

## NOTICE INVITING TENDER

### 1.1 GENERAL

Indraprastha College invites sealed Tender in prescribed Performa on Limited Tender basis from the shortlisted agencies out of Pre Qualification process, for the following work.

| <b>Description of work</b>  | <b>Earnest Money Deposit (EMD)</b> | <b>Period of completion</b> | <b>Estimated Cost</b> | <b>Last date for submission of Tender</b> |
|---|------------------------------------|-----------------------------|-----------------------|---|
| Addition/Alteration/Renovation of K G Hostel Building at Indraprastha College for Women, Delhi. | Rs. 2324338                        | 12 Months                   | Rs.116216900          | 20 May 2016                               |

### 1.2 POINTS TO BE NOTED

1.2.1 Works envisaged under this contract are required to be completed in all respects within the period of completion mentioned above.

1.2.2 The mere fact that the tenderer has been short-listed for the work shall not imply that his tender shall automatically be accepted. The same should contain all technical details as required for the consideration of tender.

1.2.3 Tender document consists of following sections:

- i) Notice Inviting tender
- ii) Form of Tender
- iii) Article of Agreement
- iv) Instructions to Tenderer
- v) General Conditions of Contract
- vi) Special Conditions for Cement and Steel
- vii) Testing of Material & Brief Specification
- viii) Tenderer's Financial Offer
- ix) Tender drawings

Tender document may be purchased from the office of the Principal office on all working days from 2 May 2016 to 20 May 2016 between 10.30 Hrs. to 15.30 Hrs by paying Rs 500/- in cash or DD drawn in favor of "Indraprastha College" payable at New Delhi from any scheduled bank.

1.2.4 Sealed Tender documents duly filled in are to be submitted to the Principal's office, Indraprastha College for Women, 31, Sham Nath Marg, Alipur Road, Delhi, before and up to 16:30 hrs on 20 May 2016. No consideration will be given to the tender received late or submitted /dispatched to any other offices than Principal Office.

1.2.5 The contract shall be governed by the documents listed in Para 1.2.3 above.

1.2.6 Conditional offer or offer with deviations from the Conditions of Contract or other requirements stipulated in this tender document is likely to be rejected as non-responsive.

- 1.2.7 The I.P. College reserves the right to accept or reject the tender offer without assigning any reasons. Tenderer shall not have any cause of action or claim against the I.P. College for rejection of his proposal.
- 1.2.8 Earnest Money Deposit (EMD) to be furnished by the Tenderer for the amount as mentioned in NIT in favor of *Indraprastha College* in the form of demand draft drawn on any Scheduled bank payable at New Delhi.

**Principal**  
Indraprastha College for Women

**SECTION – II**  
**FORM OF TENDER**

To,  
.....,  
.....,  
.....,  
.....,

Dear Sir,

**Subject: Addition and Alteration of K.G. Girls Hostel at Indraprastha College for Women, Delhi**

I/We have read and examined the notice inviting tender, Form of Tender, Article of Agreement, Instructions to Tenderer, General Conditions of Contract, Special Conditions for Cement and Steel and Tenderer Financial Offer, Testing of Materials & Brief specifications, Drawings and other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified as above within the time specified viz. schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred in the General Rules, Directions and in Clauses of the Conditions of Contract.

I/We have deposited as Earnest Money **Rs. 23,24,338/- (Rs. Twenty Three Lakh Twenty Four Thousand Three Thirty Eight Only)** by a Demand Draft drawn in favor of “Indraprastha college” payable at New Delhi from any scheduled bank. I/We do hereby agree that this amount shall not bear any interest and shall be forfeited by you in the event of your tender is accepted and if I/We fail to execute the contract agreement or to commence the works at site when called upon to do so.

|                    |                              |   |
|--------------------|------------------------------|---|
| Dated.....         | Signature of Contractor..... | } |
| Name -----         | Postal Address: -.....       |   |
| Witness: -..... ** | _____                        |   |
| Address: -.....    | _____                        |   |
| Occupation: -..... | Telephone No. _____ **       |   |
|                    | Fax:- _____                  |   |
|                    | E-Mail:- _____               |   |

ii)

Dated.....  
Name -----  
Address: - ..... \* \*  
Occupation: -.....

**\*\* To be filled in by the Contractor.**

**COMBINED ABSTRACT**

**Name of work : Addition and Alteration of K.G. Girls Hostel at I.P. College,  
Delhi**

| <b>S. NO.</b> | <b>DESCRIPTION OF HEAD</b> |            | <b>AMOUNT</b> |
|---------------|----------------------------|------------|---------------|
| 1.0           | CIVIL WORK                 | Rs.        |               |
| 2.0           | ELECTRICAL WORK            | Rs.        |               |
| 3.0           | FIRE FIGHTING WORK         | Rs.        |               |
| 4.0           | AIR-COOL SYSTEM WORK       | Rs.        |               |
|               | <b>Total</b>               | <b>Rs.</b> |               |

**ABSTRACT OF COST**

**(1.0) CIVIL WORKS**

**Name of work : Addition and Alteration of K.G. Girls Hostel at I.P. College,  
Delhi**

| <b>S. NO.</b> | <b>ITEM OF CIVIL WORK</b> |            | <b>AMOUNT</b> |
|---------------|---------------------------|------------|---------------|
| 1.0           | EARTH WORK                | Rs.        |               |
| 2.0           | CONCRETE WORK             | Rs.        |               |
| 3.0           | R.C.C. WORK               | Rs.        |               |
| 4.0           | BRICK WORK                | Rs.        |               |
| 5.0           | STEEL WORK                | Rs.        |               |
| 6.0           | FLOORING WORK             | Rs.        |               |
| 7.0           | ROOFING WORK              | Rs.        |               |
| 8.0           | FINISHING WORK            | Rs.        |               |
| 9.0           | WOOD WORK                 | Rs.        |               |
| 10.0          | ALUMINIUM WORK            | Rs.        |               |
| 11.0          | SANITARY INSTALLATION     | Rs.        |               |
| 12.0          | WATER SUPPLY              | Rs.        |               |
| 13.0          | DRAINAGE                  | Rs.        |               |
|               | <b>TOTAL</b>              | <b>Rs.</b> |               |

**ABSTRACT OF COST**

**(2.0) ELECTRICAL WORKS**

**Name of work : Addition and Alteration of K.G. Girls Hostel at I.P. College, Delhi**

| <b>SR. NO.</b> | <b>ITEM OF ELECTRICAL WORK</b>    |            | <b>AMOUNT</b> |
|----------------|-----------------------------------|------------|---------------|
| 1.0            | POINT WIRING                      | Rs.        |               |
| 2.0            | DISTRIBUTION BOARD                | Rs.        |               |
| 3.0            | MV CABLE                          | Rs.        |               |
| 4.0            | CABLE TRAY                        | Rs.        |               |
| 5.0            | EARTHING                          | Rs.        |               |
| 6.0            | TELEPHONE & TV SYSTEM             | Rs.        |               |
| 7.0            | FIRE DETECTION & ALARM SYSTEM     | Rs.        |               |
| 8.0            | SUPPLY OF LIGHT FIXTURE           | Rs.        |               |
| 9.0            | DISTRIBUTION PANEL                | Rs.        |               |
| 10.0           | INVERTER FOR EMERGENCY LIGHTING   | Rs.        |               |
| 11.0           | CCTV SYSTEM (CONVENTIONAL)        | Rs.        |               |
| 12.0           | LIGHTNING PROTECTION SYSTEM (ESE) | Rs.        |               |
|                | <b>TOTAL</b>                      | <b>Rs.</b> |               |

| <b><u>ABSTRACT OF COST</u></b>  |   |            |               |
|---|---|------------|---------------|
| <b>(3.0) FIRE FIGHTING WORKS</b>  |   |            |               |
| <b>Name of work : Addition and Alteration of K.G. Girls Hostel at I.P. College, Delhi</b> |   |            |               |
| <b>SR. NO.</b>  | <b>ITEM OF FIRE FIGHTING WORK</b>       |            | <b>AMOUNT</b> |
| 1.0   | PIPING & VALVES                         | Rs.        |               |
| 2.0   | FIRE HYDRANT ACCESSORIES                | Rs.        |               |
| 3.0   | FIRE EXTINGUISHERS & MISC. ITEMS        | Rs.        |               |
| 4.0   | TERRACE FIRE FIGHTING PUMPS & EQUIPMENT | Rs.        |               |
|   | <b>TOTAL</b>                            | <b>Rs.</b> |               |

**SCHEDULE OF QUANTITIES****(1.0) CIVIL WORKS**

Name of work : Addition and Alteration of K.G. Girls Hostel at I.P. College, Delhi

| Item No.    | Description of Item   | Quantity | Unit | Rate       | Amount |
|-------------|---|----------|------|------------|--------|
| <b>1.00</b> | <b><u>EARTH WORK</u></b>  |          |      |            |        |
| 1.01        | Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. |          |      |            |        |
| 1.01.1      | a) All kinds of soil  | 1,790.00 | Cum  |            |        |
| 1.02        | Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.   | 1,140.00 | Cum  |            |        |
| 1.03        | Supplying and filling in plinth with Jamuna sand under floors, including watering, ramming, consolidating and dressing complete.  | 110.00   | Cum  |            |        |
|             | <b>Total Earth Work :</b>   |          |      | <b>Rs.</b> |        |
| <b>2.00</b> | <b><u>CONCRETE WORK</u></b>   |          |      |            |        |
| 2.01        | Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :  |          |      |            |        |
| 2.01.1      | a) 1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)   | 210.00   | Cum  |            |        |
| 2.01.2      | b) 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)   | 165.00   | Cum  |            |        |
| 2.02        | Providing and laying damp-proof course 40 mm thick with cement concrete 1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 12.5mm nominal size).  | 160.00   | Sqm  |            |        |
| 2.03        | Applying a coat of residual petroleum bitumen of penetration 80/100 of approved quality using 1.7 kg 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.  | 160.00   | Sqm  |            |        |
| 2.04        | Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size) over 75mm bed of dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth.   | 375.00   | Sqm  |            |        |
|             | <b>Total Cement Concrete work :</b>   |          |      | <b>Rs.</b> |        |



