714			1195424
	ii Supply, installation & testing of Layer III Managed Ethernet switch: 24 port RJ45 10 base 1000T with 2-Fibre Ports	Nos.	1	212731			212731
15.07	19 INCH RACK MOUNT						
	i Supply, installation, testing & commissioning of 19 inch rack mount console unit - 42 U with 4 cooling fans on top and bottom at control room.	Nos.	1	70910			70910
	ii Supply, installation, testing & commissioning of 19 inch rack mount console unit - 6 U for Layer 2 switches on field.	Nos.	16	7091			113456
	iii Any other network equipment like Patch Chords, Patch Panels, Jack Panels, Splicing and LIU required for successful operation.	Lot	1	92830			92830
15.08	Supply, laying & testing of Cat 6 UTP cable with all termination crimping etc.	Metre	4000	51			204000
15.09	Supply, laying & testing of 2 x 1.5 sqmm Power Cable for powering all the SWITCHES .	Metre	400	76			30400
15.10	Supply and fixing of following sizes of MS conduit along with the accessories in surface/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required						
	i 25 mm dia	Metre	4500	147			661500
15.11	Supply, installation, testing and commissioning of 2 kVA UPS with batteries 30minutes backup etc. complete in ready to use condition	SET	1	40000			40000
	TOTAL SUB HEAD 15: CCTV SURVEILLANCE SYSTEM as mentioned above						7894314
	SUB HEAD 16: NURSE CALL SYSTEM						
16.00	NURSE CALL SYSTEM						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
16.01	Supply, Installation Testing and Commissioning of Microprocessor controller Nurses station with terminal monitor with in built power supply , with charger enclosed in a powder coated cabinet . Having with Reset. alarm/ buzzer, Call acknowledge with battery back up, battery charger complete system as per technical specifications and as per required of following suitable configuration.omni call complete as required						
	i 32 Way	Nos.	2	155496			310992
	ii 24 Way	Nos	10	95129			951290
	iii 16 Way	Nos	4	57151			228604
	iii 8Way	Nos	2	35397			70794
16.02	Supply, Installation, Testing & Commissioning of Bed Call Push Button with LED indication and Flexiable Cord with button, Call Reset, Call Indication, station for each Bed omni call complete as required.	Nos	322	2154			693588
16.03	Supply, Installation, Testing & Commissioning of Toilet Call Push Button with LED indication and flexiable cord with button, Call Reset, Call Indication, station for each Bed omni call complete as required.	Nos.	20	2154			43080
16.04	Supply, Installation, Testing & Commissioning of LED Indicators Module at Outside of each ward omnicall complete as required.	Nos	33	1455			48015
16.05	Supply, laying and testing of 6C X 0.5 Sqmm diameter multistand copper conductor PVC cable in existing MS/ PVC Conduit on recessed/ surface with all accessories complete as required	Meter	4000	82			328000
16.06	Supply, laying and testing of 2C X 0.5 Sqmm diameter multistand copper conductor PVC cable in existing MS/ PVC Conduit on recessed/ surface with all accessories complete as required	Meter	2000	44			88000
16.06	Supply and fixing of following sizes of MS conduit along with the accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required						
	ii 25 mm dia	Meter	4500	147			661500
	TOTAL SUB HEAD 16: NURSE CALL SYSTEM AS MENTIONED ABOVE						3423863
	SUBHEAD 17: INVERTER						
17.01	Supply, installation, testing and commissioning of 2 kVA inverter with batteries 30minutes backup etc. complete in ready to use condition. Make Sukam, Microtek & Luminous	SET	1	40000			40000
	TOTAL SUB HEAD 17: INVERTER AS MENTIONED ABOVE						40000
	SUB HEAD 18: ACCESS CONTROL AND BOOM BARRIER SYSTEM						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
18.01	ACCESS CONTROL SYSTEM						
18.02	Supply, Installation, Testing and Commissioning of Micro processor based access control system engineered with 32 bit CPU to cater to the multiple Readers and Multiple locations, Expandable, Networkable TCP/IP protocol compatible distributed Intelligence, Supporting Two Readers, and having flash memory, can be expandable card data base upto 55000 cards and transaction buffer of 45000 transaction, 128 access level, 127 time zone Levels, 8 supervised inputs and 4 Nos of relay outputs for easy and reliable interface with the 3rd party systems. Complete with Digital Power supply etc as required. Model: Pro- 3000.	Nos.	4	61130			244520
18.02	Supply, Installation, Testing and Commissioning of Single - User Software Platform pioneer in integrating Video, access control and Intrusion detection Systems.The Software is capable of managing the users from multiple locations, Real time event/ alarm Monitoring, Schedule Guard Tour feature, Model: Win Pack.	No.	1	56472			56472
18.03	Supply, Installation, Testing and Commissioning of PC with DVD Drive and 1 TB HDD, 22" LED Monitor and required Keyboard, Adapter for Ethernet networking, compatible with TCP/IP network protocols with a minimum bandwidth of 100Mbps along with Microsoft's latest Windows software OS complete in all respects as per specifications.	No.	1	72715			72715
	i 4 Gigabyte of RAM memory						
	ii 1 TB Gigabytes of hard disk space						
	iii DVD Combo Drive						
	iv 22" LCD colour monitor						
	v Optical Mouse with 2 Mouse Pads						
	vi Multimedia Keyboard						
	vii 10/ 100/ 1000 MBPS PCI LAN onboard card.						
18.04	Supply, Installation, Testing and Commissioning of long Range Proximity Reader suitable for external/ Internal environment with Mounting Stain less steel stand complete as required.	Nos.	2	40171			80342
18.05	Supply, Installation, Testing and Commissioning of Normal Range Proximity Reader suitable for Internal environment complete as required.	Nos.	8	7976			63808
18.06	Supply, Installation, Testing and Commissioning of HID 34-bit Proximity Access Card. Standard HID proximity card with slot hole punch on the short side for badge clips (BC-1).	No.	250	408			102000
18.07	Supply, Installation, Testing and Commissioning of Single Leaf Electromagnetic lock 600LBS with LED and NO/ NC Contact with U & L Bracket complete as required.	Nos.	4	7976			31904
18.08	Supply, Installation, Testing and Commissioning of Double Leaf Electromagnetic lock 600LBS with LED and NO/ NC Contact with U & L Bracket complete as required.	Nos.	8	10410			83280
18.09	Supply, Installation, Testing and Commissioning of egress switch with Metal Plate complete as required.	Nos.	12	1688			20256
18.10	Supply, Laying, Testing and Commissioning of multistand copper conductor PVC sheathed & shielded Cable 8C x 0.5 sqmm diameter complete as required.	Metre	500	102			51000

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
18.11	Supply and fixing of following sizes of Medium Class FRSL PVC conduit along with the accessories in surface/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required						
	i 25 mm dia	Metre	500	95			47500
18.12	Supply, Installation, Testing and Commissioning of 2 x 1.5 sq. mm diameter, copper conductor PVC insulated cable complete in existing Conduit as required.	Metre	1000	56			56000
18.13	Supply of Connectors, interfaces, Mounting hardware, Cords, Jacks, Plugs, tags, identifiers, fixtures, clamps, screws, nut - bolts etc as required for the installation and commissioning.	Set	1	5822			5822
	BOOM BARRIER SYSTEM						
18.14	Supply, Installation, Testing and Commissioning of High Speed Microprocessor based with activation system comprising Hydraulic pump unit, Plunger pistons, balancing by compression spring , internal stops adjustable for open or close beam positions. the barrier for continuous use for vehicular span of up to 7 mtrs, includes Boom with controller & accessories, 100% duty cycle. with complete as required	Nos.	2	191540			383080
18.15	Supply, Installation, Testing and Commissioning of Twin Channel Exit Push button for open close with green and red Buttons.	Nos.	2	6113			12226
18.16	Supply, Installation, Testing and Commissioning of Photocell based safety device to avoid closing of the barrier when a Vehicle is crossing the barrier.	Set	2	8442			16884
18.17	Supply, Installation, Testing and Commissioning of 3 x 1.5 sq. mm diameter, copper conductor PVC cable in existing Conduit complete as required..	Metre	500	75			37500
18.18	Supply and fixing of following sizes of MS conduit along with the accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required						
	i 25 mm dia	Metre	800	147			117600
18.19	Supply of Connectors, interfaces, Mounting hardware, Cords, Jacks, Plugs, tags, identifiers, fixtures, clamps, screws, nut - bolts etc as required for the installation and commissioning.	Set	1	37842			37842
	TOTAL SUBHEAD 18: ACCESS CONTROL AND BOOM BARRIER SYSTEM as mentioned above)						1520751
	SUB HEAD 19: LIFTS						
19.00	LIFTS						
19.01	Design, manufacture, supply, installation, testing and commissioning of following 20 passenger cum hospital (1360 kg) lift , serving different floors in the lift shaft including machine room at the top. The lift should be as per detailed specification/ drawing enclosed as required and as under:						
	- Speed : 1 MPS						
	- Travel: As per architectural drawing.						
	- Controller: A.C. variable voltage & variable frequency						
	- Automatic rescue device complete with dry maintenance free batteries as required.						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	- Operation: Microprocessor based single automatic push button/ simplex selective collective/duplex collective selective with / without attendant.						
	- 415 V, 3 phase, 50 Hz, 4 wire system						
	- Type of doors: a) Car : Power operated, Telescopic opening., horizontal sliding stainless steel scratch proof. (b) Landing doors: Stainless steel scratch proof. Lift landing doors shall have a fire resistance of one hour.						
	- All push buttons will have Brail also.						
	- Car Enclosure : Scratch proof stainless steel finish.						
	- A hand rail guide not less than 600 mm long at 900 mm above floor level .						
	- Mirror of suitable size to be fixed inside the lift car.						
	- Voice announcement system in the car to announce the position of the elevator in the hoistway as the car passes or stops at a floor served by the elevator.						
	- Telephone with minimum two connections one at operator's room and other at guard/ security room and the emergency signal with re-chargeable batteries as source of supply be made in the lift car.						
	- Toe guard, IR curtain on full height, two phase fireman's drive control/ switch and potential free contacts etc to be provided.						
	Floors : -L2+L1+G+6, (9 stops & 9 openings)	Each	2	3760500.00			7521000
	Floors : -L1+G+6, (8 stops & 8 openings)	Each	2	3674250.00			7348500
	Floors : -G+6, (7 stops & 7 openings)	Each	3	3588000.00			10764000
	Passenger cum hospital Lift as mentioned above						
19.02	Supply, Fixing, Testing and Commissioning of Dumb Waiter of Capacity 100kgs. Complete as required. Fabrication in M.S finish						
	- Speed : 0.5 MPS						
	Floors : G+6 (4 stops & 4 openings) (at Ground, Fourth , Fifth& Sixth Floor)	Each	2	897000.00			1794000
	Dumb Waiter as mentioned above						
	TOTAL SUB HEAD 19: LIFTS AS MENTIONED ABOVE						27427500
	SUB HEAD 20: LT CABLES						
20.00	LT CABLES						
20.01	Supply of following sizes of 1.1 kV grade multicore aluminium conductor PVC sheathed armoured XLPE cable as per IS 7098.						
	i 3.5 Core 25 Sqmm.	Metre	1200	251			301200
	ii 3.5 Core 35 Sqmm.	Metre	100	310			31000
	iii 3.5 Core 50 Sqmm.	Metre	100	398			39800
	iv 3.5 Core 70 Sqmm.	Metre	500	541			270500
	v 3.5 Core 95 Sqmm.	Metre	100	672			67200
	vi 3.5 Core 120 Sqmm.	Metre	100	839			83900
	vii 3.5 Core 150 Sqmm.	Metre	100	995			99500
	viii 3.5 Core 185Sqmm.	Metre	300	1238			371400
	ix 3.5 Core 240 Sqmm.	Metre	300	1560			468000
	x 3.5 Core 300 Sqmm.	Metre	1600	1913			3060800

