

**SHAHEED BENAZIR BHUTTO UNIVERSITY
SHERINGAL DIR UPPER KHYBER PAKHTUNKHWA
PAKISTAN.**

- **BUILDING ITEM: CONSTRUCTION OF BOYS HOSTEL.**
- **PROJECT NAME “DEVELOPMENT OF UNIVERSITY OF DIR, SHERINGAL”.**
- **SPONSORING AGENCY: HIGHER EDUCATION COMMISSION, ISLAMABAD.**
- **FUNDING AGENCY: PLANNING COMMISSION, GOP.**

Tender/ Contract Documents

Volume-III

11. Bill of Quantities alongwith Preamble.

April, 2017



**ASSOCIATED CONSULTING ENGINEERS – ACE (PVT)
LTD**

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ISO 9001 Certified

**Project Director/
Director of Works/
Directorate of Planning
& Development.
Shaheed Benazir Bhutto
University Sheringal Dir
Upper**

BILL OF QUANTITIES

PREAMBLE TO BILL OF QUANTITIES

1. The Bill of Quantities shall be read in conjunction with the Conditions of Contract (GCC, PCC) Specifications (Special and Technical Provisions) and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work executed and measured by the Contractor and verified by the Engineer and valued at the rates and prices entered in the priced Bill of Quantities, where applicable.
3. The rates and prices entered in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract include all costs of Contractor's plant, labour, supervision, materials, execution, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract. Furthermore, all duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to deadline for submission of Bids, shall be included in the rates & prices and the total Bid Price submitted by the Bidder or shall provide tax exemption certificate from the concerned authority/department.
4. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor will have failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
5. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of the Works.
6. The execution of items and quantities of BOQ are subject to the approval of the Engineer as may be increased, decreased even deleted during execution hence rate per unit shall be entered very carefully by the bidder.
7. Variation Order if required, due to any reason shall be valued at the rates of priced BOQ. In case of non-availability in contract priced BOQ, the rates of MRS-2016 1st Bi-annual (i.e. CSR KPK) with %age (\pm) duly evaluated from Engineer's Estimate compared with Total Bid/ Contract Price shall be adopted.
8. The contractor shall procure all items required for the works mentioned in the BOQ from legal/authorized sources, particularly the wood, which shall be procured from the approved source of Forest Department, Govt. of KPK. The contractor should produce paid vouchers as a proof of such legal procurements, otherwise necessary deductions shall be made from the bills of the contractor and shall deposited in Govt. Treasury.

Sign: _____
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Seal: _____

Summary of Bill of Quantities

Construction of Boys Hostel at Shaheed BB University, Sheringal Dir Upper

Ser	Description of Works	Amount	
		in Words	in Figures
A.	Civil Works		
B.	Plumbing, Sanitary and Water Supply Works		
C.	Electrical/Mechanical/Fire Alarm/ Networking/ CCTV Works		
D.	Grand Total (A+B+C)		
E.	Discount _____ (%)		
F.	Net Total (D-E)		
Net Total (F) (in millions)			-

We the undersigned offer to execute and complete such works and remedy therein any defect in conformity with the complete bidding/ contract documents (i-e Conditions of the Contract, PCC, GCC, BoQ along with preamble, Specifications (Technical & Special Provisions) and Drawings within the Stipulated Period in the Quoted Rates by us.

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Bill of Quantities**Construction of Boys Hostel at Shaheed BB University, Sheringal Dir Upper**

Sr. No.	Description	Qty	Unit	Rate (Figures)	Rate (Words)	Amount
1	2	3	4	5	6	7
	Civil Works (Schedule items)					
1	Chapter-3 (Earthwork)					
1.01	Excavation as in Ordinary Soil in Foundation of Building and other structures as and where required/directed including refilling around foundation, plinth, under floor with surplus excavated earth, including watering, ramming, or disposing off of surplus material to any suitable site within university premises any lead, complete as per approved Drawings, Specifications and Directions of the Engineer.	24,800.79	Cft			
1.02	--ditto-- but Hard Soil.	8,266.93	Cft			
1.03	--ditto-- but Shingle/Gravel.	4,133.93	Cft			
1.04	--ditto-- but Rock Not Requiring Blasting.	4,133.93	Cft			

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1.05	Filling around Foundation, Plinth, under Floor or as and where required and directed by the Engineer with any type earth/filling material (as approved) barrowed from the approved source, including excavation at source, transportation, filling watering, ramming, any lead, complete as per approved Drawings, Specifications and Directions of the Engineer.	10,774.84	Cft			
1.06	Sweet Earth Filling in Lawns including dressing and compaction, (as approved) barrowed from the approved source, including excavation at source, transportation, filling watering, ramming, any lead, complete as per approved Drawings, Specifications and Directions of the Engineer.	2,000.00	Cft			
1.07	Supplying and Turfing of lawn with Imported Korian Grass as per approved sample and directions of the Engineer.	1,000.00	Sft			
1.08	Supplying, Preparation and Spraying of anti-termite liquid mixed with water, spraying on excavation and spraying or injection on/in wood works as and where required/directed complete work as per specifications and directions of the Engineer.	38,827.43	Sft			
2	Chapter-6 (Concrete)					

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2.01	Providing and Laying of Plain Cement Concrete (using Crushed Stone) under foundation and under layers of floors, as and where required etc. including Placing, compacting, finishing & curing complete (including screening and washing of aggregates) (Ratio 1:4:8) complete as per approved Drawings, Specifications and Directions of the Engineer.	3,818.09	Cft			
2.02	--ditto--but using Ratio 1:2:4..	5,553.24	Cft			
	Providing and laying of Reinforced Cement Concrete using coarse Sand and screened graded & washed aggregate (Crushed Stone), in required shape & design, including forms moulds, Steel or heavy duty laminated sheet shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding cost of steel reinforcement, its fabrication and placing in position etc.) complete as per approved Drawings, Specifications and Directions of the Engineer.					
2.03	RCC as in Column & other structural members, insitu or precast. Type-B Concrete (minimum ratio 1:1.5:3)complete as per approved Drawings, Specifications and Directions of the Engineer.	9,277.13	Cft			
2.04	RCC as in Roof Slab, Beam, Lintels, Girders & other structural members, insitu or precast. Type-C (minimum ratio 1:2:4) complete as per approved Drawings, Specifications and Directions of the Engineer.	29,559.36	Cft			

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2.05	RCC as in Slab of Raft/Strip Foundation, Base Slab of Columns and Retaining Walls and other structural members other than Columns, Beams, Slab, Lintels, Shades. Type-C (minimum ratio 1:2:4) complete as per Specifications and directions of the Engineer.	16,191.85	Cft			
2.06	RCC 1:2:4 as in Jalies, Ornaments/Decorative Columns, Topping, Window Shades, Sides, Sills, and the Like works as and where directed by the Engineer, complete as per approved Drawings, Specifications and Directions of the Engineer.	100.00	Cft			
2.07	Add extra labour for RCC in 2nd Storey / First Floor.	8,544.59	Cft			
2.08	Add extra labour for RCC in 3rd Storey / Second Floor.	8,520.09	Cft			
2.09	Add extra labour for RCC in 4th Storey / Third Floor.	3,443.45	Cft			
2.10	Supply & Fabrication of Mild Steel Reinforcement using Hot Rolled Deformed Bars Grade 40 for Cement Concrete including cutting, bending, laying in position, making joints and fastening, including cost of binding wires and labour charges for binding of Reinforcement also includes removal of rust from bars (overlaps other than commercial length, chairs, and wastage, shall not be measured & paid separately), complete as per approved Drawings, Specifications and Directions of the Engineer.	31,579.97	Kgs			