| Item No.    | Description of Item   | Quantity    | Unit | Rate       | Amount |
|-------------|---|-------------|------|------------|--------|
| <b>3.00</b> | <b><u>R.C.C. WORK</u></b>   |             |      |            |        |
| 3.01        | 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).  |             |      |            |        |
| 3.01.1      | a) All works upto plinth level  | 540.00      | Cum  |            |        |
| 3.01.2      | b) All works above plinth level upto floor V level  | 2,080.00    | Cum  |            |        |
| 3.02        | Centering and shuttering including strutting, propping etc. and removal of form for :   |             |      |            |        |
| 3.02.1      | Foundations, footings, bases of columns, etc. for mass concrete   | 990.00      | Sqm  |            |        |
| 3.02.2      | Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12 mm thick  | 7,650.00    | Sqm  |            |        |
| 3.02.3      | Suspended floors, roofs, landings, balconies and access platform  | 5,280.00    | Sqm  |            |        |
| 3.02.4      | Columns, Pillars, Piers, Abutments, Posts and Struts  | 4,526.00    | sqm  |            |        |
| 3.03        | Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.  |             |      |            |        |
| 3.03.1      | a) Thermo-Mechanically Treated bars   | 75,985.00   | Kg   |            |        |
| 3.04        | Reinforcement for RCC work including straightening, cutting, bending, placing in position and binding all complete. Above plinth level.   |             |      |            |        |
| 3.04.1      | a) Thermo-Mechanically Treated bars   | 2,83,620.00 | Kg   |            |        |
|             | <b>Total R.C.C. Work :</b>  |             |      | <b>Rs.</b> |        |
| <b>4.00</b> | <b><u>BRICK WORK</u></b>  |             |      |            |        |
| 4.01        | Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:   |             |      |            |        |
| 4.01.1      | a) Cement mortar 1:4 (1 cement : 4 coarse sand)   | 105.00      | Cum  |            |        |
| 4.02        | 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 :  |             |      |            |        |
| 4.02.1      | a) Cement mortar 1:4 (1 cement : 4 coarse sand)   | 1,796.00    | Cum  |            |        |
| 4.03        | 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.  |             |      |            |        |
| 4.03.1      | Cement mortar 1:4 (1 cement :4 coarse sand)   | 1,485.00    | Sqm  |            |        |

| Item No.    | Description of Item  | Quantity | Unit  | Rate       | Amount |
|-------------|--|----------|-------|------------|--------|
| 4.04        | Extra for providing and placing in position 2 nos. 6mm dia MS bars at every third course of half brick masonry (with FPS bricks).  | 1,485.00 | Sqm   |            |        |
| 4.05        | Brick edging 7cm wide 11.4 cm deep to plinth protection with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 including grouting with cement mortar 1:4 (1 cement : 4 fine sand).  | 450.00   | Metre |            |        |
|             | <b>Total Brick Work :</b>  |          |       | <b>Rs.</b> |        |
| <b>5.00</b> | <b>STEEL WORK</b>  |          |       |            |        |
| 5.01        | Providing and fixing M.S. Tubular frames for doors, windows, ventilators and cupboard with rectangular/ L-Type sections, made of 1.60 mm thick M.S. Sheet, joints mitred, welded and grinded finish, with profiles of required size, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer.  |          |       |            |        |
| 5.01.1      | Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)   | 34650.00 | kg    |            |        |
| 5.02        | Providing and fixing circular/hexagonal cast iron M.S. sheet box for ceiling clamp of internal dia 140 mm, 73 mm height, top lid of 1.5 mm M.S. sheet with its top surface hached for proper bonding top Lids shall be screwed into cast iron/M.S. box by means of 3.3 mm round headed screws, one locked at the corner. Clamps shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing.   | 400.00   | Each  |            |        |
| 5.03        | Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.). | 2,600.00 | kg    |            |        |
|             | <b>Total Steel Work :</b>  |          |       | <b>Rs.</b> |        |

| Item No.    | Description of Item  | Quantity | Unit  | Rate | Amount |
|-------------|--|----------|-------|------|--------|
| <b>6.00</b> | <b><u>FLOORING</u></b>   |          |       |      |        |
| 6.01        | 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. |          |       |      |        |
| 6.01.1      | Granite of any colour and shade  |          |       |      |        |
| 6.01.1.1    | Area of slab over 0.50 sqm   | 1805.00  | Sqm   |      |        |
| 6.02        | Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.   |          |       |      |        |
| 6.02.1      | Granite work   | 675.00   | metre |      |        |
| 6.03        | Providing and laying vitrified floor tiles (Double charged polished) 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), including grouting the joints with white cement and matching pigments etc., complete. (Basic Rate - Rs 60sqft)   |          |       |      |        |
| 6.03.1      | Size of Tile 600x600 mm  | 3,775.00 | Sqm   |      |        |
| 6.04        | Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), including grouting the joint with white cement & matching pigments etc. complete.  |          |       |      |        |
| 6.04.1      | Size of Tile 600x600 mm  | 770.00   | Sqm   |      |        |
| 6.05        | 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.       | 3220.00  | Sqm   |      |        |
| 6.06        | Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), including pointing the joints with white cement and matching pigment etc., complete.  | 400.00   | Sqm   |      |        |

| Item No.    | Description of Item  | Quantity | Unit | Rate       | Amount |
|-------------|--|----------|------|------------|--------|
| 6.07        | 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) :  |          |      |            |        |
| 6.07.1      | a) 25 mm thick   | R.O.     | Sqm  |            |        |
|             | <b>Total Flooring Work :</b>   |          |      | <b>Rs.</b> |        |
| <b>7.00</b> | <b><u>ROOFING</u></b>  |          |      |            |        |
| 7.01        | <p>Water Proofing in Sunken Portions:-</p> <p>1) Providing and laying integral acrylic cement based waterproofing treatment including preparation of surface as required for treatment of sunken portion etc. consisting following operations:The sub-base (R.C.C.) of the sunken portion should be cleaned of all dirt, loose material and kept dry. In case of pot holes/cracks, the same shall be repaired with cement putty using bonding agent like SIKA LATEX or approved equivalent.</p> <p>2) Providing and laying two coats of single-component polymer modified heavy-duty cementitious material like CEMFLEX in the ratio of 1:2 with 1 part chemical and 2 parts cement. Material to be applied over a pre wetted surface, while not having stagnated water sand witching glass fiber mesh between the two coats.</p> <p>3) Over the base waterproof coating, providing and laying 12 - 15mm thick cement mortar plaster of mix 1:4 with 1 part cement and 4 part coarse sand admixed with proprietary waterproofing compound confirming to IS 2645 like PLASTOCRETE PLUS and 100% virgin homopolymer polypropylene multifilament fibers confirming to ASTM C-1116 like FIBERMESH STEALTH applied @ 0.9Kg/cum of mix</p> | 335.00   | sqm  |            |        |
| 7.02        | <p>Water Proofing on Terrace Area:-</p> <p>1) The sub-base (R.C.C.) of the roof top structure should be cleaned of all dirt, loose material and kept dry. In case of pot holes/cracks, the same shall be repaired with Sika Latex putty mixed with cement mortar.</p> <p>2) A proper Gola has to be provided all throughout the junction of roof and parapet with cement mortar of mix 1:4 admixed with approved integral waterproofing compound conforming to IS: 2645 like PLASTOCRETE PLUS @ 0.2% by wt. of cement.</p> <p>3) Providing and laying two coat of single-component polymer modified heavy-duty cementitious material like CEMFLEX in the ratio of 1:2 with 1 part chemical and 2 parts cement. Material to be applied over a pre wetted surface, while not having stagnated water.</p> <p>4) Providing and laying 12-15mm thick protective plaster over the sub-base waterproofing treatment of mix 1:4 with 1 part cement and 4 part coarse sand admixed with waterproofing compound and fibres as per the manufacturers specifications</p>   |          |      |            |        |

| Item No. | Description of Item  | Quantity | Unit  | Rate | Amount |
|----------|--|----------|-------|------|--------|
|          | 5) Laying broken bricks/brick bats of 25mm to 100 mm size with 50% of cement mortar 1:4 (1 cement: 4 coarse sand) admixed with proprietary waterproofing compound conforming to IS 2645 like PLASTOCRETE PLUS over a 20mm thick layer of cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed with waterproofing compound as above, to required slope and treating similarly the adjoining walls upto 300mm height including rounding of the junctions of the walls and slab.<br>6) After 2 days of curing applying a coat of cement slurry admixed with proprietary waterproofing compound conforming to IS 2645 like PLASTOCRETE PLUS or equivalent.<br>7) Finishing the surface with 20mm thick plaster with cement-sand mortar of mix (1:4) admixed with approved integral waterproofing compound conforming to IS: 2645 like PLASTOCRETE PLUS @ 0.2% by wt. of cement. Plaster shall be finished smooth with cement slurry topping having 300X300mm artificial grooves | 2,245.00 | sqm   |      |        |
| 7.03     | Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.  | 60.00    | Each  |      |        |
| 7.04     | Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.   |          |       |      |        |
| 7.04.1   | 110 mm diameter  | 660.00   | Metre |      |        |
| 7.05     | Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.  |          |       |      |        |
| 7.05.1   | Single tee with door   |          |       |      |        |
| 7.05.1.1 | 110x110x110 mm   | 60.00    | Each  |      |        |
| 7.05.2   | Bend 87.5°   |          |       |      |        |
| 7.05.2.1 | 110 mm bend  | 60.00    | Each  |      |        |
| 7.05.3   | Shoe (Plain)   |          |       |      |        |
| 7.05.3.1 | 110 mm Shoe  | 60.00    | Each  |      |        |
| 7.06     | Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.  |          |       |      |        |
| 7.06.1   | 110 mm   | 450.00   | Each  |      |        |