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
	xi 3.5 Core 400 Sqmm.	Metre	500	2432			1216000
	xii 4 Core 16 Sq mm	Metre	100	204			20400
	xiii 4 Core 10Sq mm	Metre	100	180			18000
	xiv 4 Core 6 Sq mm	Metre	100	142			14200
	xv 3 Core 6 Sqmm.	Metre	100	126			12600
	xvi 3 Core 4 Sqmm.	Metre	100	108			10800
	xvii 2 Core 10 Sq mm	Metre	1800	135			243000
	xviii 2 Core 16 Sq mm	Metre	1000	160			160000
20.02	Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required						
	i Up to 35 sq.mm	Metre	2450	206			504700
	ii Above 35 Sq mm and upto 95 Sq mm	Metre	490	214			104860
	iii Above 95 Sq mm and up to 185 Sq mm	Metre	210	223			46830
	iv Above 185 Sq mm and up to 400 Sq mm	Metre	1400	248			347200
20.03	Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade direct in the existing RCC/Hume/Stoneware/Metal pipe as required						
	i Up to 35 sq.mm	Metre	525	18			9450
	ii Above 35 Sq mm and upto 95 Sq mm	Metre	83	28			2324
	iii Above 95 Sq mm and up to 185 Sq mm	Metre	45	37			1665
	iv Above 185 Sq mm and up to 400 Sq mm	Metre	301.0	65			19565
20.04	Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade on surface or on existing cable tray complete as required.						
	i Up to 35 sq.mm	Metre	525	21			11025
	ii Above 35 Sq mm and upto 95 Sq mm	Metre	83	49			4067
	iii Above 95 Sq mm and up to 185 Sq mm	Metre	46	61			2806
	iv Above 185 Sq mm and up to 400 Sq mm	Metre	301.0	96			28896
20.05	Supplying and making end termination with suitable size Aluminium lugs including double compression glands of following sizes of 1.1 kV grade multicore aluminium conductor PVC insulated and PVC sheathed						
	i 3.5 Core 25 Sqmm.	Each	60	257			15420
	ii 3.5 Core 35 Sqmm.	Each	10	282			2820
	iii 3.5 Core 50 Sqmm.	Each	30	354			10620
	iv 3.5 Core 70 Sqmm.	Each	40	394			15760
	v 3.5 Core 95 Sqmm.	Each	10	482			4820
	vi 3.5 Core 120 Sqmm.	Each	30	500			15000
	vii 3.5 Core 150 Sqmm.	Each	40	592			23680
	viii 3.5 Core 185Sqmm.	Each	20	804			16080
	ix 3.5 Core 240 Sqmm.	Each	30	989			29670
	x 3.5 Core 300 Sqmm.	Each	60	1106			66360
	xi 3.5 Core 400 Sqmm.	Each	6	1389			8334

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
xii	4 Core 16 Sq mm	Each	20	203			4060
xiii	4 Core 10Sq mm	Each	20	255			5100
xiv	4 Core 6 Sq mm	Each	10	255			2550
xv	3 Core 6 Sqmm.	Each	10	171			1710
xvi	3 Core 4 Sqmm.	Each	10	171			1710
xvii	2 Core 10 Sq mm	Each	30	158			4740
xviii	2 Core 16 Sq mm	Each	40	170			6800
20.06	Supply and laying of Flexiable Industrial cable, Copper Conductor , FR PVC insulated 1100 volts conforming to IS 694/1990 or ammended uptodate in fexiabel MS condiut / Pipe ,Complete with termination and testing as per requirement.						
i	4 Sqmm	Metre	100	43			4300
ii	6 Sqmm	Metre	100	65			6500
iii	10 Sqmm	Metre	100	11			1100
iv	16 Sqmm	Metre	50	178			8900
v	25 Sqmm	Metre	50	297			14850
vi	50 Sqmm	Metre	50	586			29300
	TOTAL SUBHEAD 20: LT CABLES AS MENTIONED ABOVE						7871872
	SUBHEAD 21: EARTHING						
21.00	EARTHING						
21.01	Supply and installation of one number earth pit with advance maintainance free Earthing System consisting of one Number, CPRI tested copper bonded steel electrode of minimum 25 mm dia. (as per IE C62561-2) With a minimum coating thickness of 250 microns and length of 3 meters, 25 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode , SS Universal Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories , excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	10	16618			166180
21.02	Supply and installation of one number earth pit with advance maintainance free Earthing System consisting of one Number, CPRI tested copper bonded steel electrode of minimum 19 mm dia (as per IE C62561-2) With a minimum. coating thickness of 250 microns and length of 3 meters. 25 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode , SS Universal Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories , excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	14	14864			208096

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
21.03	Supply and installation of one number earth pit with of advance maintenance free Earthing System consisting of one Number UL Listed CPRI tested copper bonded steel electrode of minimum 13 mm dia. (as per IE C62561-2) With a minimum. coating thickness of 250 microns and length of 3 meters. 25 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode , SS Universal Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories , excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	34	13064			444176
21.04	Supply and installation of one number earth pit with of maintenance free earthing system consisting of 1250 mm long copper bonded steel electrode of minimum 13 mm dia. tested as per IEC 62561-2.Minimum copper coating thickness on Rod is 100 microns. 5 kg/Electrode of earth enhancing compound tested as per IEC 62561-7 fill the 75-100mm augered hole surrounding to the electrode.It consist the following Item opper Alloy clamp suitable Poly PropyleneHeavy duty Pit cover including all accessories , excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	6	3910			23460
21.05	Supplying and laying 25mmX5mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	400	85			34000
21.06	Providing and fixing 25mmX5mm GI strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	1000	129			129000
21.07	Supplying and laying 50mmX6mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	100	273			27300
21.08	Providing and fixing 50mmX6mm GI strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	200	368			73600
21.09	Providing and fixing 25mmX5mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	200	698			139600
21.10	Supplying and laying 25mmX5mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	100	595			59500
21.11	Supplying and laying 50mmX6mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	400	1500			600000
21.12	Providing and fixing 50mmX6mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	300	1400			420000
21.13	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I.pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required	Metre	400	872			348800