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2.11	Supply & Fabrication of Mild Steel Reinforcement using Hot Rolled Deformed Bars Grade 60 for Cement Concrete including cutting, bending, laying in position, making joints and fastening, including cost of binding wires and labour charges for binding of Reinforcement also includes removal of rust from bars (overlaps other than commercial length, chairs, and wastage, shall not be measured & paid separately), complete as per approved Drawings, Specifications and Directions of the Engineer.	159,813.77	Kgs			
2.12	Providing and laying of Damp Proof Course comprising 2" thick PCC 1:2:4 using C/Stone, one Coat of Bitumen applied hot and one layer of Ploythene sheet 500gauge complete as per approved Drawings, Specifications and Directions of the Engineer.	1,127.64	Sft			
2.13	Providing and laying of Damp Proof Course comprising 1/2" thick Cement Sand Plaster (Ratio 1:4), one Coat of Bitumen and one Layer of Ploythene sheet 500gauge complete as per approved Drawings, Specifications and Directions of the Engineer.	1,503.52	Sft			
2.14	Providing and Fixing of Aluminium Nosing 1 1/2" x1 1/2" x 1/8" LI including screws, plugs etc. complete as per approved Drawings, Specifications and Directions of the Engineer.	100.00	Rft			
2.15	Supplying and Fixing in any position and any floor/storey/roof of PVC water stopper 8" wide and 3/8" thick complete as per approved Drawings, Specifications and Directions of the Engineer.	270.00	Rft			

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3	Chapter -7 (Masonry Works)					
3.01	Pacca/Burnt Brick Work in Foundation, Plinth and anywhere below Ground Level in Cement, in Cement, Sand Mortar Ratio 1:6 complete as per approved Drawings, Specifications and Directions of the Engineer.	4,722.84	Cft			
3.02	Pacca/Burnt Brick work in Ground Floor in Cement, Sand Mortar Ratio 1:6 (9" or over thick masonry walls) complete as per approved Drawings, Specifications and Directions of the Engineer.	13,917.08	Cft			
3.03	Pacca/ Burnt Brick work in First Floor in Cement, Sand Mortar Ratio 1:6 (9" or over thick masonry walls) complete as per approved Drawings, Specifications and Directions of the Engineer.	14,492.63	Cft			
3.04	Pacca/Burnt Brick work in Second floor in Cement, Sand Mortar 1:6 (9" or over thick masonry walls), complete as per approved Drawings, Specifications and Directions of the Engineer.	15,868.25	Cft			
3.05	Pacca/Burnt Brick work in Third floor in Cement, Sand Mortar 1:6 (9" or over thick masonry walls), complete as per approved Drawings, Specifications and Directions of the Engineer.	15,868.25	Cft			

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3.06	Pacca/Burnt Brick work in Fourth floor in Cement, Sand Mortar 1:6 (9" or over thick masonry walls), complete as per approved Drawings, Specifications and Directions of the Engineer.	701.13	Cft			
3.07	Pacca/Burnt Brick work in Ground Floor in Cement, Sand Mortar 1:4 (4.5" thick masonry walls), complete as per approved Drawings, Specifications and Directions of the Engineer.	1,767.00	Cft			
3.08	Pacca/Burnt Brick work in First Floor in Cement, Sand Mortar 1:4 (4.5" thick masonry walls), complete as per approved Drawings, Specifications and Directions of the Engineer.	1,561.26	Cft			
3.09	Pacca/Burnt Brick work in Second Floor in Cement, Sand mortar 1:4 (4.5" thick masonry walls) complete as per specification.	1,520.02	Cft			
3.10	Pacca/Burnt Brick work in Third Floor in Cement, Sand mortar 1:4 (4.5" thick masonry walls), complete as per approved Drawings, Specifications and Directions of the Engineer.	1,535.61	Cft			
4	Chapter-9 (Roofing, Trusses and Ceiling Works)					

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4.01	Supplying and Fixing of 24 BWG Corrugated Galvanized Iron Sheet Coloured (as approved by the Engineer) fixed to Timber/Steel Framing or Purlins with one and half Corrugation side lap and six inches end laps fixed with GI "J" Bolts, Nuts, or Nails, including GI Limpet and Bituminous Washer, @ 15" C/C, complete in all respect (but excluding cost of Valleys, ridges, wind ties), complete as per approved Drawings, Specifications and Directions of the Engineer.	16,444.00	Sft			
4.02	Supplying and Fixing of 24 BWG Plan Galvanized Iron Sheet Coloured (as approved by the Engineer) fixed to Timber/Steel Framing or Purlins fixed with GI "J" Bolts, Nuts, or Nails, including GI Limpet and Bituminous Washer complete in all respect as in Ridges, Hips Valley, Covels etc. (but excluding cost of Valleys, ridges, wind ties), complete as per approved Drawings, Specifications and Directions of the Engineer.	2,500.00	Sft			
4.03	Supplying and fixing in position, Mild Steel Sections, Angles, Tees, Flat, Channels, Solid, Square, Solid Round Bars any size and thickness including Welding, Grinding as in Steel Trusses, i-e Purlins, Rafter, Struts, Kingpost, Wind Ties and Gussets plats and the like items etc. and/or where required/ directed/ shown in drawings, complete as per approved Drawings, Specifications and Directions of the Engineer.	9,950.00	Kg			

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4.04	Supplying and fixing in position of 2nd class wood (kail, sruf, kachal, Chir, Partal, kandal, Garjan, etc.) as in trusses, kingpost, tie beams, rafter, strut, purlin, etc. or as and where required complete as per approved Drawings, Specifications and Directions of the Engineer.	200.00	Cft			
4.05	Supplying, Making and Fixing in Position as per approved Design and Shape of 1" thick Thermophore sheets in Eave Board, Roof Ceiling and the like positions complete including framing 2"x1.5" unplanned @ 2'-0 C/C B/Ways, complete as per approved Drawings, Specifications and Directions of the Engineer.	10,056.81	Sft			
4.06	Supplying, Making and Fixing in Position as per approved Design and Shape of 1/2" thick water proof Lasani Sheet (MDF) in Eave Board, Roof Ceiling and the like positions complete including framing 2"x1.5" unplanned @ 2'-0 C/C B/Ways, complete as per approved Drawings, Specifications and Directions of the Engineer.	3,000.00	Sft			
5	Chapter-10 (Flooring)					
5.01	Supplying and Filling Sand/Gravel/Shingle under Floor or as and where directed complete brought from approved source including excavation at sources, transportation and laying in position, watering, ramming, compaction with plate compactor, complete as per approved Drawings, Specifications and Directions of the Engineer.	8,235.08	Cft			

Sign: _____

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5.02	Supplying of stone or Brick ballast 1" to 2" with 25% Sand as in under layer of Floor or as and where directed complete brought from approved source including transportation and laying in position, watering, ramming, compaction with plate compactor, complete as per approved Drawings, Specifications and Directions of the Engineer.	12,121.24	Cft			
5.03	Providing and laying Topping of Cement Concrete 1:2:4, incl surface finishing & divided in panels, 3" thick except Glass strips or marble patty, complete as per approved Drawings, Specifications and Directions of the Engineer.	100.00	Sft			
5.04	Providing and laying or fixing to walls of Porcelain Tiles as in floors or dado (Master Tiles SB PNM Series) 18"x18" any colour laid in dry bond over a base or plaster of 1/2" thick (1:2) and joints filled with white/matching colour cement complete in all respect as per Drawings, Specifications and directions of the Engineer.	6,497.20	Sft			
5.05	Providing and Laying Floor of any Colour, Non-Skid, Ceramic /Glazed Tiles 12"x12", Laid in White Cement & Pigment complete over 3/4" thick cement mortar 1:2 Base, complete as per approved Drawings, Specifications and Directions of the Engineer.	3,080.31	Sft			