| Item No.    | Description of Item  | Quantity  | Unit  | Rate       | Amount |
|-------------|--|-----------|-------|------------|--------|
| 7.07        | Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams.  | 60.00     | Each  |            |        |
| 7.08        | Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design :   |           |       |            |        |
| 7.08.1      | In 75x75 mm deep chase   | 460.00    | Metre |            |        |
|             | <b>Total Roofing Work :</b>  |           |       | <b>Rs.</b> |        |
| <b>8.00</b> | <b><u>FINISHING</u></b>  |           |       |            |        |
| 8.01        | 12 mm cement plaster of mix :  |           |       |            |        |
| 8.01.1      | 1:6 (1 cement: 6 fine sand)  | 9,060.00  | Sqm   |            |        |
| 8.02        | 15 mm cement plaster on the rough side of single or half brick wall of mix :   |           |       |            |        |
| 8.02.1      | 1:6 (1 cement: 6 fine sand)  | 10,020.00 | Sqm   |            |        |
| 8.02        | 6 mm cement plaster to ceiling of mix :  |           |       |            |        |
| 8.02.1      | a) 1:3 (1 cement : 3 fine sand)  | 5280.00   | Sqm   |            |        |
| 8.03        | Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade :   |           |       |            |        |
| 8.03.1      | New work (two or more coats) over and including water tinnable priming coat with cement primer   | 12,750.00 | Sqm   |            |        |
| 8.04        | Finishing walls with Acrylic Smooth exterior paint of required shade :   |           |       |            |        |
| 8.04.1      | New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm)   | 11,600.00 | Sqm   |            |        |
| 8.05        | Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.  | 750.00    | Sqm   |            |        |
|             | <b>Total Finishing Work :</b>  |           |       | <b>Rs.</b> |        |
| <b>9.00</b> | <b><u>WOOD WORK</u></b>  |           |       |            |        |
| 9.01        | Providing and fixing panelled or panelled and glazed shutters for doors, windows and clerestory windows including ISI marked black enameled MS but hinges with necessary screws excluding, paneling which will be paid for separately.   |           |       |            |        |
| 9.01.1      | i) 35 mm thick - Kiln seasoned and chemically treated hollock wood.  | R.O.      | Sqm   |            |        |
| 9.02        | Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25 mm to 40 mm thick. |           |       |            |        |
| 9.02.1      | Fly proof stainless steel grade 304 wire gauge with 0.5 mm dia. wire and 1.4 mm wide aperture with matching wood beading   | 18.00     | Sqm   |            |        |

| Item No. | Description of Item  | Quantity | Unit | Rate       | Amount |
|----------|--|----------|------|------------|--------|
| 9.03     | Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood laminated - both sides 1 mm thick                         |          |      |            |        |
| 9.03.1   | 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws   | 205.00   | Sqm  |            |        |
| 9.04     | Providing and fixing aluminium sliding door bolts, ISI marked anodised anodic coating not less than grade AC 10 as per IS 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete :             |          |      |            |        |
| 9.04.1   | 250x16 mm  | 274.00   | Each |            |        |
| 9.05     | Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868 ) transparent or dyed to required colour or shade, with necessary screws etc. complete                 |          |      |            |        |
| 9.05.1   | 250x10 mm  | 274.00   | Each |            |        |
| 9.05.2   | 150x10 mm  | 590.00   | Each |            |        |
| 9.06     | 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. |          |      |            |        |
| 9.06.1   | Twin rubber stopper  | 130.00   | Each |            |        |
|          | <b>Total Wood Work :</b>   |          |      | <b>Rs.</b> |        |

| Item No.     | Description of Item  | Quantity | Unit  | Rate       | Amount |
|--------------|--|----------|-------|------------|--------|
| <b>10.00</b> | <b><u>ALUMINIUM WORK</u></b>   |          |       |            |        |
| 10.01        | Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, panelling and dash fasteners to be paid for separately) : |          |       |            |        |
| 10.01.1      | For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)  |          |       |            |        |
| 10.01.1.1    | Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)   | 7,550.00 | Kg    |            |        |
| 10.02        | 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):   |          |       |            |        |
| 10.02.1      | With float glass panes of 5.50 mm thickness  | 305.00   | Sqm   |            |        |
| 10.03        | 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.  |          |       |            |        |
| 10.03.1      | Upto 5mm depth and 5 mm width  | 2,550.00 | metre |            |        |
| 10.04        | 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.  |          |       |            |        |
| 10.04.1      | Anodized (AC 15) aluminium tubular handle bar  | 1,690.00 | Each  |            |        |
|              | <b>Total Aluminium Work :</b>  |          |       | <b>Rs.</b> |        |
| <b>11.00</b> | <b><u>SANITARY INSTALLATIONS</u></b>   |          |       |            |        |
| 11.01        | Providing and fixing white vitreous china pedestal type water closet Wall mounted with cistern (European type) with soft closing seat and lid, C.P. brass hinges and rubber buffers, 3/6 liters low level vitreous china flushing cistern with fittings complete including cutting and making good the walls and floors wherever required (Make: Parryware Cat. No. "Qube" C844A Coupled or equivalent to Cera, Rocca, Cistern)  | 48.00    | Each  |            |        |



| Item No.  | Description of Item   | Quantity | Unit  | Rate | Amount |
|-----------|---|----------|-------|------|--------|
| 11.02     | Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required (Hindware / Parryware or equivalent brand) |          |       |      |        |
| 11.02.1   | White Vitreous China Flat back wash basin size 550x400 mm with single 15 mm C.P. brass pillar tap   | 52.00    | Each  |      |        |
| 11.03     | 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 :                                |          |       |      |        |
| 11.03.1   | Kitchen sink without drain board  |          |       |      |        |
| 11.03.1.1 | 610x510mm bowl depth 200mm  | R.O.     | Each  |      |        |
| 11.04     | Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.   |          |       |      |        |
| 11.04.1   | Flexible pipe   |          |       |      |        |
| 11.04.1.1 | 32 mm dia   | 52.00    | Each  |      |        |
| 11.04.1.2 | 40 mm dia   | R.O.     | Each  |      |        |
| 11.05     | Providing and fixing 100 mm sand cast Iron grating for gully trap.  | 32.00    | Each  |      |        |
| 11.06     | Providing and fixing 600x450 mm bevelled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.   | 22.00    | Each  |      |        |
| 11.07     | Providing and fixing toilet paper holder :  |          |       |      |        |
| 11.07.1   | C.P brass   | 30.00    | Each  |      |        |
| 11.08     | Providing and fixing soil, waste and vent pipes:  |          |       |      |        |
| 11.08.1   | 110 mm dia  |          |       |      |        |
| 11.08.1.1 | uPVC class-B as per IS:13592  | 275.00   | Metre |      |        |
| 11.09     | Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.   |          |       |      |        |
| 11.09.1   | 110 mm dia  |          |       |      |        |
| 11.09.1.1 | uPVC SWR Pipe Fitting conforming to IS:14375  | 50.00    | Each  |      |        |
| 11.10     | Providing and fixing plain bend of required degree.   |          |       |      |        |
| 11.10.1   | 110 mm dia  |          |       |      |        |
| 11.10.1.1 | uPVC SWR Pipe Fitting conforming to IS:14375  | 50.00    | Each  |      |        |
| 11.11     | Providing and fixing single equal plain junction of required degree :   |          |       |      |        |
| 11.11.1   | 110 mm dia  |          |       |      |        |
| 11.11.1.1 | uPVC SWR Pipe Fitting conforming to IS:14375  | 230.00   | Each  |      |        |
| 11.12     | Providing and fixing uPVC P-Trap (Short) 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.  |          |       |      |        |
| 11.12.1   | 110mm x 110mm   |          |       |      |        |
| 11.12.1.1 | uPVC SWR Pipe Fitting conforming to IS:14375  | 110.00   | Each  |      |        |

| Item No.     | Description of Item  | Quantity | Unit  | Rate       | Amount |
|--------------|--|----------|-------|------------|--------|
| 11.13        | Providing and fixing 150mm dia.. C.P. brass towel ring with C.P. brass brackets fixed to raw plugs fixed with C.P. brass screws complete including cutting and making good the walls wherever required. (Make: Paryyware Cat No. T6002A1 or Equivalent of TOTO)  | 25.00    | Each  |            |        |
|              | <b>Total Sanitary Installation :</b>   |          |       | <b>Rs.</b> |        |
| <b>12.00</b> | <b><u>WATER SUPPLY</u></b>   |          |       |            |        |
| 12.01        | 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.   |          |       |            |        |
|              | <b>Internal work - Exposed on wall</b>   |          |       |            |        |
| 12.01.1      | 20 mm nominal outer dia Pipes  | 220.00   | Metre |            |        |
| 12.02        | 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. |          |       |            |        |
| 12.02.1      | 15 mm nominal outer dia Pipes  | 365.00   | Metre |            |        |
| 12.03        | Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement ,trenching ,refilling & testing of joints complete as per direction of Engineer in Charge.  |          |       |            |        |
|              | <b>External work</b>   |          |       |            |        |
| 12.03.1      | 15 mm nominal outer dia Pipes  | 15.00    | Metre |            |        |
| 12.03.2      | 20 mm nominal outer dia Pipes  | 40.00    | Metre |            |        |
| 12.03.3      | 25 mm nominal outer dia Pipes  | 40.00    | Metre |            |        |
| 12.04        | 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 :  |          |       |            |        |
| 12.04.1      | 25 to 40 mm nominal bore   | 40.00    | Each  |            |        |
| 12.05        | Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :  |          |       |            |        |
| 12.05.1      | 25 mm nominal bore   | 42.00    | Each  |            |        |
| 12.06        | Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :  |          |       |            |        |
| 12.06.1      | 15 mm nominal bore   | 42.00    | Each  |            |        |