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
21.14	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	Metre	800	351			280800
21.15	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Metre	500	37			18500
	TOTAL SUBHEAD 21: EARTHING AS MENTIONED ABOVE						2973012
22.00	SUBHEAD 22 LIGHTNING PROTECTION						
	LIGHTNING PROTECTION						
22.01	Supply and installation of one number earth pit with of advance maintenance free Earthing System consisting of one Number UL Listed CPRI tested copper bonded steel electrode of minimum 13 mm dia. (as per IE C62561-2) With a minimum coating thickness of 250 microns and length of 3 meters. 25 kg/Electrode of earth enhancing compound (tested as per IEC-62561-7) fill the 100mm augered hole surrounding to the electrode , SS Universal Clamp of Size 175X50X3 mm for terminal Connection including Poly Propylene Heavy duty Pit cover including all accessories , excavation of earth, filling with back fill compound, and earth pit marking. The Complete installation shall be as per the drawing, technical specifications and as required	Set	12	13064			156768
22.02	Providing and fixing of lightning conductor finial, made of 25mm. dia. 300mm., long GI tube, having single prong at top, with 85 mm. dia. 6 mm. thick GI base plate including holes etc. complete as required.	Each	10	304			3040
22.03	Providing and and fixing GI tape 20mm X 3 mm thick on parapet or surface of wall for lightning conductor as required. (For horizontal runs).	Metre	1800	66			118800
22.04	Providing and and fixing GI tape 20mm X 3 mm thick on parapet or surface of wall for lightning conductor as required. (For vertical runs).	Metre	1000	100			100000
22.05	Providing and fixing testing joint, made of 20mmX3mm thick GI strip, 125 mm. long, with 4 no.'s of GI bolts, nuts, check nuts, bar shaddles, and spring washers etc. complete as required.	Each	12	73			876
22.06	Providing and laying GI tape, 32 mm X 6 mm thick, from test joint upto earth electrode directly in ground as required.	Metre	240	112			26880
	TOTAL SUBHEAD 22: LIGHTNING PROTECTION AS MENTIONED ABOVE						406364
	SUBHEAD 23: SOLAR PHOTVOLTAIC POWER GENERATION						
23.00	SOLAR PHOTVOLTAIC POWER GENERATION						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
23.01	Supply, installation, testing and commissioning of grid interactive roof top solar photovoltaic power generation system including solar modules, module mounting structure, grid interactive solar inverter, data logger with temperature and irradiance sensor, AC distribution board, multi data meter, cables, contacts, earthing kit, GI strips (25 x 5 mm), vertical air terminal and installation kit etc. complete in ready to use condition and as per technical specifications.						
	i 20 KWp	Set	1	1600000			1600000
	ii Extra for providing space frame for above 10KWp solar system.	Set	1	400000			400000
	TOTAL SUB HEAD 23: SOLAR PHOTVOLTAIC POWER GENERATION AS MENTIONED ABOVE						2000000
	SUB HEAD 24: LIGHTING CONTROL SYSTEM						
24.00	LIGHTING CONTROL SYSTEM						
24.01	Supply, Installation, Testing & Commissioning of DALI Controller. Every Loop will control 64 Lights/ DALI Ballast and controller will control 192 Lights/ DALI Ballast.	Nos.	1	75795			75795
24.02	Supply, Installation, Testing & Commissioning of 6 Button Keypad having inbuilt proximate sensor, pattern lockable with IP22 protection and Multiple settings on one button.	Nos.	7	10692			74844
24.03	Supply, Installation, Testing & Commissioning of communication module for Keypad.	Nos.	7	10692			74844
24.04	Supply, Installation, Testing & Commissioning of 360 degree Ceiling recess mountable 360 degree multifunction sensor that combines motion detection (PIR), Infrared remote control reception (IR) and ambient light level detection (PE) into one device.	Nos.	20	16632			332640
24.05	Supply, Installation, Testing & Commissioning of System Power Supply to boost the system power.	Nos.	4	27800			111200
24.06	Supply, Installation, Testing & Commissioning of Network Gateway to extend the network.	Nos.	4	22335			89340
24.07	Supply, Installation, Testing & Commissioning of Standalone Ceiling Mounted Motion PIR sensor 360 degree.	Nos.	65	4337			281905
24.08	Supply, Installation, Testing & Commissioning of Standalone Wall Mounted Motion PIR sensor 90 degree.	Nos.	25	6891			172275
24.09	Supplying and fixing of Panel for Automation with Incoming Protection MCB 3P & Surge Arrestor and Outgoing MCB protection.	Nos.	10	40000			400000
24.10	Supplying and fixing of 2 Module GI Box for any Approved Make for Keypad.	Nos.	33	80			2640
24.11	Supplying and fixing of DALI Control Cable 2 core 0.75 sqm to connect DALI Ballast.	Metre	3000	24			72000

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
24.12	Supplying and fixing of Cat 6 cable to connect all Automation devices to create a network in meters.	Metre	2000	28			56000
	TOTAL SUB HEAD 24 LIGHTING CONTROL SYSTEM AS MENTIONED ABOVE						1743483
	SUBHEAD 25: OUT DOOR LIGHTING						
25.00	OUT DOOR LIGHTING						
25.01	Supply, erection, testing and commissioning of external swaged steel tubular pole with following specifications & items :						
	i 9.0 Mtrs. high swaged steel tubular pole with arm length around 1.5 Metre, the construction of the pole shall be as per IS:2713 - 1980 410 SP-30 with base plate 450 x 450 x 6 mm complete as per requirement with two coats of spray paints of approved shade.						
	ii 90 watts LED street light fixture in die cast aluminum body with 90 watts LED lamp complete with control gear, cover etc. similar to Compton Greeves s LSTN-90-CDL-A or approved equivalent including its wiring with 2X2.5 sq.mm. PVC insulated, FRLS copper conductor and 1.5 sqmm PVC insulated, FRLS copper earth wire from control box complete as required.						
	iii Suitable size 32 A DP MS Control box with 2 no. incoming and outgoing terminals and 2 nos. tap-out terminal with 6A DP MCB complete as required - 1 Set						
	iv Suitable number(s) 40mm dia Class-B GI Pipe(s) from above control box to upto 0.5 metre below ground level for power cable entry						
	v Providing foundation including excavation, shuttering, alignment of poles, casting etc. including lean concrete at the bottom as per CPWD/ BIS specifications.						
	vi The above installations shall be completed as CPWD specifications and as required						
	a. Steel Tubular Poles (9M) Single Arm as mentioned above	Set	40	29660			1186400
	b. Steel Tubular Poles (9M) same as above but for Double Arm as mentioned above	Set	20	39660			793200
25.02	Supply, installation, testing and commissioning of external post top lantern with following accessories and complete as required :						
	i 4m high (3.3m above ground) 80mm dia GI pole as approved, adopting socket at top for fixture mentioned below, base plate 300 x 300 x 6 mm and provision for mounting junction box etc. - 1 set.						
	ii 1 x 40 LED Post top lantern with 40W LED lamp (Crompton Greeves LPTO-40-CDL or equivalent) and its wiring with 2 x 2.5 sq.mm PVC insulated copper wire and 1.5 sqmm PVC insulated copper earth wire from control box .						
	iii Suitable size 20A DP MS Control box with 2 no. incoming and outgoing terminals and 2 nos. tap-out terminal with 1 nos. 5A HRC fuses complete 1 set.						
	iv Suitable number(s) 40mm dia Class-B GI Pipe(s) from above control box to upto 0.5 metre below ground level for power cable entry						

S.No.	Description.	Unit.	Quantity	Rate in Figures (Rs.)	(in	Rate in words (in Rs.)	Amount in Figures (Rs.)
v	Providing 400 x 400 x 1000 mm deep 1:3:6 ratio cement concrete including excavation shuttering alignment of poles casting etc. including 100mm thick lean concrete shall be provided at the bottom						
	Supply, installation, testing and commissioning of external post top lantern as mentioned above	Set	20	23600			472000
25.03	Supply, Installation, testing and commissioning of Post top lantern 1 x 40 Watts LED Post top lantern with 40 Watt LED lamp (Crompton Greeves LPTO-40-CDL or equivalent) and its wiring with 2 x 2.5 sq.mm PVC insulated copper wire and 1.5 sqmm PVC insulated copper earth wire from control box.	set	4	15600			62400
25.04	Supply, installation, testing and commissioning of bollard lamps 1 x 10 Watts LED Light Fixture (Crompton Greeves LBS1-10-CDI (LIARA) or equivalent) with control box - 1 set.	Each	40	9500			380000
	ROAD LIGHTING PANEL						
25.05	Supply, installation, testing and commissioning of following outdoor type with canopy, IP-54 protected MV cubicle type totally enclosed, free standing type, dust, damp and vermin proof, MV Panel, busbars, MV danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing switchgears complete as required.						
A	INCOMER:						
	100 Amps,415 volts, TP+NL, 35 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .						
	R, Y & B phase indicating lamp (LED type) with 2A control SP MCB.						
	ON, OFF, TRIP indication (LED Type)						
	Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.						
	1 Set of timer switch & 100A TP contactor with neutral link (for street lights control) .						
B	BUSBARS:						
	300 Amp TPN Aluminium busbars						
C	OUTGOING:						
i	20 Nos. 16 Amp 415 volts, DP MCB						
	ROAD LIGHTING PANEL AS MENTIONED ABOVE	Set	4	66900			267600
25.07	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Metre	500	34			17000
	TOTAL SUB HEAD 23: OUTDOOR LIGHTING AS MENTIONED ABOVE						3178600
	GRAND TOTAL FOR ALL ELECTRICAL WORKS						

**SUMMARY OF BILL OF QUANTITIES OF ELECTRICAL WORKS FOR CONSTRUCTION OF SUPER SPECIALITY BLOCK AT
IGMC,SHIMLA HIMACHAL PRADESH**

S.No.	Description	Amount In Figure (In Rs.)
1	SUB HEAD 1: HT SUB STATION	26919317
2	SUB HEAD 2: MAIN LT PANEL	16307300
3	SUBHEAD 3: DG SET & ACCESSORIES	25863900
4	SUBHEAD 4: RISING MAINS	5045342
5	SUB HEAD 5: MV PANELS	8312750
6	SUB HEAD 6: MCB DISTRIBUTION BOARDS.	1670037
7	SUBHEAD 7: UPS SYSTEM	3200000
8	SUB HEAD 8: WIRING	22119582
9	SUB HEAD 9: LIGHT FIXTURE AND FANS	14858366
10	SUB HEAD 10: TELEPHONE SYSTEM	4938090
11	SUBHEAD 11 CONDUITING FOR COMPUTER SYSTEM .	1123720
12	SUB HEAD 12: CONDUITING FOR TV OUTLETS	276320
13	SUBHEAD 13: ADDRESSABLE FIRE ALARM SYSTEM	6512725
14	SUB HEAD 14: PUBLIC ADDRESS SYSTEM	1441609
15	SUB HEAD 15: CCTV SURVEILLANCE SYSTEM	7894314
16	SUB HEAD 16: NURSE CALL SYSTEM	3423863
17	SUBHEAD 17: INVERTER	40000
18	SUB HEAD 18: ACCESS CONTROL AND BOOM BARRIER SYSTEM	1520751
19	SUB HEAD 19: LIFTS	27427500
20	SUB HEAD 20: LT CABLES	7871872
21	SUBHEAD 21: EARTHING	2973012
22	SUBHEAD 22 LIGHTNING PROTECTION	406364
23	SUBHEAD 23: SOLAR PHOTVOLTAIC POWER GENERATION	2000000
24	SUB HEAD 24: LIGHTING CONTROL SYSTEM	1743483
25	SUBHEAD 25: OUT DOOR LIGHTING	3178600
	GRAND TOTAL FOR ALL ELECTRICAL WORKS	197068817