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5.06	Providing and laying of Ceramic /Glazed tiles 12"x12" any color and thickness as in dado/skirting jointed in white cement incl. finishing complete in all respect over 1/2" thick cement mortar 1:4 wall plaster, complete as per approved Drawings, Specifications and Directions of the Engineer.	11,766.25	Sft			
5.07	P&F Ceramic /Glazed Coloured, Printed, Fancy Borders minimum 3" Wide as in Dado/ Skirting jointed in white cement and incl. finishing complete over 1/2" thick cement mortar 1:4 wall plaster, complete as per approved Drawings, Specifications and Directions of the Engineer.	200.00	Rft			
5.08	Providing and Laying of China Verona Marble (one piece) upto 7' feet of width (as required) and 3/4" thick for Stair's Steps, Shelves, Cabinets etc. bull nosed laid on position in cement mortar; incl grinding and rubbing, over 3/4" thick cement mortar 1:2 Base, complete as per approved Drawings, Specifications and Directions of the Engineer.	1,869.76	Sft			
5.09	Providing and Laying of China Verona (one piece) upto 7' feet of width (as required) and 1/2" thick for Stair's Risers etc. laid on position in cement mortar; incl grinding and rubbing over 1/2" thick cement mortar 1:4 wall plaster, complete as per approved Drawings, Specifications and Directions of the Engineer.	583.00	Sft			

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5.10	Providing and Laying of China Verona 12"x24" and 3/4" thick laid as in floor in cement mortar; incl grinding and rubbing, over 3/4" thick cement mortar 1:2 Base, complete as per approved Drawings, Specifications and Directions of the Engineer.	11,482.83	Sft			
5.11	Providing and Laying of China Verona 12"x12" and 3/4" thick laid as in floor in cement mortar; incl grinding and rubbing, over 3/4" thick cement mortar 1:2 Base, complete as per approved Drawings, Specifications and Directions of the Engineer.	22,331.97	Sft			
5.12	Providing and Laying of Granite Marble of approved colour one piece pre-polished 3/4" thick laid as in Tread of Stairs, Counters, Cabinets, façade/fascia etc ; incl grinding and rubbing, over 3/4" thick cement mortar 1:2 Base, complete as per approved Drawings, Specifications and Directions of the Engineer.	1,398.50	Sft			
5.13	P&F 2" thick Precast Concrete 7000PSI Tuff Tiles any type and design, over 3" thick bed of Sand over 3" thick PCC 1:4:8 (using Crushed Stone) including Vibration of Tiles with plate vibrator, joints filled with Sand, complete as per approved Drawings, Specifications and Directions of the Engineer.	5,000.00	Sft			
5.14	P & F of Kerb Stone (12"X18"x6") made of PCC 1:1.5:3 laid and set in cement mortar (1:3) as in any position, complete in all respect, complete as per approved Drawings, Specifications and Directions of the Engineer.	500.00	Rft			

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M/S: _____

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5.15	Brick on edge flooring, laid in 1:6 c/s mortar, over a bed of 3/4" thick cement mortar 1:6, complete as per approved Drawings, Specifications and Directions of the Engineer.	2,700.00	Sft			
6	Chapter-11 (Surface Rendering)					
6.01	3/8" thick Cement Plaster under soffit of RCC roof slabs in any floor: (in CM 1:4), complete as per approved Drawings, Specifications and Directions of the Engineer.	42,237.72	Sft			
6.02	1/2" thick Cement Plaster in CM 1:6 on internal sides of walls in any floor, complete as per approved Drawings, Specifications and Directions of the Engineer.	155,905.11	Sft			
6.03	Providing & applying Sand tex coating with recommended sealer and thinner on the surface of cement plaster on the exterior surface of the building (including 3/4" thick plaster on wall). The coating shell be of approved color and pattern surface should be prepared by removing duct dirt oil and stepped irregurities shell be rectified approved manufacture complete in all respect, as per approved Drawings, Specifications and Directions of the Engineer.	25,707.00	Sft			

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6.04	Providing and Laying Dark Red & White Mohmand marble Fine Dressed Stone 3/4" thick 12"x18" laid in any position in cement mortar over a base of 3/4" thick CSM 1:4 incl grooves as per drawings, grinding and rubbing, complete as per approved Drawings, Specifications and Directions of the Engineer.	8,193.50	Sft			
7	Chapter-12 (Joinery Works)					
7.01	First Class 1.5" thick deodar wood wrought joinery in doors/windows as per approved design fully paneled, or paneled & gauzed, or paneled & glazed, or fully glazed both sides finished include 05mm thick plain/ tinted/ Frosted Glass fixed in position complete, including Brass mongary/fittings i-e Hinges, Tower Bolts, Handles, Chokes, Stopper, Cleats/ GI Clamp, and cord with hooks and any type Chowkats etc. where directed (but excluding, sliding bolts, locks, latches and painting), complete as per approved Drawings, Specifications and Directions of the Engineer.	56.00	Sft			
7.02	Hollow flush door 1.5"-2" thick including iron mongery excluding Chowkats & lock: Commercial veneered, complete as per approved Drawings, Specifications and Directions of the Engineer.	3,367.00	Sft			

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M/S: _____

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7.03	Supply and fixing UPVC Flush doors with 60mm wide frame 2-2.5mm wall thickness inclusive of all accessories and galvanized iron support in any available Plain colour, complete as per approved Drawings, Specifications and Directions of the Engineer.	1,039.50	Sft			
7.04	P&F GI wire gauze 22 SWG 12x12 mesh per square inch fixed to windows with 3"x3/4" arch fillets complete as per approved Drawings, Specifications and Directions of the Engineer.	50.00	Sft			
7.05	Supply and Fixing 22 SWG Stainless Steel Kick/Push plates fixed with stainless steel Screws @ 4"c/c, complete as per approved Drawings, Specifications and Directions of the Engineer.	10.00	Sft			
7.06	Supplying and fixing in position First Class Deodar Wood as in Chowkats for doors, fillets, beading or similar fancy joinery works etc. of/in any size, design and shape including sawing, planning, wroughting, etc. fixing in position, including nails and screws, hold fasts, etc. as and where directed, complete as per approved Drawings, Specifications and Directions of the Engineer.	10.00	Cft			

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7.07	Supplying and Fixing in position of Aluminium Sliding Window (Premium Model) of Anodized Champagne/ Bronze/ Black extruded section as specified including 5mm thick Frosted/Tinted/Plain Glass, Handles & Auto locks and Fly/Insect Screening (half window) fixing on concrete, wooden or steel frames complete with all necessary fittings, complete as per approved Drawings, Specifications and Directions of the Engineer.	3,436.00	Sft			
7.08	Supplying and Fixing in position of Aluminium Swing Door (Premium Model) of Anodized Champagne/Bronze/Black extruded section as specified including Frosted/Tinted/Plain Glass of 5mm thick, handles, locks & Hydraulic Door Closers and fixing on concrete, wooden or steel frames complete with all necessary fittings and complete in all respect as per specifications and directions of the Engineer.	100.00	Sft			
7.09	P& F of approved Best Quality Heavy Duty Stainless steel Sliding Bolt 12"long as per approved sample by the Engineer/Employer, complete as per approved Drawings, Specifications and Directions of the Engineer.	150.00	No			
7.1	P& F of Hydraulic Door Closers single action (best quality) heavy duty, complete as per approved Drawings, Specifications and Directions of the Engineer.	150.00	No			

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7.11	Supplying and Fixing of 2'-9" high Deodar Wooden Railing of approved shape and design including Had Rail, Bend, Corners, Masters, vertical supports, etc. including Lacquer Polishing etc. complete as per approved Drawings, Specifications and Directions of the Engineer.	448.00	Rft			
7.12	Supplying, Making and Fixing in Position as per approved Design and Shape of 1/2" thick Deodar Wood Planking in Eave Board, Roof Ceiling and the like positions complete including Sawing, Wroughting, and Planning complete but without framing, complete as per approved Drawings, Specifications and Directions of the Engineer.	100.00	Sft			
7.13	Providing and fixing Wood Box Type Wardrobe/Almira 22" deep, including deodar wood 3/4" thick Boxing, Drawers and Shelves and 1/4" thick Lasani sheet Backing, 1.25" thick deodar wood leaves with framing, and 18"x24" mirror 5mm thick, C/P Hanger Rods, including Brass fitting, Locking arrangement, Handles, Magnetic Catchers, Shoe Rods, and Racks, etc. and three coats of S/E Painting including Primers to internal surfaces and Lacquer Polishing on external side of leaves, complete as per approved Drawings, Specifications and Directions of the Engineer.	8244.00	Sft			
7.14	--ditto-- but 18" deep.	50.00	Sft			