| Item No.     | Description of Item  | Quantity | Unit  | Rate       | Amount |
|--------------|--|----------|-------|------------|--------|
| 12.07        | Providing and fixing uplasticised PVC connection pipe with brass unions :  |          |       |            |        |
| 12.07.1      | 45 cm length   |          |       |            |        |
| 12.07.1.1    | 15 mm nominal bore   | 140.00   | Each  |            |        |
| 12.08        | Providing and filling sand of grading zone V or coarser grade all-round the G.I. pipes in external work.   |          |       |            |        |
| 12.08.1      | 15 mm diameter pipe  | 15.00    | Metre |            |        |
| 12.08.2      | 20 mm diameter pipe  | 40.00    | Metre |            |        |
| 12.08.3      | 25 mm diameter pipe  | 40.00    | Metre |            |        |
| 12.09        | Providing and fixing G.I. Union in G.I. pipes including cutting and threading the pipe and making long screws etc. complete. (New work)  |          |       |            |        |
| 12.09.1      | 15 mm dia. nominal bore  | 130.00   | Each  |            |        |
| 12.09.2      | 20 mm dia. nominal bore  | 80.00    | Each  |            |        |
| 12.09.3      | 25 mm dia. nominal bore  | 65.00    | Each  |            |        |
| 12.10        | Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 :   |          |       |            |        |
| 12.10.1      | 15 mm nominal bore   | 140.00   | Each  |            |        |
| 12.11        | Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931  |          |       |            |        |
| 12.11.1      | 15 mm nominal bore   | 48.00    | Each  |            |        |
|              | <b>Total Water Supply :</b>  |          |       | <b>Rs.</b> |        |
| <b>13.00</b> | <b><u>DRAINAGE</u></b>   |          |       |            |        |
| 13.01        | Providing, laying and jointing HDPE pipes PE-80 grade PN6 including testing of joints etc. complete :  |          |       |            |        |
| 13.01.1      | 200 mm diameter  | 290.00   | Metre |            |        |
| 13.02        | Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design :   |          |       |            |        |
| 13.02.1      | 100 x 100 mm size P type   |          |       |            |        |
| 13.02.1.1    | With common burnt clay F.P.S. (non modular) bricks of class designation 7.5  | 15.00    | Each  |            |        |
| 13.03        | Constructing brick masonry manhole in cement mortar 1:4 ( 1 cement : 4 coarse sand ) with R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design : |          |       |            |        |

| Item No.  | Description of Item   | Quantity | Unit  | Rate       | Amount |
|-----------|---|----------|-------|------------|--------|
| 13.03.1   | Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal frame 15 kg) 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) :   |          |       |            |        |
| 13.03.1.1 | With common burnt clay F.P.S. (non modular) bricks of class designation 7.5   | 40.00    | Each  |            |        |
| 13.04     | Extra for depth for manholes :  |          |       |            |        |
| 13.04.1   | Size 90 x 80 cm   |          |       |            |        |
| 13.04.1.1 | With common burnt clay F.P.S. (non modular) bricks of class designation 7.5   | 8.00     | Metre |            |        |
| 13.05     | Making connection of drain or sewer line with existing manhole including breaking 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 cement 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 : |          |       |            |        |
| 13.05.1   | For pipes 250 to 300 mm diameter  | 5.00     | Each  |            |        |
|           | <b>Total Drainage :</b>   |          |       | <b>Rs.</b> |        |

**SCHEDULE OF QUANTITIES****(2.0) ELECTRICAL WORKS**

Name of work : Addition and Alteration of K.G. Girls Hostel at I.P. College, Delhi

| Item No.    | Description of Item  | Unit  | Quantity | Rate | Amount |
|-------------|--|-------|----------|------|--------|
|             | <b>SCHEDULE ITEMS</b>  |       |          |      |        |
| <b>1.00</b> | <b>POINT WIRING</b>  |       |          |      |        |
| 1           | Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required. |       |          |      |        |
| 1.1         | Group A  | Point | R.O      |      |        |
| 1.2         | Group B  | Point | R.O      |      |        |
| 1.3         | Group C  | Point | 1150.00  |      |        |
| 2           | Wiring for twin control light point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required.                                  | Point | R.O      |      |        |
| 3           | Wiring for power plug with 2X4 sq. mm FR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit alongwith 1 No 4 sq. mm FR PVC insulated copper conductor single core cable for loop earthing as required.   | Metre | 875.00   |      |        |
| 4           | Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FR PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required   |       |          |      |        |
| 4.1         | 2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire   | Metre | 875.00   |      |        |
| 4.2         | 2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire   | Metre | 1950.00  |      |        |
| 4.3         | 2 X 6 sq. mm + 1 X 6 sq. mm earth wire   | Metre | R.O      |      |        |
| 4.4         | 4 X 10 sq. mm + 2 X 10 sq. mm earth wire   | Metre | 750.00   |      |        |
| 5           | Supplying and drawing following pair 0.5 sq mm FR PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required.   |       |          |      |        |
| 5.1         | 2 Pair   | Metre | 250.00   |      |        |
| 6           | Supplying and drawing co-axial 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 | 250.00   |      |        |

| Item No. | Description of Item  | Unit  | Quantity | Rate       | Amount |
|----------|--|-------|----------|------------|--------|
| 7        | Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required (For Telephone/ TV Cable) |       |          |            |        |
| 7.1      | 25 mm  | Metre | 468.00   |            |        |
| 8        | Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.   |       |          |            |        |
| 8.1      | 5/6 amp switch   | Each  | 1000.00  |            |        |
| 8.2      | Two way 5/6 amp switch   | Each  | R.O      |            |        |
| 8.3      | 15/16 amp switch   | Each  | 31.00    |            |        |
| 8.4      | 3 pin 5/6 amp socket outlet  | Each  | 1000.00  |            |        |
| 8.5      | 6 pin 15/16 amp socket outlet  | Each  | 32.00    |            |        |
| 8.6      | Telephone socket outlet  | Each  | 15.00    |            |        |
| 8.7      | TV antenna socket outlet   | Each  | 8.00     |            |        |
| 8.8      | Bell push  | Each  | 5.00     |            |        |
| 9        | Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.  | Each  | 250.00   |            |        |
| 10       | Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.  | Each  | R.O      |            |        |
| 11       | Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular switches in recess etc as required.  |       |          |            |        |
| 11.1     | 1 or 2 Module (75mmX75mm)  | Each  | 1165.00  |            |        |
| 11.2     | 3 Module (100mmX75mm)  | Each  | 1000.00  |            |        |
| 11.3     | 4 Module (125mmX75mm)  | Each  | 32.00    |            |        |
| 11.4     | 6 Module (200mmX75mm)  | Each  | 5.00     |            |        |
| 11.5     | 8 Module (125mmX125mm)   | Each  | 2.00     |            |        |
| 12       | Supplying and fixing 3 pin, 5 amp ceiling rose on the existing junction box/ wooden block including connection etc as required.  | Each  | 19.00    |            |        |
| 13       | Supplying and fixing brass batten/ angle holder including connection etc. as required.   | Each  | R.O      |            |        |
| 14       | Erection of wall bracket /ceiling fittings of all sizes and shapes containing upto two GLS lamps per fitting, complete with all accessories including connection etc. as required.   | Each  | 1110.00  |            |        |
| 15       | Supplying and fixing call bell/ buzzer suitable for single phase, 230 volts, complete as required.   | Each  | 5.00     |            |        |
|          | <b>Total carried over to Summary</b>   |       |          | <b>Rs.</b> |        |

| Item No.    | Description of Item  | Unit  | Quantity | Rate       | Amount |
|-------------|--|-------|----------|------------|--------|
| <b>2.00</b> | <b>DISTRIBUTION BOARD</b>  |       |          |            |        |
| 1           | Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc.as required. (But without MCB/RCCB/Isolator)  |       |          |            |        |
| 1.1         | 2 + 4 way, double door   | Each  | 1.00     |            |        |
| 1.2         | 2 + 6 way, double door   | Each  | 3.00     |            |        |
| 1.3         | 2 + 8 way, double door   | Each  | 1.00     |            |        |
| 1.4         | 2 + 12 way, double door  | Each  | 7.00     |            |        |
| 2           | Supplying and fixing following way, horizontal type Three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/ RCCB/ Isolator)                        |       |          |            |        |
| 2.1         | 6 way (4 + 18), double door  | Each  | R.O      |            |        |
| 2.2         | 8 way (4 + 24), double door  | Each  | R.O      |            |        |
| 3           | Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.  |       |          |            |        |
| 3.1         | Single pole  | Each  | 400.00   |            |        |
| 4           | Supplying and fixing following rating, double pole, 240 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.  |       |          |            |        |
| 4.1         | 40 amps  | Each  | 5.00     |            |        |
| 5           | Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.  |       |          |            |        |
| 5.1         | 63 amps  | Each  | 15.00    |            |        |
| 6           | Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top alongwith 20 amps "C" curve, SP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required. (For AC) | Each  | 16.00    |            |        |
|             | <b>Total carried over to Summary</b>   |       |          | <b>Rs.</b> |        |
| <b>3.00</b> | <b>MV CABLE</b>  |       |          |            |        |
| 1           | Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.  |       |          |            |        |
| 1.1         | Upto 35 sq. mm   | Metre | R.O      |            |        |
| 1.2         | Above 35 sq. mm and upto 95 sq. mm   | Metre | 75       |            |        |
| 1.3         | Above 95 sq. mm and upto 185 sq. mm  | Metre | R.O      |            |        |
| 1.4         | Above 185 sq. mm and upto 400 sq. mm   | Metre | R.O      |            |        |

| Item No.    | Description of Item  | Unit  | Quantity | Rate       | Amount |
|-------------|--|-------|----------|------------|--------|
| 2           | Laying and fixing of one number PVC insulated and PVC sheathed/ XLPE power cable of 1.1 KV grade of following size on cable tray as required.  |       |          |            |        |
| 2.1         | Upto 35 sq. mm (clamped with 1mm thick saddle)   | Metre | R.O      |            |        |
| 2.2         | Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)   | Metre | 40       |            |        |
| 2.3         | Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)   | Metre | R.O      |            |        |
| 2.4         | Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)   | Metre | R.O      |            |        |
| 3           | Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.  |       |          |            |        |
| a.          | 3½ X 50 sq. mm (35mm)  | each  | R.O      |            |        |
| b.          | 3½ X 70 sq. mm (38mm)  | each  | R.O      |            |        |
| c.          | 3½ X 95 sq. mm (45mm)  | each  | 2        |            |        |
| d.          | 3½ X 120 sq. mm (45mm)   | each  | R.O      |            |        |
| 4           | Supplying of following sizes of 1.1 KV XLPE insulated Aluminium /Copper conductor armoured cables in existing hume pipe or laid in existing trenches or laid and tied on existing overhead cable trays; complete as required and as per specifications complete as required and as per specifications. |       |          |            |        |
| b.          | 3.5 x 120 sq.mm. Aluminium Cable   | RM    | R.O      |            |        |
| c.          | 3.5 x 95 sq.mm. Aluminium Cable  | RM    | 115      |            |        |
| d.          | 3.5 x 50 sq.mm. Aluminium Cable  | RM    | R.O      |            |        |
| e.          | 4 x 35 sq.mm. Aluminium Cable  | RM    | R.O      |            |        |
|             | <b>Total carried over to Summary</b>   |       |          | <b>Rs.</b> |        |
| <b>4.00</b> | <b>CABLE TRAY</b>  |       |          |            |        |
| 1           | Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.                  |       |          |            |        |
| 1.1         | 100 mm width X 50 mm depth X 1.6 mm thickness  | RM    | R.O      |            |        |
| 1.2         | 150 mm width X 50 mm depth X 1.6 mm thickness  | RM    | 150      |            |        |
| 1.3         | 200 mm width X 50 mm depth X 1.6 mm thickness  | RM    | 120      |            |        |
| 1.4         | 300 mm width X 50 mm depth X 1.6 mm thickness  | RM    | R.O      |            |        |
|             | <b>Total carried over to Summary</b>   |       |          |            |        |