BILL OF QUANTITIES (B.O.Q.) OF HVAC WORKS FOR PMSSY-SHIMLA							
Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
The prices are to be quoted in the below mentioned form and shall include the supply, installation, testing & commissioning at site of all the equipments, ancillary materials as specified and all such items what so ever which may be required to fulfill the intent and purpose as laid down in the specifications and or the drawings.							
The tenderer shall quote rates in figures and in words under column 6&7 and extend amount to column 8							
A)		EQUIPMENTS					
1.0	NDSR	AIR COOLED REVERSIBLE HEAT PUMP Scroll / Screw TYPE					
1.1		Air cooled type reversible heat pump suitable for cooling and heating mode operation, as per technical specification and requirements etc					
		a. Scroll /Screw compressors with motor.					
		b. Drive packages.					
		c. Mounting frames for all components					
		d. Air cooled condenser with accessories.					
		e. Chiller with accessories.					
		f. Refrigerant piping, fittings, accessories and valves etc.					
		g. Insulation of chiller and suction line.					
		h. First charge of refrigerant and oil.					
		i. Base frame with Vibration isolators.					
		j. Lot Victualic joints & rubber expansion joints etc. as required to complete the job.					
		k. Automatic capacity control arrangement.					
		l. Lot Safety controls, flow switches, pressure gauge, thermometer etc. as per specifications.					
		m. Suitable capacity motor with necessary insulation, starter panel complete with all necessary switchgears and control complete as required.					
		n. Necessary water drain & air purge valves wherever required.					
		o. Necessary lubrication device as per specifications complete.					
		p. Microprocessor based control panel complete with accessories as per specifications and BMS compatible BACNET / Modbus Protocol. All chillers shall have suitable IBMS card for Intigration.					
		Cooling Capacity : 150 TR, min COP 2.9					
		Heating Capacity : 300 kw (approx.)					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		Chiller water Flow : 360 USGPM					
		Chilled Water Leaving temp. 44 deg. F					
		Chilled Water Entering temp. 54 deg. F					
		Chiller fouling factor = 0.0005 (FPS units)					
		Air entering temperature : 35 degC					
		Hot water O / I temp : 50 / 40 degC					
		Refrigerent R - 410a/R134a					
		Operating range : -10deg C to 40 deg C (Suitable for running in Shimla conditions)					
		Necessary arrangement for switching to heating mode.					
		Complete water chilling machine as above. (2W+1S)	3	Nos	5028115		15084345
2.0		WATER CIRCULATION PUMPS					
2.1		Primary Chilled Water Pumps					
		Supply, installation, testing and commissioning of split casing end suction type centrifugal chilled water pump sets factory assembled and tested for rated efficiency mounted on a common base frame etc each capable of delivering specified flow rate complete with following as per specifications & schedule of equipments.					
		a. Pump with IP 55 TEFC induction motor with class F insulation, IE-3.					
		b. Channel base with vibration isolators, coupling, coupling guard etc.					
		c. Cladded insulation and anti corrosive coating inside and outside casing etc. of chilled water pump.					
		d. 2 Nos.- 150 mm dia dial type pressure gauge					
		e. Pumps shall be suitable for operation on 415+/- 10% Volts/ 3ph / 50 Hz/AC power supply.					
		f. Bellows in suction and discharge line for vibration isolation of suitable capacity.					
		The pump characteristic shall be as follows:					
2.1.1		Water flow rate= 360 USGPM					
		Head = 18 Metre WC					
		Primary chilled water pumps as described above. (2W+1S)	3	Nos	109868		329604
2.2		Secondary Pumps & Variable Speed Pumping System					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		Supply, installation, testing and commissioning of split casing type centrifugal chilled water recirculation pumps mounted on a common base etc each capable of delivering specified flow rate complete with following as per specifications & schedule of equipments.					
		a. Pump with IP 55 TEFC induction motor with class F insulation, IE-3.					
		b. Channel base with vibration isolators, coupling, coupling guard etc.					
		c. Cladded insulation and anti corrosive coating inside and outside casing etc. of chilled water pump.					
		d. 2 Nos.- 150 mm dia dial type pressure gauge					
		e. Pumps shall be suitable for operation on 415+/- 10% Volts/ 3ph / 50 Hz/AC power supply.					
		f. The price will include control software and networking hardware and software for integration and compatibility with BMS (BACNET Protocol).					
		g. All pumps to be provided with seperate VFD's (variable frequency drives). Separate control panel. Panel should also consist of cooling fan.					
		h. Electronic Differential Pressure Transmitters and separate PLC .					
		i. The cost will include making necessary flanged suction and delivery headers in C-Class MS					
		j. Complete set system to be mounted on a common MS base frame and shall follow following duty.					
		k. Bellows in suction and discharge line for vibration isolation of suitable capacity.					
		The pump characteristic shall be as follows:					
2.2.1		360 USGPM					
		Head = 22 Metre WC					
		Secondary chilled water pumps as described above (2W+1S)	3	Nos	313908		941724
3.0		Hot Water Generator					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		Supply, installation, testing & commissioning of Electric Hot Water Generator for winter heating/monsoon reheating system. Hot water generator shall be with IP 55 protection and complete with controls, sensors, control cabling ,piping and fittings, thermal insulation, base frame etc. as per specifications. HWG shall be BMS compatible with RS 485 communication port.					
3.1		Capacity : 300 KW Status : (2W)					
		Temp IN/OUT : 110/125 DegF	2	Nos.	536134		1072267
4.0		AIR HANDLING UNITS					
4.1		Supply, installation, testing and commissioning of sectional construction draw through type Air Handling Units (double skin type) of horizontal /vertical as specified & shown in schedule of equipment complete with the following :-					
		a. Fan Section and canvas connection, Mixing Box, Thermal break profile, humidifier section. (double skin type)					
		b. Centrifugal blower direct driven/ belt driven.					
		c. Coil section with cooling coil, heating coils as per specifications, minimum 2 bend GSS/PVC eliminators.					
		d. Pre filters with filter section in all AHUs.					
		e. Fine and hepa filters with filter section wherever specifically specified as per AHU schedule .Wherever fine/hepa filters are specified, item shall include factory fabricated double skin plenum of same specifications as AHU panels and complete with filter frameworks.					
		f. Drain pan, drain connection.					
		g. Squirrel cage induction IP 55 TEFC , Insulation class 'F', Duty S1 , IE-3 drive motor, drive arrangement, guard etc.					
		h. Necessary vibration isolators & supporting arrangement.					
		i. Fresh air intake arrangement, necessary water drain & air purge valves wherever required etc.					
		j. Canvass connections, necessary foundations, 2 nos pressure gauge, 2 nos thermometer etc					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		k. Controls for AHUs comprising of a set of PN-16 rating 2 Way pressure independent dynamic balancing cum control valve of required size fitted with modulating actuators having manual override facility on each AHU alongwith wiring for interconnections with 1.5 sq. mm Cu Conductor multicore armoured complete as required. The actuator shall have required shut off capability of minimum 4 bar rating. The acuator shall be compatible with BMS.The valve actuator shall be capable of accepting 2-10 volt DC, 4-20 mA electric signal and shall provide similar transduced feedback output signal to control system.					
		l. Pre Filter : 90% down to 10 micron, Fine filter : 99% down to 3 micron (MERV-14), HEPA filter 99.97% down to 0.3 micron (MERV-17).					
4.1.1		AH-GF-01 - 12500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.	484565		484565
4.1.2		AH-GF-02 - 17500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.	684465		684465
4.1.3		AH-GF-03- 3000 cfm/ 6RD Cooling Coil/135 mm static (with pre, fine) hepa filter on terminal by other agency	1	Nos.	202599		202599
4.1.4		AH-FF-01 -11 500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.	457840		457840
4.1.5		AH-FF-02 - 13000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.	542875		542875
4.1.6		AH-SF-01 - 12000cfm/ 6RD Cooling Coil/50 mm static (with pre filter)	1	Nos.	342030		342030
4.1.7		AH-SF-02 - 11000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.	459324		459324
4.1.8		AH-TF-01 - 12000cfm/ 6RD Cooling Coil/50 mm static (with pre filter)	2	Nos.	342030		684060
4.1.9		AH-4F-01 - 10500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.	462699		462699
4.1.10		AH-4F-02 - 14000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.	582288		582288
4.1.11		AH-4F-03 - 3000 cfm/ 6RD Cooling Coil/135 mm static (with pre, fine) hepa filter on terminal by other agency	1	Nos.	202599		202599
4.1.12		AH-5thF-01 - 12500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.	484565		484565