Sign: _____

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7.15	Supplying and Fixing of 3-0 high and 2-6 wide Kitchen Floor Cabinet including 4.5" thick Brick work in CM 1:4 @4-0ft apart and its plastering, 3" thick RCC 1:2:4 Shelf Top, Reinforced with 3/8" dia bars @6" c/c both ways, deodar wood leaves, and frame and edging, including magnetic catcher, brass handles, parliament hinges etc. (excluding marble top which shall be paid separately) but including painting or polishing, complete as per approved Drawings, Specifications and Directions of the Engineer.	138.16	Rft			
7.16	Supplying and Fixing of 2'-6 high and 18" to 24" deep/wide Kitchen Wall Cabinet including 3/4" thick deodar wood, boxing, shelves, leaves etc. & 1/4" thick Plywood backing, including 3"x1" frame & supports and edging, including magnetic catcher, brass handles, parliament hinges, including S/E painting on internal sides and Lacquer polishing on external sides, complete as per approved Drawings, Specifications and Directions of the Engineer.	138.16	Rft			
8	Chapter-13 (Painting & Varnishing)					
8.01	Preparation of surface & Painting to doors, windows, ceiling, walls and other surfaces such as wooden/steel/plastered or as and where directed/required in any colour, design, pattern, glass or mate finish (Priming coat and Synthetic Enamel Paint 2 coats), complete as per specifications and directions of the Engineer.	6846.00	Sft			

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8.02	Priming Coat of (pre-mixed, factory made) Chalk putty to form smooth base for distemper and P/E paint on walls and ceiling etc. complete as per specifications and directions of the Engineer.	198,142.00	Sft			
8.03	Prepare surface and Painting with Plastic Emulsion Paint Three Coats on Walls and Ceiling complete all as per Specifications and Directions of the Engineer.	198,142.00	Sft			
8.04	Prepare surface and Painting new surface of Guard Bars. Railing & similar open work : Priming coat and with Synthetic Enamel Paint :(2 coats), complete as per specifications and directions of the Engineer.	100.00	Sft			
8.05	Preparation of surface and applying of Lacquer Polishing to doors etc. complete work as per specifications and directions of the Engineer.	100.00	Sft			
9	(Flue Pipes)					
9.01	Supplying and fixing of 3" dia AC Building Pipes including Spigot and Socket Joints fixed in walls including M/S Covels at top, complete as per specifications and directions of the Engineer.	100.00	Rft			
10	Chapter-25 (Steel and Iron Works)					

Sign: _____

M/S: _____

Seal: _____

10.01	Supplying and fixing in position, Mild Steel Sections, Angles, Tees, Flat, Channels, Solid, Square, Solid Round Bars and Sheets any size and thickness including Welding, Grinding as in Grill for window, Stairs Railing, Steel Doors, Steel Chowkats and the like items etc. and/or where required/ directed/ shown in drawings, complete as per Drawings, Specifications and Directions of the Engineer.	5000.00	Kg			
10.02	Supplying and fixing in position, Mild Steel Sections, Flat, Square, Rectangular Hollow Sections and any size and thickness including Welding, Grinding as, and where required etc. and/or where required/ directed/ shown in drawings, , complete as per Drawings, Specifications and Directions of the Engineer.	50.00	Kg			
10.03	Supplying and fixing in position, Mild Steel Angles, Flat, Sections any size and thickness cut to dead length and fixing in position as in Dowel Bars etc. and/or where required/ directed/ shown in drawings, complete as per Drawings, Specifications and Directions of the Engineer.	50.00	Kg			
10.04	Supplying and Fixing in position of Mild Steel Angle Iron for Fencing on compound wall including drilling/making holes and/or provision of hooks incl welding for fixing of barbed wire, complete as per Drawings, Specifications and Directions of the Engineer.	50.00	Kg			

Sign: _____

M/S: _____

Seal: _____

10.05	Supplying and Fixing in position of Barbed wire galvanized of 12SWG 4 strands, 4 points barbs @ 3" apart complete as per Directions of the Engineer.	50.00	Kg			
10.06	Supplying and Fixing in position of Concertina Wire, coil 12 SWG Galvanized wire, loop dia 0.991M, complete in all respect, , complete as per Drawings, Specifications and Directions of the Engineer.	50.00	Kg			
10.07	Supplying and Fixing in position of Stainless Steel Stair or Terrace Railing comprising Hand Rail 2" dia 16BWG, 5/8" dia 18BWG Runners Pipes and 16 BWG Master complete with all necessary fitting including fixing in position, complete as per Drawings, Specifications and Directions of the Engineer.	50.00	Sft			
10.08	Supplying and fixing in position XPM Expanded Metal Galvanized 38mm X 44mm mesh (18 SWG) BRC Fabric weld-mesh, max-weld and fixed in position like doors, partitions and/or Lathing for Plaster including binding wire, nailing, nails and staples and/or where required/ directed/ shown in drawings, complete as per Drawings, Specifications and Directions of the Engineer.	50.00	Kg			
	Civil Works.				Total	

Sign: _____

M/S: _____

Seal: _____

Bill of Quantities

Construction of Boys Hostel at Shaheed BB University, Sheringal Dir Upper

Sr. No.	Description	Qty	Unit	Rate (Figures)	Rate (Words)	Amount
1	2	3	4	5	6	7
11	Plumbing, Sanitary Installations & Water Supply Works (Schedule Items)					
11.01	P&F Glazed Earthen Ware WC European type (coupled set) comprising water closet, 3glns Glazed flushing cistern, and all necessary fittings such as Bakelite seat cover, plastic connection etc. including fixing in position all as specified, (Best quality, any Colour) as per Specifications and directions of the Engineer.	6	No			
11.02	P&F Glazed Earthen Ware WC Squatting type with blut-in foot rests, complete set comprising WC Orissa, and accessories "P" or "S" Trap, PVC Hockey pipe etc. including fixing in position all as specified, (Best quality, any Colour) as per Specifications and directions of the Engineer.	24	No			
11.03	P&F Plastic Flushing Cistern, plastic connection etc. including fixing in position all as specified, (Best quality) as per Specifications and directions of the Engineer.	24	No			

Sign: _____
M/S: _____
Seal: _____

11.04	P&F Glazed Earthen Ware WHB i/c set of brackets, Kit/Bolts, waste pipe and Brass waste coupling, complete Size 25"x18" with pedestal, (Best quality) as per Specifications and directions of the Engineer.	2	No			
11.05	P&F Glazed Earthen Ware WHB (Vanity Type) i/c set in RCC shelf including waste pipe and Brass waste coupling, complete Size 25"x18" without pedestal, (Best quality).	32	No			
11.06	P&F 18 BG thick Stainless Steel Sink with drain board size 48"x24" incl. set of Brackets, Waste Pipe and waste coupling etc. complete, (Best quality) as per Specifications and directions of the Engineer.	3	No			
11.07	P&F 1/2" dia copper connection i/c check, nuts etc. complete, (Best quality) as per Specifications and directions of the Engineer.	12	No			
11.08	P&F Soap Dish Plastic, heavy type, Best quality, any Colour as per Specifications and directions of the Engineer.	52	No			
11.09	Supplying, Preparation and Spraying of anti-termite liquid mixed with water, spraying on excavation and spraying or injection on/in wood works as and where required/directed complete work as per specifications and directions of the Engineer.	30	No			
11.10	P&F Towel Rail Plastic, heavy type, Best quality, any Colour, as per Specifications and directions of the Engineer.	30	No			
11.11	P&F 5mm thick mirror 22"x16" Size, with plastic frame best quality complete (any Colour) as per Specifications and directions of the Engineer.	26	No			