| Item No.    | Description of Item  | Unit       | Quantity | Rate       | Amount |
|-------------|--|------------|----------|------------|--------|
| <b>5.00</b> | <b>EARTHING:</b>   |            |          |            |        |
| 1           | Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. (but without charcoal/ coke and salt ) as required   | <b>Set</b> | R.O      |            |        |
| 2           | 5.4 Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.  | <b>Set</b> | 2        |            |        |
| 3           | Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. (but without charcoal/ coke and salt ) as required.  | <b>Set</b> | R.O      |            |        |
| 4           | Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.  | <b>SET</b> | R.O      |            |        |
| 5           | Supply and laying in position the following GI tape/wires including providing all fixing accessories and effecting proper connections.   |            |          |            |        |
| 5.1         | 25 x 6 mm GI tape  | RM         | R.O      |            |        |
| 5.2         | 25 x 6 mm GI tape (Laying on Cable Tray)   | RM         | 125      |            |        |
| 5.3         | 50 x 6 mm Cu tape with (PVC insulated heat shrinkable sleeves)   | RM         | 415      |            |        |
|             | <b>Total carried over to Summary</b>   |            |          | <b>RS.</b> |        |
| <b>6.00</b> | <b>TELEPHONE AND TV SYSTEM :</b>   |            |          |            |        |
| 1           | Supplying, fixing, connecting & testing of Telephone Tag Block krone type in a suitable size 1.6 mm thick dust and vermin proof Sheet steel enclosure duly painted by synthetic enamel over anti corrosive primer, lockable and hinged cover with provision for cable through glands complete in all respects. |            |          |            |        |
| 1.1         | 2 pair   | Each       | R.O      |            |        |
| 1.2         | 10 pair  | Each       | 1.00     |            |        |
| 1.3         | 100 pair   | Each       | R.O      |            |        |
| 2           | Supplying, laying, testing and commissioning of following size anealed tinned copper conductor PVC insulated and sheathed armoured copper telephone cables with suitable clamps, saddles and including making terminal joints complete as required.  |            |          |            |        |
| 2.1         | 2 pair   | Mtrs       | R.O      |            |        |
| 2.2         | 10 pair  | Mtrs       | 80.00    |            |        |
| 2.3         | 100 pair   | Mtrs       | R.O      |            |        |

| Item No.    | Description of Item   | Unit  | Quantity | Rate       | Amount |
|-------------|---|-------|----------|------------|--------|
| 3           | Supply, installation, testing and commissioning of 4 Way Tap off Box with junction Box.   | Each  | 2.00     |            |        |
| 4           | Supply, installation, testing and commissioning of 4 Way Splitter.  | Each  | 2.00     |            |        |
|             | <b>Total carried over to Summary</b>  |       |          | <b>Rs.</b> |        |
| <b>7.00</b> | <b>FIRE DETECTION &amp; ALARM SYSTEM</b>  |       |          |            |        |
| 1           | Supply & Installation of 6 Zone Fire Alarm Control Panel  | Nos   | 1        |            |        |
| 2           | Supply of Hooter with strobe with base plate and control module.  | Nos   | 30       |            |        |
| 3           | Supply of MANUAL CALL POINT complete with hammer & chain, M.S. box duly painted in red colour including connections etc. complete as required.  | Nos   | 25       |            |        |
| 4           | Supplying of MS conduits on surface or concealed complete with MS junction boxes, cover plates, MS bends, GI saddles, base and other accessories all made in MS with GI screws as required.   |       |          |            |        |
| 4.1         | 25 mm dia   | RM    | 315      |            |        |
| 5           | Supplying of MS flexible conduits with other accessories as required.   |       |          |            |        |
| 5.1         | 25 mm dia   | RM    | 65       |            |        |
| 6           | Supplying and drawing of following sizes of PVC insulated copper conductor single core cable in the existing surface / recessed steel conduit as required.  |       |          |            |        |
| 6.1         | 2 x 1.5 sq.mm.  | Meter | R.O      |            |        |
| 6.2         | 2 x 2.5 sq.mm.  | Meter | 375      |            |        |
|             | <b>Total carried over to Summary</b>  |       |          | <b>Rs.</b> |        |
| <b>8.00</b> | <b>SUPPLY OF LIGHT FIXTURE</b>  |       |          |            |        |
| 1           | Supply, unloading storing at site of the following fixtures with all accessories,complete with lamps. All the lamps shall be colour 84 or as approved.  |       |          |            |        |
| 1.1         | Philips 24W BCS 460 W162124XLED24/840   | Nos.  | 250.00   |            |        |
| 1.2         | Philips 9W Wall Bracket Light   | Nos.  | 450.00   |            |        |
| 1.3         | Philips 12W LED DN 393B LED 12S 6500PSRWH   | Nos.  | 150.00   |            |        |
| 1.4         | Philips 20W LED Wall Mounted Light  | Nos.  | 225.00   |            |        |
|             | <b>Total carried over to Summary</b>  |       |          | <b>Rs.</b> |        |
| <b>9.00</b> | <b>DISTRIBUTION PANEL</b>   |       |          |            |        |
|             | Design, manufacture, supply,including supervision during installation, testing and commissioning of 2 mm thick MS sheet steel fabricated cubicle type Panel dust and vermin proof complete with hinged and lockable doors . The Sheet Steel shall under go minimum eight tank treatment followed by finishing treatment of powder coating with 70 micron minimum thickness. All the panels shall be floor mounted and dead front construction complete with interconnections. |       |          |            |        |

| Item No. | Description of Item   | Unit | Quantity | Rate | Amount |
|----------|---|------|----------|------|--------|
|          | <b>Note:-</b>   |      |          |      |        |
| a)       | The panels shall be FRONT operated, with cable entry from the top. Earth bus shall be part of the panel.) <b>(All MCB to be "C" Curve)</b>  |      |          |      |        |
| b)       | The following provisions shall be required to be made in the Distribution Panel as detailed below:  |      |          |      |        |
| i)       | All live accessible parts shall be shrouded with 1mm thick polycarbonate/3 mm thick FRP sheet and all equipment shall be finger touch proof. The busbar insulation shall be with heat shrinkable sleeves according to the colour code. SMC shrouds and busbar supports shall be used. All MCCB door handle shall be interlocked and lockable in OFF position. |      |          |      |        |
| ii)      | Galvanised hardware with zinc passivation shall be used in fabrication of Switchboards.   |      |          |      |        |
| iii)     | Suitable Aluminium earth bus to be provided throughout the length of Switchboards.  |      |          |      |        |
| iv)      | All indication lamps / illuminated push buttons shall be LED type.  |      |          |      |        |
| v)       | Coil of all motor starters shall be fed from 440 V / 230 V Control Transformer.   |      |          |      |        |
| vi)      | 2A SP MCBs shall be used as backup protections.   |      |          |      |        |
| vii)     | All MCCBs shall be variable plug setting type with thermal magnetic up to 630 A rating and with microprocessor based releases above 630 A rating, line load reversibility, Ics = 100% Icu, & rotary handle.   |      |          |      |        |
| viii)    | All control & power wiring shall be brought out upto the cable alley in the terminal blocks.  |      |          |      |        |
| ix)      | An approval shall be taken for each panel before manufacturing.   |      |          |      |        |
| x)       | Provision of one 6/16 amp socket & compartment lighting for each vertical section of main panel.  |      |          |      |        |
| xi)      | Illuminated push button on Starter Panels of Pumps.   |      |          |      |        |
| aa)      | Interlocking / Auto start command terminals for starter Panels.   |      |          |      |        |
| ab)      | All breaking Capacity for ACB to be Ics=100%Icu and Icw for 1 sec..   |      |          |      |        |
| ac)      | All breaking Capacity for MCCB to be Ics=100%Icu.   |      |          |      |        |
| ad)      | All MCB to be C Curve   |      |          |      |        |
| a.       | <b>MDB (KG HOSTEL)</b>  |      |          |      |        |
|          | <b>Incoming:</b>  |      |          |      |        |
|          | 1 No. of 200 Amp FP MCCB of 25 KA Breaking capacity.  |      |          |      |        |
|          | <b>Metering for incoming:</b>   |      |          |      |        |
|          | Multifunction meter with CT's and RS 485 communication port   |      |          |      |        |

| Item No.     | Description of Item   | Unit | Quantity | Rate      | Amount |
|--------------|---|------|----------|-----------|--------|
|              | Phase indicating lamps RYB with 2 Amps SP MCB back up.  |      |          |           |        |
|              | <b>Bus Bars:</b>  |      |          |           |        |
|              | Electrolytic high conductivity aluminium three phase and neutral busbars rated at 200 Amps, insulated with heat shrinkable coloured PVC sleeves & clip on shrouds for joints. Current density of Bus Bar to be 1.3 sq.mm / amp.                                       |      |          |           |        |
|              | <b>Outgoing (All MCB/MCCB shall be suitable for motor duty):</b>  |      |          |           |        |
| i)           | 1 Nos. 100A FP MCCB of 16 KA breaking capacity along with ON indication lamp with 2A SP MCB for protection.   |      |          |           |        |
| ii)          | 14 Nos. 63A FP MCB of 10 KA breaking capacity   |      |          |           |        |
| iii)         | 1 Nos. 40A FP MCB of 10 KA breaking capacity  |      |          |           |        |
|              | MDB (KG HOSTEL) as described above shall be complete with all interconnections, risers, internal wiring, labels, terminal blocks etc. complete as required.   | Set  | 1        |           |        |
|              | <b>Total carried over to Summary</b>  |      |          | <b>Rs</b> |        |
| <b>10.00</b> | <b>INVERTER FOR EMERGENCY LIGHTING</b>  |      |          |           |        |
|              | Supply, installation, testing and commissioning of 2 KVA inverter of Luminous/microtek make complete as required along with sealed maintenance free batteries for providing 90 minutes backup, as required and as per specifications. <b>(For Emergency Lighting)</b> | Set  | 1        |           |        |
|              | <b>Total carried over to Summary</b>  |      |          | <b>Rs</b> |        |
| <b>11.00</b> | <b>CCTV SYSTEM (CONVENTIONAL)</b>   |      |          |           |        |
| 1            | Colour Camera with fixed lens 3.6 mm, 2 inch HAD 530 HTV resolution 0.5 lux, 3.4" Dome Type.  | Nos. | 13       |           |        |
| 2            | HD-TVI Analog Bullet Camera, 720P, 2.8-12mm lens, true D/N, DWDR, 40m IR, 960H Monitor or HD-TVI selectable output, Coax & button OSD control, 12VDC/24VAC, IP66, PAL   | Nos. | 2        |           |        |