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
4.1.13		AH-5thF-02 - 8000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.	372670		372670
4.1.14		AH-5F-03, 5F-04, 5F-05, 5F-06 - 3000 cfm/ 6RD Cooling Coil/135 mm static (with pre, fine filter) hepa filter on terminal by other agency	4	Nos.	202599		810396
4.1.15		AH-6th F-01 - 16000cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.	687704		687704
4.1.16		AH-6th F-02 - 9500cfm/ 6RD Cooling Coil/80 mm static (with pre & fine filter)	1	Nos.	388192		388192
4.1.17		AH-6F-03, 6F-04, 6F-05, 6F-06 - 3000 cfm/ 6RD Cooling Coil/135 mm static (with pre, fine filter) hepa filter on terminal by other agency	4	Nos.	202599		810396
4.2		CEILING SUSPENDED UNITS					
		Supply, installation, testing and commissioning of draw through type Air Handling Units (double skin type) of ceiling suspended type as specified & shown in schedule of equipment complete with the following :-					
		a. Fan Section and canvas connection, Thermal break profile. (double skin type)					
		b. Centrifugal blower					
		c. Coil as per specifications.					
		d. Pre filters as required					
		e. Drain pan, drain connection.					
		f. Squirrel cage induction drive motor IP 55, TEFC , Insulation class 'F', duty S1, IE-3 drive arrangement, guard etc.					
		g. Necessary vibration isolators & supporting arrangement.					
		h. Fresh air intake arrangement,necessary water drain & air purge valves wherever required etc.					
		i. Canvass connections,suspension arrangement, 2 nos pressure gauge, 2 nos thermometer etc					
		j. Controls for AHUs comprising of a set of PN-16 rating 3-Way mixing cum diverting valve of required size having manual override facility on each AHU alongwith proportional thermostat & wiring for interconnections with 1.5 sq. mm Cu Conductor multicore armoured complete as required.					
		k. Pre Filter : 90% down to 10 micron, Fine filter : 99% down to 3 micron (MERV-14), HEPA filter 99.97% down to 0.3 micron (MERV-17).					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
4.2.1		CS-GF-01 - 5000cfm/ 4RD Cooling Coil / 50 mm static (with pre filter)	1	Nos.	168855		168855
5.0	NDSR	FAN COIL UNITS					
5.1		Supply, installation, testing and commissioning of horizontal type ceiling suspended FCU, each complete with 3 row deep chilled water cooling coil of copper tubes aluminium fins construction, centrifugal fan, 3 speed motor, aluminium cleanable filters insulated condensate drain pan, coil piping connections, condensate drain connection. Complete controls comprising solenoid valve, three speed selector switch, room thermostat with display and on-off switch in chilled water lines at each fan coil unit. FCU shall be complete with vibration isolator, wiring complete as required, with ball valve, ball valve with strainer as required as per specification & drawings with the following capacities:-					
5.1.1		1.0 TR	2	Nos.	17696		35392
5.1.2		1.5 TR	2	Nos.	20358		40716
5.1.3		2.0 TR	2	Nos.	22237		44474
5.1.4		2.5 TR	2	Nos.	24116		48232
6.0		SPLIT AIR CONDITIONERS					
		Supply , installation , testing and commisioning of HI wall split air conditioner comprising of the following.					
		a) Outdoor condensing Units					
		b) Indoor Evaporative Units					
		c) Interconnecting Refrigerant and drain piping with insulation wherever required, refrigerant and oil. The unit shall include refrigerant piping, power cabling and drain piping.					
		c) Safety and operational controls					
		e) Hi-wall splits shall be suitable for single phase power supply and complete with suitable rating voltage stablizer.					
		f) Mounting arrangement and structural supports for outdoor unit are included.					
		g) The units should have 3 star rating from BEE.					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
6.1		Capacity : 2.0 TR	4	Nos.	55216		220864
7.0		Inline Fans/ Propeller Fans/ Ventilation fans					
7.1		Supply, installation, testing and commissioning of Inline Fans as shown in drawings and as per equipment schedule .Each fan shall be complete with centrifugal blowers, totally enclosed fan cooled motor. Fan motor shall be suitable for single phase, 220 +/- 6% V, 50 Hz AC supply. Item shall be complete with starter & cabling.					
		Inline Fans					
7.1.1		Duty: Toilet Exhaust					
		Air Quantity :600 CFM	6	Nos.	21723		130338
		Static Pressure :20 mm wg					
7.1.2		Duty: Toilet/ Dirty corridor Exhaust					
		Air Quantity :1000 CFM	21	Nos.	28520		598920
		Static Pressure :20 mm wg					
7.2		Supplying, installing, testing and commissioning of direct driven Propeller fan for exhaust air as shown in drawings. Each fan shall be complete with permanent split capacitor or shaded pole motor, mounting plate, accessories like wire guard, bird screen and fixed louvers for weather protection as required. Fan selection arrangement and Electrical characteristics shall be as follows:					
7.2.1		300 mm dia 1380 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	6	Nos.	2663		15978
7.2.2		450 mm dia 1380 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	2	Nos.	6025		12050
		Ventilation Fans					
7.3		Tube Axial Flow Fans					
		Supply, installation,testing and commisioning of tube axial flow fans as shown in drawings, Each fan shall be direct driven. Fan motor shall be suitable for 3 Phase, 415+/- 10% V, 50Hz AC supply with IP 55 protection, class 'F' insulation and IE-3 class. Fan shall be complete with gravity louvers, vibration isolators.					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
7.3.1		Duty: Lift well pressurisation Air Quantity : 7500 CFM					
		Static Pressure : 25 mm wg	6	No.	59653		357918
7.3.2		Duty: Lift lobby pressurisation Air Quantity : 11500 CFM					
		Static Pressure : 25 mm wg	3	No.	75566		226698
		Floor / Services ventilation (Fresh Air Supply)					
7.4.3		Air Quantity : 2000 CFM, 25 mm st. pr.	2	Nos.	45733		91466
7.3.4		Air Quantity : 2500 CFM, 25 mm st. pr.	4	Nos.	51048		204192
7.4.5		Air Quantity : 3500 CFM, 25 mm st. pr.	3	Nos.	52911		158733
7.3.6		Air Quantity : 4000 CFM, 25 mm st. pr.	5	Nos.	52911		264555
7.3.7		Air Quantity : 5500 CFM, 25 mm st. pr.	6	Nos.	54330		325980
7.3.8		Air Quantity : 7200 CFM, 25 mm st. pr.	11	Nos.	59653		656183
7.4	NDSR	Tube Axial Fans (Fire rated)					
		Supply, installation, testing and commissioning of tube axial flow fans as shown in drawings, Each fan shall be direct driven.. Fan motor shall be suitable for 3 Phase, 415+/- 10% V, 50Hz AC supply with IP 55 protection, class H insulation and IE-3 class. Fan shall be complete with vibration isolators, gravity louvers. Fan shall be 250 deg C, 2hrs fire rated.					
		Smoke exhaust on floors					
7.4.1		Air Quantity : 2000 CFM, 25 mm st. pr.	3	Nos.	51677		155031

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
7.4.2		Air Quantity : 2500 CFM, 25 mm st. pr.	3	Nos.	53964		161892
7.4.3		Air Quantity : 3500 CFM, 25 mm st. pr.	3	Nos.	56237		168711
7.4.5		Air Quantity : 4000 CFM, 25 mm st. pr.	4	Nos.	56237		224948
7.4.6		Air Quantity : 5500 CFM, 25 mm st. pr.	6	Nos.	57968		347808
7.4.7		Air Quantity : 7200 CFM, 25 mm st. pr.	10	Nos.	59653		596530
7.5	NDSR	Centrifugal Fans					
		Supply, installation, testing and commissioning of SISW CENTRIFUGAL FANS for ventilation system. Each fan shall be complete with TEFC type IP 55 motor with class F insulation, belt drive, pulley mounted on motor & fan shaft, belt guard, motor mount, casing and vibration isolators as per specifications and shop drawings. All expose fan shall be covered with GI housing as per approved shop drawings to protect fan and motors from weather.Fan motor shall be suitable for 3 Phase, 415+/- 10% V, 50Hz AC supply . Fan shall be complete with gravity louvers.					
		Duty: Laundry ventilation (exhaust)					
7.5.1		Air Quantity : 6000 CFM	1	Nos.	114589		114589
		Static Pressure : 30 mm wg					
		Duty: Kitchen ventilation (supply)					
7.5.2		Air Quantity : 7200 CFM	1	Nos.	122360		122360
		Static Pressure : 35 mm wg					
8.0		Dry Scrubber for Kitchen					
		Supply, instalation, testing and commissioning of Electrostatic Precipitation based Dry Type Scrubber Unit complete with hanging arrangements, supports , hangers etc as per specification and drawings.					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
8.1		Dry type scrubber, capacity 8500 CFM, suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	1	No.	503890		503890
9.0	NDSR	Pan type Humidifier					
		Supply, installation, testing and commissioning of electric pan type humidifiers in each Air Handling Rooms to provide humidification during winter months heating operation. The humidifier shall evaporate 12 liters water per hour and complete with all required water valves incoming MCB, humidistat and, electrical & control wiring and earthing as required.					
9.1		6 KW	14	Sets	65591		918269
10.0	NDSR	MONSOON REHEAT ARRANGEMENT FOR OTs AND ICUs					
		Supply, installation, testing & commissioning of monsoon reheating arrangements fixed in ducts/ plenums complete with strip heaters, fixing frame work, insulators, fire protection insulation in duct, controls such as heating thermostats, humidistats etc. The heaters banks shall be controlled by independent thermostats/ humidistats through electro magnetic type contactors and safety thermostats/ geysers as specified complete with wiring for interconnections with 1.5 sq.mm copper conductor multi core armoured cable. The heater capacity shall be as per schedule of equipment and specifications, drawing etc.					
10.1		3Kw(1.5 KW x 2 banks)	14	Sets	22915		320813
11.0		EXPANSION TANK					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		Supply, installation, testing and commissioning of pressurised closed type Expansion tank with air seperator and dosing pumps (1w+1s) etc. The expansion tank shallbe complete with all necessary valves, vent connection. Quoted price shall include of 50 mm thick 32 kg/mt cu density TF quality Expanded polystyrene insulation and cladded with 24 gauge aluminum sheet for chilled water tank and glass wool insulation as per specifications with aluminium sheet cladding for Hot water tak. Tank shall be equiped with 15 mm dia vent, 450 mm dia manhole with cover, 40 mm dia make up with overflow connection (ball valve shouldbe provided at the make up line), 50 mm dia drain and over flow withnecessary valves and 50 mm dia insulated pipe connection to nearestchilled water return line					
11.1		2000 ltrs.	1	No.	180000		180000
	B)	PIPING					
12.0	DSR	INSULATED CHILLED WATER PIPING (expanded polystrene insulation)					
12.1	16.2	Supplying, laying/ fixing, testing and commissioning of following nominal sizes of chilled water piping plumbing inside the building (with necessary clamps, vibration isolators and fittings but excluding valves, strainers, gauges etc.) duly insulated with fire retardant quality expanded polysterene moulded pipe section of density 20 kg/cu.m after a thick coat of cold setting adhesive (CPRX compound) wrapping with 500g polythene faced hessain and finally applying 0.63 aluminium sheet cladding complete with type3, grade 1 roofing feltstrip (as per IS:1322 as amended up to date) at joints repairing of damage to building etc. as per specifications and as required complete in all respect. Note: The Pipes of sizes 150mm & below shall be M.S. 'C' class as per IS : 1239 and pipes size above 150mm shall be welded black steel pipe heavy class as per IS: 3589, from minimum 6.35mm thick M.S. Sheet for pipes upto 350 mm dia. and from minimum 7mm thick MS sheet for pipes of 400 mm dia and above.					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
12.1.1	16.3.5	200 mm dia (75 mm insulation)	150	RM	5069		760350
12.1.2	16.3.6	150 mm dia (75 mm insulation)	30	RM	3234		97020
12.1.3	16.3.7	125 mm dia (50 mm insulation)	250	RM	2819		704750
12.1.4	16.3.8	100 mm dia (50 mm insulation)	100	RM	2377		237700
12.1.5	16.3.9	80 mm dia (50 mm insulation)	200	RM	1824		364800
12.1.6	16.3.10	65 mm dia (50 mm insulation)	400	RM	1574		629600
12.1.7	16.3.11	50 mm dia (50 mm insulation)	350	RM	1286		450100
12.1.8	16.3.12	40 mm dia (50 mm insulation)	120	RM	1063		127560
12.1.9	16.3.13	32 mm dia (50 mm insulation)	80	RM	937		74960
12.1.10	16.3.14	25 mm dia (50 mm insulation)	25	RM	829		20725
12.1.11	NDSR	20 mm dia (50 mm insulation)	40	RM	725		29000
13.0	DSR	INSULATED VALVES & STRAINERS					
		Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the chilled water plumbing duly insulated to the same specifications as the connected piping and adequately supported as per specifications.					
13.1	16.7.1	Butterfly valves (Manual) : with C I body SS Disc, Nitrile Rubber Seal & O- Ring PN 16 pressure rating for chilled water/ hot water circulation as specified					
13.1.1	16.7.1.2	200 mm dia.	2	Nos	8000		16000
13.1.2	16.7.1.2	150 mm dia.	2	Nos	6625		13250
13.1.3	16.7.1.3	125 mm dia.	18	Nos	5780		104040
13.1.4	16.7.1.4	100 mm dia.	4	Nos	5330		21320
13.1.5	16.7.1.5	80 mm dia.	2	Nos	3719		7438
13.1.6	16.7.1.6	65 mm dia	8	Nos	3351		26808