Sign: _____

M/S: _____

Seal: _____

11.12	P&F best quality Plastic Shelf 24"x5" heavy type, Best quality, any Colour as per Specifications and directions of the Engineer.	26	No			
11.13	P&F 3/4" CP Bib-Cock, heavy type : best quality as per Specifications and directions of the Engineer.	60	No			
11.14	P&F 1/2" CP Tee Stop Cock, heavy type : best quality as per Specifications and directions of the Engineer.	60	No			
11.15	P&F 1/2"x4" CP Shower Rose with CP Rod and CP Mixing Valve shower complete set, , heavy type : best quality as per Specifications and directions of the Engineer.	25	No			
11.16	P&F Muslim Shower, double bibcock, and Stainless steel pipe complete set, , heavy type : best quality as per Specifications and directions of the Engineer.	32	No			
11.17	P&F CP Mixing Valve for WHB, Sink, heavy type : best quality as per Specifications and directions of the Engineer.	37	No			
11.18	P&F PVC Grating 6"x6" fixed in position best quality as per Specifications and directions of the Engineer.	30	No			
11.19	P&F Cast Iron Floor Trap incl. PVC Grating & Concrete Chamber all round : 4"x3" , heavy type : best quality complete. as per Specifications and directions of the Engineer.	72	No			
11.20	P&F CI 4" Gully Trap with PCC, incl. Masonry Chamber 1'x1' and CI Grating 12", heavy type : best quality complete work, as per Specifications and directions of the Engineer.	10	No			

Sign: _____

M/S: _____

Seal: _____

11.21	P&F CI 4" Grease Trap with PCC, incl. Masonry Chamber 1'x1' and CI Grating 12", heavy type : best quality complete work as per Specifications and directions of the Engineer.	3	No			
11.22	P&F Brass ball valve 3/4" dia , heavy type : best quality complete, as per Specifications and directions of the Engineer.	6	No			
11.23	--ditto-- but 1" dia.	4	No			
11.24	--ditto-- but 1.5" dia.	2	No			
11.25	P&F Brass float valve 3/4" dia, heavy type: best quality complete, as per Specifications and directions of the Engineer.	2	No			
11.26	--ditto-- but 1" dia.	2	No			
11.27	Supply and fixing Tubes, water quality G.I with all fittings (i.e. sockets, bends, tees, elbows, Unions etc. where required) and laid complete in trenches (exclusive of excavation) or fixed to walls, floor (surface or concealed) and ceilings etc incl caps and plugs clamps and other accessories and fittings as required 2" dia (light), as per Specifications and directions of the Engineer.	300.00	Rft			
11.28	--ditto-- but 1.5" dia.	100.00	Rft			

Sign: _____

M/S: _____

Seal: _____

11.29	--ditto-- but 1" dia.	500.00	Rft			
11.30	--ditto-- but 3/4" dia.	500.00	Rft			
11.31	--ditto-- but 1/2" dia.	1000.00	Rft			
11.32	P&F of Gun Metal Peet/Gate Valve (screwed 1" dia) best quality, as per Specifications and directions of the Engineer.	16	No			
11.33	--ditto-- but 1.5" dia..	2	No			
11.34	--ditto-- but 2" dia..	2	No			
11.35	P&F CI Manhole cover with frame etc. complete 12" dia, heavy type : best quality complete, as per Specifications and directions of the Engineer.	10	Kg			
11.36	P&L RCC pipes, moulded with cement concrete 1:1.5:3, with Spigot, Socket or Collars Joints etc. including cost of Reinforcement, Confirming to BS 5911: Part-1: 1981 Class "L" including carriage of pipes from factory to site of work, including lowering in trenches to correct alignment and grade, jointing, cutting of pipes where necessary, finishing and Testing etc. complete 6" dia, as per Specifications and directions of the Engineer.	12.00	Rft			
11.37	--ditto-- but 9" dia.	260.00	Rft			
11.38	--ditto-- but 12" dia.	12.00	Rft			

Sign: _____
M/S: _____
Seal: _____

11.39	Providing, fixing, cutting, jointing and testing CI Soil, Waste and vent, piping including solvent or cement jointing, clamping to walls and ceiling, hangers, supports, (excluding specials & fittings) of 2" dia., as per Specifications and directions of the Engineer.	100.00	Rft.			
11.40	---ditto-- but 3" dia.	200.00	Rft.			
11.41	---ditto-- but 4" dia.	200.00	Rft.			
11.42	---ditto-- but 6" dia.	50.00	Rft.			
11.43	Providing, fixing, cutting, jointing and testing CI fittings for CI piping such as Tees, Sockets, L.Bows, Yee, Reducers and the like items with Solvent or cement jointing, clamping to walls and ceiling, hangers, supports, of 3" dia, as per Specifications and directions of the Engineer.	10	No.			
11.44	---ditto-- but 4" dia.	10	No.			
11.45	---ditto-- but 6" dia.	10	No.			
11.46	---ditto-- but 6" dia.	10	No.			
11.47	Providing, fixing, cutting, jointing and testing UPVC Soil, Waste and vent, piping including solvent or cement jointing, clamping to walls and ceiling, hangers, supports, (excluding specials & fittings) of 2" dia., as per Specifications and directions of the Engineer.	320.00	Rft.			
11.48	---ditto-- but 3" dia.	1200.00	Rft.			

Sign: _____
M/S: _____
Seal: _____

11.49	---ditto-- but 4" dia.	500.00	Rft.			
11.50	---ditto-- but 6" dia.	100.00	Rft.			
11.51	Providing, fixing, cutting, jointing and testing UPVC fittings for CI piping such as Tees, Sockets, L.Bows, Yee, Reducers and the like items with Solvent or cement jointing, clamping to walls and ceiling, hangers, supports, of 3" dia, as per Specifications and directions of the Engineer.	10	No.			
11.52	---ditto-- but 4" dia.	20	No.			
11.53	---ditto-- but 6" dia.	10	No.			
11.54	P&F approved best quality Solar Water Heaters/Geyser 35 Gallons Capacity including geyser, solar system, plates and accessories (Elect cum Solar system) best quality complete with thermostat, etc. as per Specifications and directions of the Engineer.	2	No			
11.55	P&F approved best quality Elect Water Heaters/Geyser 12 gallons capacity, best quality complete with thermostat, safety valve, etc. as per Specifications and directions of the Engineer.	15	No			
11.56	P&F approved best quality Brass Safety Valve for Water Heaters/Geyser, as per Specifications and directions of the Engineer.	17	No			

Sign: _____

M/S: _____

Seal: _____

11.57	P&F approved best quality (LPG) Cooking Rang with 5 burner, oven, hot case & roastery, auto-ignition heavy type, best quality complete, as per Specifications and directions of the Engineer.	2	No			
11.58	P&F approved best quality (LPG) Chullah/Burner with 2 burners, oven, hot case & roastery, auto-ignition heavy type, best quality complete, as per Specifications and directions of the Engineer.	2	No			
11.59	P&F approved best quality (LPG) Burner with 12 burners, injectors with stand, control/ball valve and other accessories heavy type, best quality complete, as per Specifications and directions of the Engineer.	3	No			
11.60	P&F of Fire Hydrant flanged and drilled to BS Table "18 -1-9" complete with rubber packing 3" dia, heavy duty best quality complete, as per Specifications and directions of the Engineer.	3	Job			
11.61	P&F of Fire Extinguisher (Portable) CO2, 7 Kg capacity, as per Specifications and directions of the Engineer.	8	No			
11.62	P&F of Fire Extinguisher (Portable) dry powder type, 6 Kg capacity, as per Specifications and directions of the Engineer.	8	No			