| Item No.                             | Description of Item  | Unit | Quantity | Rate       | Amount |
|--------------------------------------|--|------|----------|------------|--------|
| 3                                    | 16 Channel Digital Video Surveillance System, record rate 400 FPS – record and viewing shall be 25 FPS per Camera, with built in Multiplexer, Video motion detection, smart search with TCP – IP connectivity, recording on real time , high quality (24 hours, 30 days), HDD suitable for 24 hours and 30 days recording, Windows 2007 Professional OS, MPEG 4 plus and other options, Resolution – 640 x 480 pixels, suitable for connecting the CCTV's. | Nos. | 1        |            |        |
| 4                                    | SMPS Based Power Supplies  | Nos. | 15       |            |        |
| 5                                    | 32" TFT Colour Monitor   | Nos. | 1        |            |        |
| 6                                    | Supply and laying of following size M.S. conduit complete with support brackets/clamps, junction boxes etc. complete.  |      |          |            |        |
| a.                                   | 25 mm dia conduit (1.6 mm wall thickness)  | RM   | 600      |            |        |
| b.                                   | 32 mm dia conduit (2.0 mm wall thickness)  | RM   | 100      |            |        |
| 8                                    | Supply and drawing of the RG 6 co-axial cable for signal.  | RM   | 800      |            |        |
| 9                                    | Supply and drawing of the 3 x 1.5 sq. mm PVC insulated copper conductor cable for camera power including cable glands.   | RM   | 200      |            |        |
| <b>TOTAL CARRIED OVER TO SUMMARY</b> |  |      |          | <b>RS.</b> |        |

| Item No.     | Description of Item   | Unit | Quantity | Rate | Amount |
|--------------|---|------|----------|------|--------|
| <b>12.00</b> | <b>LIGHTNING PROTECTION SYSTEM (ESE)</b>  |      |          |      |        |
| 1            | Supply of ESE type Lightning Protection complete with the Lightning Air Terminal - configured as a Spheroid which is comprised of separate electrically isolated 4 panels (stainless steel) surrounding an earthed central finial. The Insulation material used to electrically isolate the panels (stainless steel) shall be comprised of a base polymer which provides high Ozone & UV resistance with a di-electric strength of 24-38 KV/mm. As per NF C 17 – 102, the ESE air terminal shall be tested with the “Switching Impulse Voltage” of -600 to -700 KV and “Direct Voltage” of -40 to -70 KV and certified by an IEC/IECEE/ILAC accredited international testing laboratory. The test report shall have reference wave in accordance with 650 microsec standardized wave according to clause 4.2 of NF C 17 102. The early streamer emission terminal shall be tested & certified by CPRI (Central Power Research Institute), Govt of India for the Impulse current of 45 KA (8/20 micro sec) with 5 positive & 5 negative impulse. The ESE terminal shall not have any electronic circuit or any batteries inside. The serial number displayed on the ese lightning arrester shall be duly supported with the "certificate of country of origin" issued and duly sealed by the respective country (exported) "Chamber of Commerce & Industry" indicating the serial number of the product supplied. The ESE air terminal shall offer a protection radius at Level 1 / High protection and preferably to be mounted on the roof top & centre. |      |          |      |        |
| 1.1)         | High/Level 1 protection = 32 mtrs radius  | Set  | R.O      |      |        |
| 1.2)         | High/Level 1 protection = 48 mtrs radius  | Set  | R.O      |      |        |
| 1.3)         | High/Level 1 protection = 68 mtrs radius  | Set  | 1        |      |        |
| 1.4)         | High/Level 1 protection = 79 mtrs radius  | Set  | R.O      |      |        |
| 2            | Supply of G.I. mast of 5 mtrs height for mounting the terminal & adaptor with the ESE Air Terminal along with supporting guy wires, etc.  | Set  | 1        |      |        |

| Item No. | Description of Item   | Unit | Quantity | Rate | Amount |
|----------|---|------|----------|------|--------|
| 3        | Supply of Lightning Strike Recorder - 7 digits mechanical display to record the lightning current in an IP 67 (IEC 529) polycarbonate enclosure with the minimum sensitivity of 1500A to a maximum of 220 KA (8/20 micro second waveform). The recorder shall be of non-resettable type with the electro-mechanical display. No LCD screen is permitted as it may depend upon the battery life to energize the LCD. The lightning strike recorder shall be duly tested & certified inline with the ese lightning arrester in an international laboratory for an impulse current (8/20 micro sec) of more than 450 KA as per IEC 60-1:1989 standard. The lightning strike recorder shall be tested & certified by CPRI (Central Power Research Institute), Govt of India for the Impulse current of 45 KA (8/20 micro sec) with 5 positive & 5 negative impulse. | Nos. | 1        |      |        |
| 4        | Supply of down conductor of 70 sq.mm single core insulated flexible copper cable with necessary accessories, etc.   | RM   | 70       |      |        |
| 5        | Supply, Installation, testing and commissioning of advance maintenance free chemical gel earthing system of 3 numbers of 10 feet length, 14 mm dia copper bonded steel rod of 250 microns molecular bonding along with 3 bags (10 Kgs) of chemical compound. The chemical compound shall be tested for the contents from BIS (Bureau of Indian Standards, Govt of India) & NABL accredited laboratory in India. The testing laboratory shall be an ISO 9001 & ISO 14001 certified. Including Supply of 03 numbers of heavy duty weather proof environment friendly polyplastic earth pit chamber with cover of autolocking facility with the following dimensions - 254 mm dia (top), 330 mm dia (bottom) and 260 mm height. 4 knock-out openings are provided for the easy interconnection of earth strips between the earth pits to form a grid.              |      |          |      |        |
| 6        | Supply, fixing, testing & commissioning of aviation obstruction light with LED low light with red colour LED intensity 30 candela in one direction, total intensity 600 <b>With Flasher</b> complete as required as per site including providing all fixing accessories. (Low Intensity)  | Nos. | 1        |      |        |
| 7        | Supply, installation, testing & commissioning of Photometric switch for automatic ON / OFF of aviation lights including conduiting with wiring of 2 x 2.5 Sq mm PVC copper wire and earth in MS conduit from Machine Room DB complete as required.  | Nos. | 1        |      |        |
| 8        | <b>Annual Maintenance Charges for the Complete Lightning Protection System, after completion of warranty period. (Optional)</b>   | LS   | 1        |      |        |

| Item No. | Description of Item  | Unit | Quantity | Rate | Amount |
|----------|--|------|----------|------|--------|
|          | Note : Vendor shall provide the Unconditional warrenty for Min. 10 Years for Successful operation of complete system for Lightning Protection. |      |          |      |        |
|          |  |      |          |      |        |
|          | Total carried over to Summary  |      |          | Rs.  |        |
|          |  |      |          |      |        |



**SCHEDULE OF QUANTITIES****(3.0) FIRE FIGHTING WORKS****Name of work : Addition and Alteration of K.G. Girls Hostel at I.P. College, Delhi**

| <b>Item No.</b> | <b>Description of Item</b>  | <b>Unit</b> | <b>Quantity</b> | <b>Rate</b> | <b>Amount</b> |
|-----------------|---|-------------|-----------------|-------------|---------------|
| <b>1.00</b>     | <b>PIPING &amp; VALVES</b>  |             |                 |             |               |
| 1               | Providing and fixing <b>M.S. pipe</b> to I.S. 1239 (Heavy class) complete with all supports & fittings like, unions, couplings, bends, elbows, tees, offsets, reducers, flanges as per table 'E' etc. to complete the work as per the requirement at site including painting with one coat of primer after surface preparation and two coats of synthetic enamel paint, cutting and making good the walls good complete. Pipe upto 40 mm dia threaded joints using DI fittings with holdtite, 50 mm dia and above should be welded joint (all type) (internal works/External Works) |             |                 |             |               |
| a.              | 25 mm dia.  | RM          | 12              |             |               |
| b.              | 100mm dia   | RM          | 56              |             |               |
| c.              | 150mm dia   | RM          | 140             |             |               |
| 2               | Providing and fixing cast iron dual plate wafer type <b>non return valves</b> of PN1.6 including nuts, bolts, 1.5mm thick compressed asbestos gasket including matching flanges as per table "E" complete   |             |                 |             |               |
| a.              | 150 mm dia.   | Nos         | 2               |             |               |
| 3               | Providing and fixing <b>C.I. butterfly valves</b> PN 1.6 complete with bolts, nuts 1.5mm thick compressed asbestos gasket companion flanges as per table "E" complete.  |             |                 |             |               |
| a.              | 150 mm dia with lever   | Nos         | 8               |             |               |
| 4               | Providing and fixing brass <b>ball valve</b> (full bore type) with plastic coated lever and screwed female ends tested to 20 Kg/ cm <sup>2</sup> of approved quality as specified.  |             |                 |             |               |
| a.              | 25 mm dia.  | Nos         | 12              |             |               |
| b.              | 50 mm dia.  | Nos         | 4               |             |               |
| 5               | Providing and fixing dial type <b>pressure gauge</b> with isolation cock and copper pipe at hydrant station.  |             |                 |             |               |
| a.              | Dial diameter 100 mm calibration 0-15 kg/ sq.cm.  | Nos         | 14              |             |               |
| 6               | Providing and fixing gunmetal single acting <b>air release valve</b> with screwed inlet 25 mm dia..   |             |                 |             |               |
|                 |   | Nos         | 4               |             |               |
| 7               | Providing and fixing blank flanges as per table 'E' with asbestos gasket, nut, bolts, washers complete  |             |                 |             |               |
| a.              | 150 mm dia.   | Nos         | 4               |             |               |
|                 | <b>TOTAL C/F TO SUMMARY</b>   |             |                 |             |               |
| <b>2.00</b>     | <b>FIRE HYDRANT ACCESSORIES</b>   |             |                 |             |               |
| 1               | Providing and fixing SS304 Single headed <b>landing valve</b> conforming to IS -5290 (Type-A) with 63 mm dia. single instantaneous female coupling on the outlet SS304 metal blank cap and chain, necessary companion flanges, nuts, bolts, washer and gasket complete as per specification. (ISI marked). All parts and body shall be of SS304 as per IS:5290.   |             |                 |             |               |
| a.              | Single outlet   | Nos         | 16              |             |               |
| 2               | Providing and fixing first aid <b>fire hose reel</b> drum wall mounting, swinging type (Powder coated finish in fire red) fitted with 20 mm dia. 30 m long high pressure hose (IS:444, Type-2) with 5 mm outlet SS nozzle with shut off valve (IS:8090). Name of Manufacturer should be embossed on the drum and complete hose reel drum shall be conforming to IS:884)   |             |                 |             |               |
|                 |   | Nos         | 12              |             |               |
| 3               | Providing and fixing <b>63 mm dia.</b> 15m long rubberized lined hose including SS304 male and female instantaneous type coupling approved by fire authority, machine wound with copper wire complete in all respects. Hose shall conform to IS 636 Type-A and coupling to IS 903 -1975 ( ISI marked)   |             |                 |             |               |
|                 |   | Nos         | 64              |             |               |