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
13.1.7	16.7.1.7	50 mm dia.	18	Nos	3050		54900
13.1.8	16.7.1.8	40 mm dia.	2	Nos	2686		5372
13.1.9	NDSR	32 mm dia	20	Nos	2200		44000
13.2	16.7.2	Balancing valves with built in measuring facility with C I body flanged construction with EPDM coated disc with long pitch with protected out pipe insulation & PN 16 pressure rating for chilled / hot water circulation as specified.					
13.2.1	16.7.2.3	125 mm dia.	3	Nos	18608		55824
13.2.2	16.7.2.4	100 mm dia.	2	Nos	11945		23890
13.2.3	16.7.2.5	80 mm dia.	1	Nos	7395		7395
13.2.4	16.7.2.6	65 mm dia.	4	Nos	7101		28404
13.2.5	16.7.2.7	50 mm dia.	9	Nos	6386		57474
13.2.6	16.7.2.8	40 mm dia.	2	Nos	3175		6350
13.2.6	16.7.2.9	32 mm dia.	10	Nos	2900		29000
13.3	16.7.3	Non return/Check valves : with duel plate of C I body SS plates vulcanized NBR seal flanged end & PN 16 pressure rating for chilled / hot water circulation including insulation as specified.					
13.3.1	16.7.3.3	125 mm dia.	6	Nos	5163		30978
13.4	16.7.4	Y- strainers of Ductile CI Body flanged ends with stainless steel strainer for chilled / hot water circulation including insulation as specified.					
13.4.1	16.7.4.3	125 mm dia.	6	Nos	9880		59280
13.4.2	16.7.4.4	100 mm dia.	2	Nos	6918		13836
13.4.3	16.7.4.5	80 mm dia.	1	Nos	5026		5026

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
13.4.4	16.7.4.6	65 mm dia	4	Nos	4434		17736
13.4.5	16.7.4.7	50 mm dia	9	Nos	3516		31644
13.4.6	16.7.4.8	40 mm dia	2	Nos	2478		4956
13.4.7		32 mm dia	10	Nos	2300		23000
13.5	NDSR	Providing and fixing in position the following Gate Valves duly insulated as per specifications:					
13.5.1		50 mm dia Valves	2	Nos.	2500		5000
13.5.2		40 mm dia Valves	2	Nos.	2000		4000
13.5.3		32 mm dia Valves	2	Nos.	1800		3600
13.6	NDSR	Auto Air Vent Valves					
13.6.1		15 mm dia	12	Nos.	850		10200
13.6.2		20 mm dia	10	Nos.	1000		10000
13.6.3		25 mm dia	10	Nos.	1200		12000
13.7	NDSR	Ball Valve with strainer					
13.7.1		25 mm	6	Nos.	2100		12600
13.7.2		20 mm	6	Nos.	2000		12000
13.8	NDSR	Ball valve without strainer					
13.8.1		32 mm	5	Nos.	1200		6000
13.8.2		20 mm	5	Nos.	1000		5000
13.9		Supply, installation, testing and commissioning cooling-heating thermostats :-					
13.9.1		For AHUs	25	Nos.	4238		105950
13.10	NDSR	DRAIN PIPING					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		Supply, laying/fixing, testing and commissioning of G.I. medium class ERW piping confirming to IS:1239 with necessary clamps, supports, anti vibration mountings, hangers and fittings such as bends, tees, reducers etc. duly insulated with nitrile rubber insulation and finally applying 0.63 mm aluminium cladding as per specifications for condensate drain from air handling units and chillers etc.					
13.10.1		50 mm dia	20	RM	674		13480
13.10.2		40 mm dia	40	RM	524		20960
13.10.3		32 mm dia	80	RM	460		36800
13.10.4		25 mm dia	50	RM	375		18750
C)		<u>AIR DISTRIBUTION</u>					
14.0	DSR	GSS DUCTING					
14.1	16.12.1	Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.					
14.1.1	16.12.1.4	Thickness 1.25 mm sheet	200	Sqm.	1278		255600
14.1.2	16.12.1.3	Thickness 1.00 mm sheet	1400	Sqm.	1014		1419600
14.1.3	16.12.1.2	Thickness 0.80 mm sheet	3800	Sqm.	905		3439000
14.1.4	16.12.1.1	Thickness 0.63 mm sheet	7500	Sqm.	739		5542500
14.1.5		Fire Rated Smoke Exhaust GSS duct with all the accessories (250Deg 2hrs) with fire resistant paint approved by CBRI or equivalent and the supporting arrangement shall be strong enough to with stand fire conditions.	1000	Sqm.	1800		1800000
15.0	NDSR	ALUMINIUM DUCTING					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
15.1		Supply, fabrication, installation and testing of aluminium ducts in accordance with the approved shop floor drawing and specifications. Material should confirm to IS 737 latest edition.					
15.1.1		Thickness 0.80 mm sheet	1200	Sqm.	765		918000
15.1.2		Thickness 1.00 mm sheet	200	Sqm.	956		191200
16.0	DSR	FIRE DAMPERS					
16.20		Supplying, Fixing,testing and commissioning of fire dampers in supply air duct/main branch and return air path as and where required of required sizes i/c control wiring,the damper shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be inbuilt mechanism and not externally mounted. The damper shall also be closed in the event of fire signal complete as required and as per specifications.					
16.1	16.20.1	Fire/smoke Damper	45	Sqm	7103		319635
16.2	16.20.2	Actuator	60	sets	6604		396240
17.0	DSR	VOLUME CONTROL DAMPERS					
17.1	16.13	Supply, installation, testing and commissioning of GI volume control duct damper complete with neoprene rubber gaskets, nuts, bolts, screws linkages, flanges etc, as per specifications.	75	Sqm.	5463		409725
18.0	DSR	CEILING DIFFUSERS					
18.1	16.17	Supplying, fixing testing commissioning of supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removable core.	110	Sqm.	8686		955460
18.2	16.18	Supplying, fixing testing commissioning of Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring & removable core.	50	Sqm.	5619		280950
19.0	DSR	GRILLES					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		Supply, installation, testing and balancing of supply/return air grilles with/without volume control dampers of powder coated aluminium construction suitable for installation in walls, false ceiling boxing etc as per specifications and drawings.					
19.1	16.15	Supplying & fixing of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers as per specifications.	30	Sqm.	7132		213960
19.2	16.16	Supplying & fixing of powder coated extruded aluminium Return Air Grills with louvers but without volume control dampers complete as required.	35	Sqm.	4065		142275
20.0	NDSR	LINEAR GRILLES					
		Supply, installation, testing and balancing of air linear grilles of powder coated aluminium construction suitable for installation in walls/false ceiling, boxing etc as per specifications and drawings.	70	Sqm.	4706		329420
21.0	NDSR	GRILLE DAMPERS					
		Supply, installation and balancing of aluminium construction volume control dampers for linear grills.	35	Sqm.	3797		132895
22.0	NDSR	LAMINAR FLOW DIFFUSERS					
		Providing & fixing of 18swg aluminium powder coated non-respiratory 100% air tight laminar flow diffusers. LFDs shall have 50% perforation. The perforated front face is openable hinge type complete with key operated opposed blade dampers from front.					
22.1		Size: 1200 x 600	24	Nos.	11913		285919
23.0	NDSR	FRESH AIR GRILLES with bird screen					
		Supply, installation, testing, commissioning and balancing of fresh air opening comprising of powder coated extruded aluminium louvers with bird screen, projection with frame and volume control damper with lever mounting arrangement etc. as per specifications and drawings.	25	Sqm.	8300		207500