Sign: _____
M/S: _____
Seal: _____

11.63	Providing & Installation of hose reel cabinets wall mounted swinging arm type, made of 18 swg. M.S sheet with glass front, fitted with push lock, size 915mm X 76mm x 228mm, including 25 mm brass gate valve at inlet, fire hose 25mm x 30mtr high pressure, fitted with couplings, One nozzle, Nylon plastic spray type, cabinet One quick release hose rack on which the hose will be arranged, cabinet painted with three coats of S/E paint FIRECHIEF make. Complete in all respect as per drawings, specifications, and / or as directed by the Engineer In charge.	3	Job			
11.64	Supplying, testing, commissioning of Water Filter 3 stage consisting polypropylene fiber cartridge 5 micron granular activated carbon cartridge 1 micron and size of cartridge 10" with ultra violet lamp, water flow rate 8 gpm complete in all respect including fixing in position as per drawings, specifications and directions of the Engineer.	1	Job			
11.65	Supplying, fixing, testing, commissioning, of Water purifier / filter 3 stage, comprising UV 2000, UVM 9322, UV-Lamp, Sterilizer, Quarter Sleeve 9322, Spun Cart 10", PP Yarn Cart 10" Regular, and all accessories as per standard specification (SO SAFE) complete in all respect including fixing in position as per drawings, specifications and directions of the Engineer.	1	Job			

Sign: _____

M/S: _____

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11.66	Supply and fixing of 0.5 HP Monoblock water pumps, single phase upto 72 ft head including valves and PPR Piping and other accessories controlling systems (elect and water supply etc.) all as per manufacturer instructions, complete in all respect including fixing in position as per drawings, specifications and directions of the Engineer.	1	Job			
11.67	Supplying and Fixing in position of Electric Water Cooler, SP, 220/240V, cooling capacity 30 to 40 lits/hour, complete, complete in all respect including fixing in position as per drawings, specifications and directions of the Engineer.	3	No			
11.68	Supplying of Refrigerator (Pak made) 10 Cft, Make "PEL". complete in all respect including fixing in position as per drawings, specifications and directions of the Engineer.	2	No			
11.69	Supplying of Deep freezer 14 Cft, "PEL" complete in all respect including fixing in position as per drawings, specifications and directions of the Engineer.	2	No			
11.70	Supplying, Testing, Commissioning, and Installation of Single Phase Stabilizer Twenty Thousands watts Pak Made (Copper) including all accesies such as cover, power cable, MS stand/frame power plug and switches etc.all as per Drawings, Specifications and directions of the Engineer.	4	No			
11.71	Supplying of Water Tank Polyethylene (PE) vertical 2270 lits, 500 gallon capacity, complete in all respect including fixing in position as per drawings, specifications and directions of the Engineer.	2	No			

Sign: _____

M/S: _____

Seal: _____

	Plumbing, Sanitary Installations & Water Supply Works			Total	
--	--	--	--	--------------	--

Sign: _____
M/S: _____
Seal: _____

Bill of Quantities

Construction of Boys Hostel at Shaheed BB University, Sheringal Dir Upper

Sr. No.	Description	Qty	Unit	Rate (Figures)	Rate (Words)	Amount
1	2	3	4	5	6	7
	Elect/Mechanical/Fire Alarm/Networking/CCTV Systems					
	General					
	All items of electrical works described under title "Description" unless specifically indicated otherwise, shall be deemed to be read in terms of supply, storing, protecting, making, assembling, installing, applying, laying, fixing, testing, commissioning, clearing etc. of the same inclusive of but not limited to all materials, labour, tools, plants equipments, appliances etc. as required for the completion and maintenance 'of the electrical work as per drawings, specifications, and/or as directed by the Engineer In charge.					
a.	All wiring to be done in PVC conduits or otherwise specified/appropriate sizes, underground, concealed in walls, columns, ceiling and/or wherever required.					
b.	All back boxes to be of best qualityPVC or 16 SWG sheet steel concealed in walls, columns or ceiling with provisions for connection of earth wires complete in all respect.					
c.	Install insulated earth conductor of specified size for each lighting and power ckts.					

Sign: _____
M/S: _____
Seal: _____

d.	All fan/light points, switches outlets DB's etc. shall be earthed.					
e.	All light fixtures shall be of approved make.					
1	Supply and erection of PVC pipe for wiring purpose including inspection boxes pull boxes, hooks, bend tees etc. complete recessed in walls					
	a) 3/4" i/d	18666.00	Rft.			
	b) 1" i/d	1788.00	Rft.			
	b) 1.25" i/d	340.00	Rft.			
	c) 1.5" i/d	155.00	Rft.			
	d) 2" i/d	200.00	Rft.			
	e) 4" i/d	170.00	Rft.			
2	Supply and erection of single core PVC insulated copper conductor 250/440 volts grade BSS-2004) cable in pre-laid pipes etc.					
	a) 3/0.029"	42630.00	Rft.			
	b) 7/0.029"	28301.00	Rft.			
	c) 7/0.036"	14950.00	Rft.			
	d) 7/0.044"	15850.00	Rft.			
3	Supply and erection of single core PVC insulated copper conductor 600/1100 volts grade BSS-2004) cable in pre-laid pipes etc.					
	a) 7/0.064"	2300.00	Rft.			
	b) 19/0.052"	400.00	Rft.			
	c) 37/0.103"	600.00	Rft.			

Sign: _____
M/S: _____
Seal: _____

4	Supply and erection of single core PVC insulated copper conductor 250/440 volts grade BSS-2004) cable in pre-laid pipes etc.					
	a) 7/0.029" ECC	16477.00	Rft.			
	b) 7/0.064" ECC	784.00	Rft.			
5	Supply and erection of single core PVC insulated copper conductor 600/1100 volts grade BSS-2004) cable in pre-laid pipes etc.					
	a) 37/0.072" ECC	150.00	Rft.			
6	Supply and erection of PVC or M.S sheet box of 16 SWG 4" deep with 3/16" thick Bakelite sheet Complete etc.					
	a) 4"x4"	680	No			
	b) 7"x4"	105	No			
	c) 9"x4"	58	No			
	d) 8"x10"	1	No			
	e) 10"x12"	1	No			
7	Supply and erection of switches 5 Amp. Recessed (Piano) type.	617	No			
8	Supply and erection of Multiplugs (switch & plug combined); recessed type.					
	a) 5 Amp.	556	No			
	b) 10/15 Amp.	102	No			

Sign: _____
M/S: _____
Seal: _____

9	Supply and erection of best quality AC ceiling fan complete with G.I. rod, canopy blades and regulator/Dimmer.					
	a) 48" sweep	4	No			
	b) 56" sweep	198	No			
10	Supply and erection of best quality complete with shutter and in-built regulator Exhaust Fan.					
	a) 12" sweep	12	No			
	b) 18" sweep	2	No			
11	S&E Tube light including rod choke etc complete double rod 2x40W with 2 choke & 2 starter	5	No			
12	S&E Tube light including rod choke etc complete single rod 40W with 1 choke & 1 starter	86	No			
	<u>LIGHT FITTINGS AND FIXTURES</u>					

Sign: _____
M/S: _____
Seal: _____

	Supply, installation, fixing, wiring, connection, testing and commission of fluorescent fittings and fixtures, ceiling mounted or ceiling suspended or installed in the false ceiling or wall mounted, pole mounted, weather proof, adjustable or non-adjustable, complete with chokes, spring loaded rotary holders starter, power factor correction capacitors, antiradio interference starters, ballast with brackets and down rod, industrial shade, brass, lamp holder proper gasketting necessary fixing accessories internal wiring, connection, earthing terminal etc. These are to be installed as and where shown on drawings or as required as per site conditions. Complete in all respects.					
	The approved manufactures- M/S Philips/Sunlight's as approved by the engineer.					
	FLOURESCENT & INCANDESCENT LIGHTS					
13	Energy saver complete with holder and accessories 18 watts CFL in ceiling & wall	376	No			
14	Down lighter Recess type 1x18watts PLC lamp.	112	No			
15	Weather proof bulkhead light with 11 watts PLC lamp with IP 54 housing..	20	No			
	FANS BOXS.					
16	Supply and erection of Best Quality PVC Fan Box 6" dia Heavy duty including 5/8" square or round Bar/hook for Fans duly PVC covered.	198	No			
	<u>Sub Main Panel Board</u>					