| Item No. | Description of Item  | Unit | Quantity | Rate | Amount |
|----------|--|------|----------|------|--------|
| 4        | Providing and fixing standard short size SS304 <b>branch pipe with gunmetal nozzle 16 mm dia.</b> outlet with standard instantaneous type 63 mm dia. coupling. (ISI marked, IS:903)  | Nos  | 32       |      |        |
| 5        | Providing and fixing door with frame for all internal fire hydrants fabricated from 20x20x3 mm and 40x20x3 mm aluminium hollow box sections mounted with 3 no. of 100 mm Aluminium butt hinge on Aluminium angle frame of 45x45x5 mm size with hold fasts fixed to wall with P.C.C. (1:2:4) blocks 100x100x100 mm including 2 nos allen key lock for locking along with padlock arrangement & fully glazed with 4 mm thick float glass approved by local Fire Authority, powder coated fire red finish with " fire hose' written on front suitable to house 15 mm long two length of canvas hose with couplings, one no of branch pipe, one fire mans axe and two numbers of portable extinguishers, first aid fire hose and supports for hoses, branch pipes, Axe and hose reel. Size 2100x 900 mm complete as per approved design including necessary fixing arrangement for hoses & axe and branch pipe.) | Nos  | 12       |      |        |
| 6        | Providing and fixing gunmetal <b>fire brigade inlet</b> head as per IS:904 Specification tested for 20 Kg/cm2 with 63 mm dia. instantaneous type inlet and 100/150mm dia.. flanged outlet with built-in check valve for fire brigade connection to under ground tanks and fire risers including companion flanges as portable " E" including nuts, bolts & washers etc.  |      |          |      |        |
| a.       | Three way  | Nos  | 2        |      |        |
| 7        | Supplying and fixing of Fire Man's Axe with heavy insulated rubber tested upto 20 KV and confirming to IS :926.  | Nos. | 12       |      |        |
| 8        | Air Cushion Tank for Risers  |      |          |      |        |
|          | Providing and fixing of air vessel of the following specifications fabricated with MS Pipe of thickness specified.   |      |          |      |        |
|          | specifications   |      |          |      |        |
|          | a. Diameter : 200 mm   |      |          |      |        |
|          | b. Shell Thickness: 6.35 mm  |      |          |      |        |
|          | c. Dish Ends : 10 mm   |      |          |      |        |
|          | d. Height : 1000 mm  |      |          |      |        |
|          | e. Finishing: Two coats of red enamel  |      |          |      |        |
|          | paint over primer out side and two   |      |          |      |        |
|          | coats of epoxy coating inside.   |      |          |      |        |
|          | f. Material of construction: M.S   |      |          |      |        |
|          | g. Test Pressure: 20 Kg/Sq.Cm.   |      |          |      |        |
|          | i. Height of supporting legs: 400 mm   |      |          |      |        |
|          | j. Quantity  | Each | 8        |      |        |
|          | Note: Contractor should submit general arrangement drawings before fabrication of vessel and ultrasonic test report to be submitted on supply of vessel and test to be conducted at the presence of Plumbing-In-Charge. Also cost shall include two nos. Gunmetal NRV(ISI Marked)  |      |          |      |        |
| 9        | Providing and fixing "Y" suction <b>strainer</b> with flanged connection 200 mm dia. suitable for 2850 lpm discharge with stainless steel 20 mesh complete including companion flanges etc. suitable for 200 dia. inlet and 200 dia. outlet including inside with rubberized paint and outside with two coats of enamel paint of approved shade after surface preparation necessary stainless steel nuts, bolts, washers etc..   | Nos  | 2        |      |        |
|          | <b>TOTAL C/F TO SUMMARY</b>  |      |          |      |        |

| Item No.    | Description of Item   | Unit | Quantity | Rate | Amount |
|-------------|---|------|----------|------|--------|
| <b>3.00</b> | <b>FIRE EXTINGUISHERS &amp; MISC. ITEMS</b>   |      |          |      |        |
| 1           | Providing and fixing Carbon-di-oxide fire extinguishers consisting of welded M.S cylindrical body, squeeze lever discharge valve fitted with internal discharge tube, 30cms long high pressure discharge hose, discharge nozzle, suspension bracket, confirming to IS : 15683 finished externally with red enamel paint and fixed to wall with brackets with rawl plug/dash fasteners complete with internal charge. Capacity 4.5 kg. ISI Marked.( Contractor should submit test certificate form manufacturer along with serial number of every extinguishers supplied.)   | Nos  | 12       |      |        |
| 2           | Providing and fixing water Co2(ISI marked) extinguishers including all accessories as per IS specification with wall bracket with rawl plug   |      |          |      |        |
| a.          | Capacity 9 liters.(IS:15683)  | Nos  | 12       |      |        |
| 3           | Providing and fixing of self illuminated / auto glow "EXIT" signs printed on photoluminescent sheet containing self illuminated base chemical, of appropriate size not less than 400 x 150 mm, suspended from ceiling or fixed to the walls with accessories as required and as directed at site.   | Nos  | 24       |      |        |
|             | <b>TOTAL C/F TO SUMMARY</b>   |      |          |      |        |
| <b>4.00</b> | <b>TERRACE FIRE FIGHTING PUMPS &amp; EQUIPMENT</b>  |      |          |      |        |
|             | Notes: Each Pumps will be provided with mechanical seal, Love joy coupling, coupling guard, base frame, anti-vibration pads, bourdon pressure gauge, anti-vibration pipe sections on suction and delivery, cable and earth wire from pump motor to motor control panel. Cable size from pump to control panel will be 3cx16sqmm copper conductor armoured cable. Each pump shall be of CI body, bronze impeller, SS shaft and mechanical seal   |      |          |      |        |
| 1.          | Supplying, installing, testing & commissioning of electric driven automatic pressurisation pump set consisting of the following :   | Each | 2        |      |        |
|             | Horizontally mounted centrifugal end suction type Terrace pump complete for delivery of 900 ltrs/minute against a total head of 35 metres approx complete with arrangement for testing of the working of the pumping set as required. Rate shall also include Mechanical Seal.  |      |          |      |        |
|             | Squirrel cage induction motor suitable for 415 V, 50 Hz, AC supply of suitable 10 HP rating for the above pum with synchronous speed of 2900 RPM T.E.F.C. type such as confirming to IPL55 and flexible coupling and coupling guard with the pump.  |      |          |      |        |
|             | Common bed plate of fabricated mild steel channel or cast iron type.  |      |          |      |        |
| 2           | Manufacturing supplying installation testing and commissioning of common control pannel for fire fighting pump system comprising of Terrace pump. All the components shall be housed in 2 MM thick CRCA MS Sheet. The control pannel shall be cubical type dust and vermin proof hinged and lockable doors and deed friend operation. The panel shall be powder coated with siemens gray and doors will be sky blue. All internal control wiring shall be 1.5 MM sqm copper provided. Seperate compartment for each motor/pumpstarter, busbar chamber, cable alley and in comer. All MCCB shall be door lockable type copper earthing bus bar shall be provided, control panel shall also be provided with potential free contacts for Building management system and level controller for all the pumps for dry run protection. Panel is complete with following | Each | 2        |      |        |

| Item No. | Description of Item   | Unit | Quantity | Rate | Amount |
|----------|---|------|----------|------|--------|
|          | Panel shall be complete with 40A MCB(35 KA) main incomer, phase indicating lights with 6 A MCB, Voltmeter to read voltage between 0-440V with voltage selector switch, Amperemeter to read current between 0-250 A with ampere selector switch, 32A(10 KA) MCB with socket for welding, 1 No. DOL starter for pump, 1 No. auto manual switch , 1 No single phase preventors complete with earthing of panel and motors. |      |          |      |        |
|          | <b>TOTAL C/F TO SUMMARY</b>   |      |          |      |        |

**SECTION III**

**ARTICLES OF AGREEMENT**

Articles of agreement made this ..... day of..... between ..... having its Registered office at ..... (Here in after referred to as the Employer/Owner which expression shall include its successor or successors and assigns) of the one part.

AND

M/s..... having its registered office at ..... and head office..... (Here in after referred to as the Contractor of the other part).

Whereas the Employer/Owner is desirous of executing civil, electrical, fire fighting works, public health works etc., for the “Addition and Alteration of K.G. Girls Hostel at Indraprastha College for Women, Delhi” as stated herein Tender Document (here in after called the work.)