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
24.0	DSR	DUCT INSULATION					
24.1	16.23	Supplying and fixing of following thickness duly laminated aluminum foil of mat finish closed cell Nitrile rubber (Class "O") insulation on existing duct after applying suitable adhesive for Nitrile rubber. The joints shall be sealed with 50 mm wide and 3 mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required.					
24.1.1	16.23.1	19 mm	13000	Sqm.	821		10673000
24.1.2	16.23.2	25 mm	300	Sqm.	1034		310200
25.0		ACOUSTIC					
25.1	DSR	DUCT ACOUSTIC LINING					
	16.21	Supply and fixing of acoustic lining of supply air duct and plenum with 25 mm thick resin bonded glass wool having density of 32 kg/m ³ , with 25 mm X 25 mm GI section of 1.25 mm thick, at 600 mm centre to centre covered with Reinforced Plastic tissue paper and 0.5 mm thick perforated aluminum sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, CPRX compound etc. complete as required and as per specifications.	200	Sqm.	551		110200
		Note:- No lining inside supply / return duct or plenum shall be done if the airside system is equipped with fine, hepa filters.					
D)		ELECTRICAL					
26.0	NDSR	MAIN HVAC PANEL					
		Supply, installation, testing and commissioning of A/C Panel, Type Tested Assembly (TTA), as per IEC 61439-1&2 cubicle type, totally enclosed, free standing type, dust, damp and vermin proof panel, powder coated, made up of CRCA sheet, complete with aluminum busbars, danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, necessary interlocking, and having incoming and outgoing switchgears as mentioned below. Complete as per technical specifications and as required.					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		Note :					
	i	All ACBs shall have spare contacts					
	ii	All ACBs should have Icw =Ics=Icu=50 KA for 1 sec					
	iii	All MCCBs shall have Ics=Icu=100%					
	iv	Separate fault indication for O/L, S/C, & E/F to be provided on Panel Door for all outgoing having microprocessor based MCCB					
	v	All indication Lamps will be LED Type .					
	vi	All starters of this panel shall be provided with digital ampere meter with suitable CTs, thermal overload relay, inbuilt/separate single phase preventer, contactors, timers, spare NO-NC contacts, push buttons, ON, OFF, TRIP indication (LED Type) and potential free contacts and relay for interlocking to FDA etc. complete as required.					
	vii	100 VA transformer 220v/24v AC for control wiring with 10 no.s 6A SP MCB 10 KA in all AHU panel is also in the scope of supply					
26.1		Main/ Emergency Air-conditioning MCC in plant room					
	A	INCOMER					
	i	2 No. ACB Panels each having following:					
		1000A , 415 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & Earth Fault trip and lockable trip push button.					
		R, Y & B Phase indicating lamps (LED type) with 6A control SP MCBs.					
		Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.					
		Push button to Close the ACB.					
		1 Digital multifunction meter with suitable CTs.					
	B	BUSBARS					
		TPN busbars of aluminium with temperture rise of 40 degree celsius over and above ambient temperture of 45 degree celsius.					
	C	Bus Coupler					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
	i	1 No. ACB Panels each having following:					
		1000A, 415 V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & Earth Fault trip and lockable trip push button.					
		Indicating lamps (LED Type) with 6A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB.					
		Push button to CLOSE the ACB.					
		1 Set of Digital Ammeter with ASS and CTs.					
	D	OUTGOING					
	i	4 Nos. MCCB feeder as per following details/ specifications: For Water Chilling Machines					
		630 Amp, 415 volts, 50 KA, Four Pole, MCCB with Microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection.					
		Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
		Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
		Digital ammeter with selector switch with one set Suitable C.Ts.					
	ii	2 Nos. MCCB feeder as per following details/ specifications: For Hot Water Generators					
		400 Amp, 415 volts, 50 KA, Four Pole, MCCB with Microprocessor based release having variable current settings of O/L, S/C & inbuilt E/F protection.					
		Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
		Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
		Digital ammeter with selector switch with one set Suitable C.Ts.					
	iii	3 Nos. MCCB feeder as per following details/ specifications:					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		63 Amp 415 volts, ,50 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
		3 Phase, fully automatic Star Delta Starter for 10 HP primary chilled water pumps.					
	iii	3 Nos. MCCB feeder as per following details/ specifications:					
		63 Amp 415 volts, ,50 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
		3 Phase, fully automatic Star Delta Starter for 15 HP Secondary chilled water pumps.					
	iv	4 Nos. MCCB feeder as per following details/ specifications:					
		63 Amp 415 volts, ,50 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
		Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
		Digital ammeter with selector switch with one set Suitable C.Ts.					
	iv	4 Nos. MCCB feeder as per following details/ specifications:					
		32 Amp 415 volts, ,50 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		Extended rotary operating mechanism with door interlock, defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
		Indicating lamps (LED Type) with 6A protection MCBs to indicate ON, OFF, TRIP.					
		Digital ammeter with selector switch with one set Suitable C.Ts.					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		Main HVAC panel Complete as above	1	Panel	2200000		2200000
26.2	NDSR	AHU Distribution Panels					
		Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, wall mounted/Free standing type, powder coated, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, and having following incoming and outgoing switchgears complete as per technical specification and as required.					
		NOTE					
	i	All MCCBs shall have Ics=Icu=100%					
	ii	100 VA transformer 220v/24v AC for control wiring with 10 no.s 6A SP MCB 10 KA in all AHU panel is also in the scope of supply					
	iii	All starters shall be provided with digital ampere meter with suitable CTs, thermal overload relay, inbuilt/separate single phase preventer, contactors, Timers, spare NO-NC contacts, Push Buttons ON, OFF, TRIP indication (LED Type) and potential free Contact & relays for interlocking to FDA etc. complete as required.					
	iv	All indication Lamps will be LED Type.					
	v	All MCCBs shall have extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
26.2.1		AHP- GF-01,FF-01,2F-01,3F-01,4F-01,5F-01,5F-02,6F-01					
		INCOMER :					
		1 nos. 100 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.					
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		Digital ammeter with selector switch with one set Suitable C.Ts.					
		Bus Bar					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		300 A TPN Aluminium bus bar 415V , 50 Hz.					
		OUTGOINGS :					
	i	1 set - 63 A, 415 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.					
		3 Phase, fully automatic DOL Starter for 10 HP fan motor as required.					
	ii	1 set - 32 A, 415 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.					
		3 Phase, fully automatic DOL Starter for 5 HP fan motor as required.					
	iii	3 set - 16 A, 415 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.					
		3 Phase, fully automatic DOL Starter for 1-3 HP Ventilation fan motor as required.					
		Complete panel as above	8	Panel	78500		628000
26.2.2		AHP- OT					
		INCOMER :					
		1 no 320 Amp, 415 volts, 35 KA, Four Pole MCCB Microprocessor based release with variable current settings of O/L, S/C, E/F.					
		R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.					
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		Digital ammeter with selector switch with one set Suitable C.Ts.					
		Bus Bar					
		500 A TPN Aluminium bus bar 415V , 50 Hz.					
		OUTGOINGS :					
	i	5 set - 32 A, 415 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.					
		3 Phase, fully automatic DOL Starter for 5/7.5 HP AHU motor as required.					
	ii	2 set - 32 A, 415 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker for Humidifier/ Monsoon Reheater as required.					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
	iii	3 set - 16 A, 415 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.					
		3 Phase, fully automatic DOL Starter for 1-3 HP Ventilation fan motor as required.					
		Complete panel as above	3	Panel	154600		463800
26.2.3		AHP-GF-2, FF-02,3F-02,4F-02,6F-02					
		INCOMER :					
		1 nos. 100 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.					
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		Digital ammeter with selector switch with one set Suitable C.Ts.					
		Bus Bar					
		300 A TPN Aluminium bus bar 415V , 50 Hz.					
		OUTGOINGS :					
	i	1 set - 63 A, 415 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.					
		3 Phase, fully automatic DOL Starter for 15 HP AHU motor as required.					
	ii	3 set - 16 A, 415 volts, 35 KA C- Curve, Four Pole, Miniature Circuit Breaker.					
		3 Phase, fully automatic DOL Starter for 1-3 Ventilation fan motor as required.					
		Complete panel as above	5	Panel	74500		372500
26.2.4		AHP- Terrace					
		INCOMER :					
		1 nos. 200 Amp 415 volts, 35 KA FP MCCB with thermal magnetic release having variable current settings of O/L, S/C protection.					
		R,Y&B phase indicating lamp (LED type) with 6A control SP MCB & ON, OFF, TRIP Indication.					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		Digital ammeter with selector switch with one set Suitable C.Ts.					
		Bus Bar					
		300 A TPN Aluminium bus bar 415V , 50 Hz.					
		OUTGOINGS :					
	i	5 set - 32 A, 415 volts, 10 KA C- Curve, Four Pole, Miniature Circuit Breaker.					
		5 Phase, fully automatic DOL Starter for 5/7.5 HP AHU/Ventilation fan motor as required.					
	ii	5 set - 16 A, 415 volts, 10 KA C- Curve, Four Pole, Miniature Circuit Breaker.					
		5 Phase, fully automatic DOL Starter for 2 HP Ventilation fan motor as required.					
		Complete panel as above	1	Panel	126000		126000
26.3		FAN STARTER PANEL - DOL / STAR DELTA STARTER					
		Supply, installation, testing & commissioning of Fan Starter Panel with following details :					
		Each Fan Starter Panel shall have :					
	a.	14G CRCA Powder Coated panel enclosure with earthing studs & hinged locable doors, suitable for 415V, 3 Phase, 4 wire, 50Hz system.					
	b.	Type-II co-ordination switchgear.					
	c.	Incomer switch shall be TP MPCB of required rating & fault withstand capacity. MPCB shall be with overload & short circuit protection.					
	d.	R,Y,B LED Type Phase indication lamps with control MCB's.					
	e.	Auto / Manual Selector switch & ON & OFF Push buttons for manual operation & terminals for BMS wiring.					
	f.	ON' Indication LED Type lamp with control MCB.					
	g.	DOL Starter / Contactor for motors upto 7.5HP, with 2 NO + 2 NC Auxiliary contacts.					
	h.	Star-Delta starter / contactors / timers for motors beyond 7.5HP, with 2 NO + 2 NC Auxiliary contacts.					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
	i.	All internal control & power wiring.					
	j.	Voltage operated 'SPP' (Single Phasing Preventor) for 10HP & above rating motors.					
	k.	CT's (3 Nos. for more than 5HP motors) & single CT for motors upto 5HP for metering purposes. CT's shall be of required class & burden.					
	l.	Digital VA Meter.					
	m.	Control terminals / linkage / interlocking with fire detection system & fire dampers, so that Fresh air Fan motor trips on receiving a fire signal & normal & smoke exhaust fans start on receiving a fire signal. Manual control shall also be possible through an override.					
		LIFTWELL PRESSURIZATION FAN					
26.3.1		Fan Starter Panel for up to 3 HP Motor	6	Nos.	18000		108000
26.3.2		Fan Starter Panel for 5 HP Motor	4	Nos.	22682		90728
26.3.3		Fan Starter Panel for 7.5 HP Motor	2	Nos.	27583		55166
27.0		CABLING					
27.1	NDSR	LT CABLES					
		Supply of following sizes of 1.1 kV grade multicore aluminium conductor PVC sheathed armoured XLPE cable as per IS 7098.					
27.1.1		3.5 Core 25 Sqmm.	700	Metre	232		162400
27.1.2		3.5 Core 35 Sqmm.	50	Metre	287		14350
27.1.3		3.5 Core 50 Sqmm.	400	Metre	369		147600
27.1.4		3.5 Core 95 Sqmm.	100	Metre	622		62200
27.1.5		3.5 Core 185 Sqmm.	250	Metre	1146		286500
27.1.6		3.5 Core 240 Sqmm.	300	Metre	1445		433500
27.1.7		3.5 Core 300 Sqmm.	300	Metre	1771		531300
27.1.8		4 Core 16 Sq mm	100	Metre	189		18900
27.1.9		4 Core 10 Sq mm	100	Metre	166		16600
27.1.10		4 Core 6 Sq mm	200	Metre	132		26400