Sign: _____
M/S: _____
Seal: _____

17	<p>Fabrication, supply, erecting and testing of Sub Main Panel Board to be installed on ground floor, comprising of cubicles, frame made of sheet steel 14 SWG and doors of 16 SWG, with flexible earthing strips, degreased and de-rusted, zinc phosphated, finished with electro-static powder coating of 15 micron thickness in approved color, panel housing to comply with IP-44 protection, indoor floor mounting, in free standing design, with flush door, lockable handle, catchers, all auxiliaries, internal wiring, designation labels on MCCBS, earthing bar, numbering leads on the control wires, panel suitable for system Voltage 415 V, 50 Hz, 3 Phase and neutral, bus bars of 99.8% purity electrolytic copper, including cost of cable terminal blocks, cable termination lugs, brass cable glands for incoming & outgoing cables, wiring from breakers, indication lamps, instruments and control all accessories complete in all respects as per followings;</p>	1	Job			
	<p>All incoming and outgoing breakers shall be accessible by opening the front door having additional M.S. sheet cover. Gaskets shall also be provided where necessary. All MCCBs shall be suitable to operate without any de-rating at 45°C ambient temperature and shall be of one make only and not a mixture of more than one make. Circuit's layout shall conform to the single line diagrams. Make Legrand (France) / ABB (UK) M.G(Franc).</p>					

Sign: _____

M/S: _____

Seal: _____

	<u>SUB MAIN PANEL BOARD</u>					
	<u>Incoming</u>					
	1-320 Amps triple pole MCCB Adj, overload and short circuit protection, RC: not less 36 kA					
	4-Nos Copper Bus Bars of capacity 450 Amp electrolytic copper 99.9% purity, bus bars should be electro-tinned throughout the length.					
	3-Air cooled ring type CTs 300/5 Amps having suitable output and accuracy.					
	1-Digital type Ammeter scaled 0-400/5 Amps square shaped suitable for operation with CTs with Phase Selector switch.					
	1-Digital type Voltmeter scaled 0-600 Volts of square shaped with Voltmeter selector switch of 4 positions.					
	1-Earthing bar with necessary punched holes, nuts, bolts and washers, etc.					
	2-Earthing terminals, all earth leads to have green base with yellow stripe.					
	Required sets of cable terminal blocks and cable terminal lugs suitable for outgoing cables complete with brass cable glands on bottom of panel.					
	<u>Outgoing</u>					

Sign: _____

M/S: _____

Seal: _____

	8-60,1-30 (Elev.) Amps with neutral link MCCB TP having overload and short circuit protection, RC: not less than 20 KA					
	1 Spaces in SMPB to accommodate MCCBs in future of rating 50/40/30 Amps.					
	<u>DISTRIBUTION BOARDS</u>	-				
18	Supply, installation, connection of wires/cables, testing and commissioning of 500 volts, 50 Hz, Three-Phase and neutral distribution boards (DBs) concealed type, wall mounted to be installed as and where shown on drawings, made of M.S. sheet 16 SWG with hinged door, handle, catcher, earthing bar, neutral strip, internal wiring from MCCBs terminating on cable terminal blocks. One coat of antirust and anti-corrosive paint with further two coats of enameled paint of approved colour, all necessary materials equipped with Analogue Square Shaped Voltmeter scaled with 0-500 volts and with indication light complete in all respects and manufactured by any one of the approved manufacturers: conforming to single line diagram. D.B shall be equipped with the following components as shown on drawings complete in all respect or as approved by the Engineer In charge. MCCB /MCB Make- Legrand (Franc) /ABB (UK).	8	Job			
	DB-G1(11 Ways Three-Phase) Typical DB-G2,F1,F2,S1,S2,T1&T2					
	INCOMING					

Sign: _____

M/S: _____

Seal: _____

	1-60A TP MCCB Rc=10kA				
	OUTGOING				
	18-10A SP MCB Rc=6kA				
	12-16A SP MCB Rc=6kA				
	3-10/16 SPARE SP MCB Rc=6kA				
	<u>EARTHING PLATES</u>				
19	Supply, installation ,testing & commissioning of earthing system including cost of the excavation and refilling of the earth upto 6 meter depth size of 1200x1200mm, One tinned copper plate of size 610x610x3mm, two copper conductor 70mm square to be drawn upto earth connecting points in G.I pipe 50mm dia, all G.I pipe accessories, charcoal and lime mixture to be packed 300mm all around the vertical installed plate, lugs, thimbles,brass nuts and bolts, construction of inspection pit with C.I cover size 450mm, all necessary materials etc required to complete in all the respects as per detail drawing specification and instruction of the Engineer.	2	Job		
	<u>EARTH CONNECTING POINT (ECP)</u>				
20	Supply and installation of tinned earth connecting points consisting of copper plate 12"x 12" x 1/8" thick to be installed and where shown o drawings, complete with fixing arrangement, brass nut bolts, washers, lugs 1/2' dia holes to facilitate connections of incoming copper conductors and outgoing CPC.	4	No		
	<u>TELECOMMUNICATION SYSTEM</u>				
	Telephone Points on wall				

Sign: _____
M/S: _____
Seal: _____

21	Wiring for each telephone point on wall with 2 pair telephone cables from TDB to telephone point in and including cost of 25mm dia, PVC conduit heavy duty make Popular, Beta, Dadex, recessed in slabs, floors, walls, columns or on slab above false ceiling or as required as per site conditions, including M.S back box made of 16 SWG and RJ-11 socket outlet.	5	Points			
COMPUTER DATA NETWORKING						
General						
	All items of Net work system under title "Description" unless specifically indicated otherwise, shall be deemed to be read in terms of supply, storing, protecting, making, assembling, installing, applying, laying, fixing, testing, commissioning, clearing etc. including all materials, labor, tools, plants equipments, appliances etc. as required for the completion and maintenance net work system as per drawings, specifications, or as directed by the Engineer In charge.					
UTP Cat-6 Cable						
22	Wiring for Computer points on walls with 4 pair Cat 6, UTP , computer cable tinned copper conductor PVC insulated PVC sheathed manufactured by M/s Krone, Clipsal, 3M buried in floor walls, columns or laying in cable tray or as required as per site conditions, complete in all respects.	2000.00	Rft.			
PVC CONDUIT						

Sign: _____

M/S: _____

Seal: _____

	Supply at site, installation, connection, testing and commissioning of PVC conduit of various sizes buried in floor , walls , columns or as required as per site conditions.					
23	i) PVC Conduit 1" i/d	1200.00	Rft.			
24	ii) PVC Conduit 1.5" i/d	800.00	Rft.			
	DURA DUCT					
	Supply at site, installation, connection, testing and commissioning of Dura Duct of various sizes buried in floor , walls , columns or as required as per site conditions.					
25	Supply and fixing PVC conduit for surface wiring (Dura duct) 1/2" including all charges for nail screws etc.	100.00	Rft.			
26	Supply and fixing PVC conduit for surface wiring (Dura duct) 1" including all charges for nail screws etc.	100.00	Rft.			
27	Supply and fixing PVC conduit for surface wiring (Dura duct) 1.5" including all charges for nail screws etc.	100.00	Rft.			
28	Supply and fixing PVC conduit for surface wiring (Dura duct) 2" including all charges for nail screws etc.	100.00	Rft.			
	FLOOR BOX					