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
27.1.11		4 Core 4 Sqmm.	200	Metre	114		22800
27.1.12		3 Core 4 Sqmm.	600	Metre	100		60000
27.2	7.8	Laying and fixing of PVC insulated and PVC sheathed/ XLPE powe cable of 1.1 KV grade of following size on cable tray as required.					
27.2.1	7.8.1	Up to 35 sq.mm (clamped with 1mm thick saddle)	1950	Metre	20		39000
27.2.2	7.8.2	Above 35 Sq mm and upto 95 Sq mm (clamped with 25 X 3mm MS flat clamp).	550	Metre	48		26400
27.2.3	7.8.3	Above 95 Sq mm and up to 185 Sq mm (clamped with 25/40x3mm MS flat clamp).	250	Metre	59		14750
27.2.4	7.8.4	Above 185 Sq mm and up to 400 Sq mm (clamped with 40x3mm MS flat clamp).	600	Metre	91		54600
27.3	9.1	Supplying and making end termination with brass compression gland and Aluminium lugs for following sizes of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.					
27.3.1	9.1.20	3.5 Core 25 Sqmm.	25	Each	247		6175
27.3.2	9.1.21	3.5 Core 35 Sqmm.	50	Each	270		13500
27.3.3	9.1.22	3.5 Core 50 Sqmm.	50	Each	342		17100
27.3.4	9.1.24	3.5 Core 95 Sqmm.	25	Each	466		11650
27.3.5	9.1.27	3.5 Core 185 Sqmm.	15	Each	784		11760
27.3.6	9.1.29	3.5 Core 240 Sqmm.	10	Each	969		9690
27.3.7	9.1.30	3.5 Core 300 Sqmm.	16	Each	1086		17376
27.3.8	9.1.33	4 Core 16 Sq mm	10	Each	245		2450
27.3.9	9.1.32	4 Core 10Sq mm	20	Each	193		3860
27.3.10	NDSR	4 Core 6 Sq mm	20	Each	170		3400
27.3.11	NDSR	4 Core 4 Sqmm.	20	Each	165		3300
27.3.12	NDSR	3 Core 4 Sqmm.	30	Each	145		4350
28.0	NDSR	CABLE TRAYS					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		Supply & installation of following sizes of perforated MS cable trays including horizontal & vertical bends, reducers, tees, cross members and other accessories as required and duly supported from the ceiling/wall/floor with MS suspenders/supports and including painting etc. as required					
28.1		300 mm widthx50 mm deep x1.6 mmthickness	200	Mtr	1329		265800
28.2		200 mm widthx50 mm deep x1.6 mmthickness	100	Mtr	1101		110100
28.3		150 mm widthx50 mm deep x1.6 mmthickness	400	Mtr	880		352000
28.4		100 mm widthx50 mm deep x1.6 mmthickness	300	Mtr	760		228000
29.0		Fabrication and Installing following size of Ladder type M.S Cable tray including Horizontal and vertical bends, reducers, tee, crossmember and other accessories as required and duly Suspended from the ceiling with M.S 12 mm rod suspenders and including painting etc. as required.					
29.1		450 mm width x 62.5 mm depth x 2.0 mm thickness	100	Mtr	2042		204200
30.0	DSR	EARTHING					
30.1	5.4	Earthing with GI plate 600mmX600mmX6mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/coke and salt as required.	4	Set	4490		17960
30.2	5.15	Providing and fixing 25mmX5mm GI strip on surface or in recess for connections etc. as required.	300	Mtr	142		42600
30.3	NDSR	Providing and fixing GI earth strip on walls/ trenches complete as per specifications and as required.					
30.3.1		50mmx 5mm	150	Mtr	140		21000
30.3.2		25mm x 3mm	200	Mtr	125		25000

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
30.4		Providing and fixing earth wire of complete as per specifications as required.					
30.4.1	5.18	6 SWG wire	200	Mtr	23		4600
30.4.2	NDSR	8 SWG wire	600	Mtr	60		36000
31.0	NDSR	CONTROL CABLING					
		Supply, laying, effecting proper connections, testing & commissioning of 1.5 sq.mm. PVC insulated copper multicore cables from AHU's and AC equipments to central control console					
31.1		10 core cable	500	Mtr	452		225782
31.2		8 core cable	2500	Mtr	336		839364
31.3		6 core cable	200	Mtr	282		56303
31.4		3 core cable	200	Mtr	255		51000
31.5		2 core cable	500	Mtr	255		127500
32.0	NDSR	CONTROL CONSOLE /DESK					
		Supplying, installation, testing & commissioning of floor mounted desk type control console cum indicating panel in the A.C. plant room containing various indications and controls for the complete air-conditioning system comprising chilling units, chilled/ Hot/ condenser fana, Ex. blower, Fans etc , Hot water generator with test push button facility. The panel shall be fabricated from minimum 1.6mm thick M.S. powder coated sheet of approved design. The air-conditioning module of the central control cum indicating panel shall contain the following accessories.					
		Status indication (ON, OFF & fault) of each compressor for each chilling machine, hot water boiler etc.					
		Push buttons and indicating lamps for remote start & stop and status indication for every nos of the water circulating pumps, Ex blower, Fans etc.					

Item No. 1	DSR/ NDSR 2	Description 3	Total Qty 4	Unit 5	Rate in Rs. (in Figure) 6	Rate in Rs. (in words) 7	Amount (Rs.) 8
		Hooter and flashing lamp to indicate operation of any safety/ shut down with necessary contactors, accept, reset and test push buttons.					
		Complete wiring with copper conductor PVC insulated multicore 2.5 sq.mm stranded cable (excluding supply of cable, tray, clamps etc) from various equipments in the A.C. plant room, AHU's and terrace equipments etc to the control console panel as required.					
		Complete Panel As above for Following blocks					
		For Plant room		Panel	250000		
		TOTAL FOR HVAC WORKS					74971011

	<u>PMSSY Shimla</u>		
	<u>SUMMARY SHEET FOR HVAC WORKS</u>		
SECTION	DESCRIPTION OF WORK		AMOUNT(Rs.)
A	EQUIPMENTS		33503592
B	PIPING		4460826
C	AIR DISTRIBUTION		28333279
D	ELECTRICAL		8673314
	GRAND TOTAL		74971011

Project Name: Construction of Super Speciality Block & their Maintenance during Defect Liability Period at Indira Gandhi Medical College , Shimla (Himanchal Pradesh) (Under PMSSY)

Summary Sheet

Note: Percentage should not quoted anywhere else except this summary page

Name of the Bidder						
Sr.No.	Particulars	Cost as per BOQ (in Rs.)	percentage above or below the estimated cost	% above or below in Figures	Percentage above or below in Words	Amount (in Rs.)
1	Civil	7303,94,464.63				-
2	Plumbing	729,65,294.00				-
3	Firefighting	185,34,847.00				-
4	Electrical	1970,68,817.00				-
5	HVAC	749,71,010.91				-
	Total Cost	10939,34,433.54				