Sign: _____

M/S: _____

Seal: _____

29	Fabrication, supply, installation of floor outlet boxes made of mild steel 16 SWG of appropriate size but not less than 250mm X 250mm X 100mm deep with openable hinged cover 2.5mm thick, all necessary materials/arrangements for fixation of sockets, holes for passage of outgoing cables, rubber,groumet and earthing terminals	17	No			
ADDRESSABLE FIRE ALARM SYSTEM						
ADDRESSABLE FIRE ALARM CONTROL PANEL (FACP)						
30	Supply, installation, testing and commissioning of addressable Fire Alarm Control Panel consisting of 2 Loop complete with battery and charger and all other necessary materials, required to complete in all respects, as per specification and approved by the Engineer.Make:Menvier (U.K), Bentel (Italy), Honey Well (U.K)/Hochiki (UK).	1	No			
ADDRESSABLE SMOKE DETECTOR						
31	Supply, installation, testing and commissioning of addressable Smoke Detector make as specified to be installed on R.C.C slab/false ceiling, all necessary accessories complete in all respects as per specification and approved by the Engineer. Make: Menvier (U.K), Bentel, Honey well (U.K)/Hochiki (UK).	126	No			
ADDRESSABLE HEAT DETECTOR						

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32	Supply, installation, testing and commissioning of addressable Heat Detector make as specified to be installed on R.C.C slab/false ceiling, all necessary accessories complete in all respects as per specification and approved by the Engineer. Make: Menvier (U.K), Bentel, Honey well (U.K)/Hochiki (UK).	3	No			
ADDRESSABLE MANUAL CALL POINT						
33	Supply, installations testing and commissioning of addressable Manual Call point complete with back box to be installed recessed in walls, columns or as required with end of line diode where required make as specified to be installed as shown on drawing including cost of all necessary materials required to complete in all respect as per specification and approved by the Engineer. Make:Menvier (U.K), Bentel, Honey well (U.K)	8	No			
ADDRESSABLE FIRE ALARM SOUNDER						
34	Supply, installations testing and commissioning of addressable Fire Alarm Electronic Sounder to be installed recessed make as specified including cost of all necessary accessories required to complete in all respects as per specification and approved by the Engineer. Make:Menvier (U.K), Bentel, Honey well (U.K)	8	No			
PVC WIRES						

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	Supply, installation ,testing and commissioning of 2-core Shielded Retardant wires from FACP to smoke/heat detectors and manual to be pulled in pre-laid PVC conduit including cost of all necessary materials required to complete in all respects as per specification and approved by the Engineer.					
35	a) 2-Core Shielded Retardant wire 1.5 mm ²	1864.00	Rft			
36	b) 3/4" dia pipe	2375.00	Rft			
	CCTV SYSTEM					
	Providing,installing,commissioning and testing of cctv system fully automatic 240vac, 50 hz no rewiring switching or adjustment required according to ip-54 and IEC 529 standard with control output with solid state switches and control devices, having fully automatic with control panel with all accessories complete in all respect in accordance with the specifications manufacturer's instructions and as approved by the Engineer. Brands Samsung,Sony,Honeywell (USA) and GE.					
37	Full hd 4Megapixel Bullet Camera with following specifications.	8	Job			
	a). 4m resolution					
	b). 2.8 , 12mm (4.3x) motorized varifocal lens					
	c). 20 fps @ 4m , max.30 fps @ 2m all resolution					
	d). H.265, H.264, MJPEG codec supported, multiple streaming					
	e). Day & Night (ICR), WDR (120dB)					
	f). Motion detection, tampering, defocus detection					

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	g). Micro SD (128GB) memory slot, Poe/ 12V DC					
	h). IR viewable length 30m, IP66, IK10					
	j). Hallway view support					
	k). LDC support (Lens Distortion correction)					
38	PTZ Speed Dome Camera with following specifications.	33	Job			
	a). Compatible with PTZ cameras					
	b). Superior system compatibility by CMS					
	c). NET-i-viewer support					
	d). 3D joystick control for zoom					
	e). USB Interface					
	f). Easy Firmware Upgrade					
	Networking Video Recorder (NVR)					
	Providing, installation, testing and commissioning of 32 Channel Networking Video Recorder (Stand Alone,Non PC Based) with 250GB to 4TB HDD internal storage, records upto 400 ips PAL / 480ips NTSC, MPEG4 code flow video compression , full Pentaplex means Display, Recording, Playback, Networking and Back up.					
39	Wireless Remote Control, Back-up devices. Removable HDD CD-RW & USB (Optional View through LAN, WAN ,Internet.	1	No.			

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	Providing, installation, testing and commissioning of 8 Channel Networking Video Recorder (Stand Alone, Non PC Based) with 250GB to 4TB HDD internal storage, records upto 400 ips PAL / 480ips NTSC, MPEG4 code flow video compression, full Pentaplex means Display, Recording, Playback, Networking and Back up.					
40	Wireless Remote Control, Back-up devices. Removable HDD CD-RW & USB (Optional View through LAN, WAN, Internet).	2	No			
41	Providing installation, testing and commissioning of Colour monitors with following features.	1	Job			
	a). 40" LCD Screen					
	b). High Performance Resolution					
	c). Automatic colour Switching system					
	d). Front Panel Control					
	e). Free voltage (100-240 VAC)					
	f). Built in speakers					
	g). S-VHS input for separate					
	h). Video in 2 BNC					
	j). Video out 2 BNC					
	k). Audio input/output 2 RCA					
	l). Power consumption 67 W					
	m). Enclosure metal					
	n). Stabilizer and other accessories					
42	Providing installation, testing and commissioning of Auto Iris lens complete in all respects.	34	No			

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43	Providing installation, testing and commissioning of Coaxial cable including PVC conduit of 3/4" Beeta, Popular as per manufacturers recommendation specification.	5666.00	Rft			
<u>LIGHTNING PROTECTION SYSTEM</u>						
	Supply, installation and testing connecting, and commissioning of all material including Bond & Clamps etc with metal work in the vicinity of the LPS , to avoid the danger of side flashing and services of the complete lightening protection system as specified here in the earthing resistance of lightning protection system at any point in the system should not exceed ten (10) ohms. sub-distribution board having overload and short circuit protection of suitable rupturing capacity with metering , phase indication lamps , earthing , nuts, bolts, washers, cable glands, terminals fitted with required size of boards as per drawings and specification, having pebble gray colour according to IEC standard with enadiozing process approved by engineer complete in all respects.					
<u>AIR TERMINALS</u>						
44	Supply, installation on Roof terminals consisting of 25 mm dia copper rod 1000mm long ,150mm dia round copper ball with threaded 5 spikes, base assembly , clamps, nut & bolts, all necessary materials, complete in all respects as per drawings, specifications and approved by the Engineer.	1	Nos			
<u>COPPER STRIP ON ROOF</u>						

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45	Supply, installation of copper strip to be installed on the roof and parapet consisting of copper strip of size 25 x 3mm, including cost of bends, corners, saddles all foxing accessories complete in all respects as per drawings, specifications and approved by the Engineer.	550.00	Rft			
	<u>DOWN CONDUCTOR (D.C)</u>					
46	Supply, installation, connections of 1x70mm ² stranded copper conductor as down conductor to be installed in vertical position and fixed on the external walls or columns as shown on drawing including cost of making test joints, bends, corners, saddles all foxing accessories complete in all respects. Copper strips connected with the roof conductors shall be brought down to earth electrode complete in all respect as per drawings, specifications and approved by the Engineer.	425.00	Rft			
	<u>EARTH CONNECTING POINT (ECP)</u>					
47	Supply and installation of tinned earth connecting points consisting of copper plate 12"x 12"x 1/8" to be installed and where shown o drawings, complete with fixing arrangement, brass nut bolts, washers, lugs 1/2' dia holes to facilitate connections of incoming copper conductors and outgoing CPC.	6	Nos			
	<u>EARTH ELECTRODE</u>					

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48	Supply, installation , connections of earth electrodes 5/8" mm dia , 10' long , driven vertically in ground , all necessary materials / accessories complete in all respect as per drawings, specifications i.e lightning protection system (LPS) earth resistance measured at one point should not exceed 10 Ohms.	6	Job			
	Diesel Generator Set					
49	Supply, installation and testing connecting, and commissioning of 100kVA Diesel Generator Set, i/c AMF/ATS panel, locally fabricated sound proof canopy, cabling, earthing, transportation etc complete in all respects approved by the engineer in charge .	1	Job			
				Total		

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