And whereas the Employer/Owner in order to effectively carry out the said work has appointed M/S Swati Structure Solutions Pvt. Ltd, here in after referred to as (the Architect/Consultant) to prepare plans, drawings and specifications describing the same to be executed.

And whereas the Employer/Owner has made the Plans, Drawings as per lists attached, specifications priced schedule of quantities for the work as per instructions to tenderers, General conditions of contract and special conditions of contract prepared with assistance of the said Architect / consultant subject to which the offer of the contractor shall be accepted.

And whereas the said Architect/Consultant has issued drawings etc. therefore to the contractor. The drawings attached with tender documents are informative and additional working drawings shall be separately issued and the contractor has to execute the work as per working drawings without any extra payment or claim.

And Whereas the relevant drawings inclusive of the specifications, priced schedule of quantities, instruction of tenderer, general condition of contract and special conditions and letter exchanged by and between the parties from submission of Pre-Qualification document, tender up to acceptance including letter of order (herein after collectively referred to as the said conditions) have been signed by the parties here to and the contractor has agreed to execute the work upon and subject to the said conditions.

**Now it is hereby agreed as follows:**

1. In consideration of the payments to be made to the contractor as hereinafter provided the contractor shall upon and subject to the said conditions execute and complete the works as described in the said specifications and the said priced schedule of quantities.
2. The employer will pay to the contractor the sum of Rs.------(Rupees-----)  
-----)  
(Here in after called the contract sum) or such other sum as shall become payable here under at the times and in the manner specified in the said conditions.
3. The terms Architect/ Consultant in the said conditions shall mean the same and in the event of the said Architect/ Consultant ceasing to be the Architect / Consultant for the purpose by the Employer, provided always that no person subsequently appointed to be the Architect /Consultant under this contract shall be entitled to disregard or over rule any decision or approval expressed in

writing by the outgoing Architect/ Consultant for the time being if the same had been done under instructions from the employer.

4. The agreement and documents mentioned above shall form the basis of this contract and all disputes to be decided in the manner prescribed in the condition attached here to.
5. The said contract comprises civil, electrical, fire fighting works, public health works etc. as mentioned above and in the tender documents and all subsidiary work connected there within the same site as may be ordered to be done from time to time by the said employer through the Architect/ Consultant or other Architect/ Consultant the case may be even though the said work may not be shown on the drawing or described in the said specification or the priced schedule of quantities.
6. Notwithstanding what is stated herein before or hereinafter or in the instruction to the tenderer, general conditions of contract, special conditions, the employer through the Architect/ Consultant reserves to himself the right to alter the nature of the work and of adding to or, omitting any items of works from the contract or of having portions of the same carried out Entirely or otherwise and such alterations or variations shall be carried out without prejudice to this contract.
7. The contractor will raise the bill (to be submitted in triplicate) for the work executed at site and payment will be made by the owner within 15 (Fifteen) days from the date of submission of bill and approval of bill.
8. The above conditions shall be read and be treated as forming part of this agreements and the parties hereto will respectively be bound hereby and to abide by themselves to the conditions and stipulation and perform the same on their parts to be respectively observed and preferred.

AS WITNESS                      our hand this                      Day of

SIGNED by the said  
in presence of                      :                      Employer

SIGNED by the said in the  
presence of                      :                      Contractor

**Witness**

(1) Name of \_\_\_\_\_  
Address: \_\_\_\_\_  
Occupation: \_\_\_\_\_

(2) Name of \_\_\_\_\_  
Address: \_\_\_\_\_  
Occupation: \_\_\_\_\_

## SECTION – IV

### INSTRUCTION TO TENDERERS

1. The EMPLOYER through the ARCHITECTS does not bind itself to accept the lowest or any tender and reserves to itself the right to accept or reject any or all the tenders, in whole or in part without assigning any reasons for doing so.
2. All erasures and alterations made while filling the tender must be attested by initials of the Tenderer. Overwriting of figures is not permitted; failure to comply with either of these conditions will render the tender void. No advice of any change in rate or condition after the opening of the tender will be entertained.
3. The CONTRACTOR must not sublet any portion of the contract except with the written consent of the EMPLOYER failing which the ARCHITECT/EMPLOYER may serve a notice in writing rescinding the contract whereupon the security deposit shall stand forfeited and at absolute disposal of the EMPLOYER.
4. Time shall be considered as the essence of the Contract. The Entire constructions must be completed in **12 (Twelve) Months** including internal electrical installations, installation of cable T.V./Telephone Cabling installation of internal sanitary and internal water supply arrangements and all external development works etc. It is intended that all general works should be so completed so as to leave the last two months for installations and finishing cleaning and handing over items. The attentions of the tenderer are drawn to clause (13) of the general conditions of the contract referring to damages for non completion. The tenderer shall before commencing work prepare a detailed work programme to achieve timely completion of the work which shall be approved by the ARCHITECT and EMPLOYER and shall be adhered to The CONTRACTOR is bound to carry out any items of work necessary for the completion of job even though such items are not included In strictly the schedule of area/quantities and rates. Instruction in respect of such additional items and their quantities will be issued in writing by the EMPLOYER through ARCHITECT.

#### **5. LAND FOR CONTRACTORS ESTABLISHMENT**

For the purpose of construction of contractor's store yard, godowns, site office, etc. the Contractor may utilize with the permission of the architect/ consultant, portion of the land belonging to the employer if available at such location as would not interface with the execution of the work. The contractor shall for this purpose submit to the Architect/consultant for his approval a plan or plans of the proposed layouts for the site facilities. The Architect/ consultant reserve the Right to modify the contractor's proposal as he may deem fit.

#### **6. WATER.**

The rates quoted by the contractor shall include all expenditure for providing all the water for the full contract period required for the work, including for the people at work and all staff on the site. He shall make his own arrangement for the supply of good quality water suitable for use in the work and the work people. He shall obtain Municipal connection and all charges for the connection and consumption shall be born by him. If Municipal water is not available or inadequate, he shall make other arrangements like sinking tube wells or making bore wells or transport from outside by tanker or any other suitable means entirely at his cost and no separate payment shall be made for the same.

## **7. POWER**

The contractor shall at his own cost arrange for necessary power for construction and lighting for the entire period of contract. If however separate power is available in the premises, the contractor shall make his own arrangement to obtain necessary connections, maintain and efficient service of Electric lights and power and shall pay for all the requisite charges for the same.

The Employer, as well as the Architect / Consultant shall give all the recommendations necessary to obtain power and water connections from the concerned authorities, but the responsibility for obtaining the same shall rest with the contractor. If any other Contractor, appointed by the employer, is required to use water and power, he shall be allowed to use the same and make temporary connections from the supply arranged by the main Contractor at rates and terms that may be mutually agreed upon by both, failing which, at rate, terms and conditions that may be decided by the Architect/ consultant.

## **8. FIRST – AID FACILITIES & LIABILITIES**

The Contractor shall at his own expense arrange to ensure availability of medical attendant promptly when necessary. He shall provide properly equipped first –aid station in-charge or qualified persons at suitable location nearest to the Hospital. The Contractor shall be responsible for any liability which may be excluded from the insurance policies and also for all other damages to any person, animal or property arising out of incidental to the negligence or defective carrying out of this contract. He shall also indemnify the employer in respect of any cost, charges or expenses arising out of any claims or proceedings and also in respect of any award of compensations and damages arising there from.

The employer shall with the concurrence of the Architect be entitled to deduct the amount of any damage, compensation, cost charges and expenses arising from or occurring from, or in respect of, any such claims or damages from any or all sums due or become due to the contractor without prejudice to the employers other rights in respect thereof.

Accidental Policy for the labours working at site shall be on account of Contractor. He shall produce the same before start of work.

The liability arising out any accident, incident at the site is the responsibility of contractor and shall bear all the expenses, compensations, legal implications are to be settled by the contractor. All labour regulations related to welfare, health, Safety & Security of labour are to be strictly adhered by the contractor. Till the completion of building and handing over the completed work to the owner, the contractor shall be solely responsible for any mishaps or injury to the worker & damages to the structure of owner or neighbours which may arise from the operator's neglect or himself or his employee. Whether such injury or damage may arise from carelessness, accident or mishaps due to any reasons what so ever, contractor shall suitably and adequately compensate for damages to the effected party or persons as per applicable Government rules. The owner under no circumstances shall own any responsibility for any such accident/ mishaps and no financial responsibility shall devolve on the owner.

## **9. FIRE FIGTHING ARRANGMENTS**

The contractor shall at his all expenses provide at suitable, prominent and easily accessible places requisite number of fire extinguishers of appropriate type and buckets some filled with sand and others with water.



## **10. REPORTS AND RETURNS**

The contractor shall maintain at site daily records of progress with regard to the work carried out, labour engaged and construction equipment deployed. These daily record shall be made available /accessible to the employer / Engineers / Architect / Consultant as and when required by him.

Enlarged progress photographs are also to be submitted regularly by the contractor at no extra cost to the employer/owner.

## **11. SITE ORDER BOOK**

For the purpose of quick communication, the contractor shall maintain and preserve at site, a book with machine numbered pages in triplicate. Any instruction / advice given and recorded in the site order book by the consultant / employer shall be considered as a notice served on the contractor.

**12.** The following documents will be required to be submitted by the tenderer along with tender:

- i) Tender Documents duly signed and stamped on each page.
- ii) List of equipments proposed to be deployed on work.
- iii) List of staff proposed to be deployed on work.
- iv) if you need to associate with another company in executing the works then this should be clearly mentioned in your offer.
- v) The details of laboratory where the samples to be tested shall also to be indicated.

if any tenderer gives wrong information or suppresses any material facts, the employer/engineer shall be free to reject such a tender at any stage and even cancel the contract (after the acceptance of the tender) at the risk and cost of the tenderer.

## **13. CONTENTS OF TENDER DOCUMENTS.**

The tenderer is expected to examine carefully all the contents of the tender documents including instructions, conditions, terms, specifications and drawings and take them fully into account before submitting his offer. Failure to comply with the requirements as detailed in these documents shall be at the tenderer's own risk. Tenders which are not responsive to the requirements of the tender documents will be rejected.

## **14. GENERAL INSTRUCTION TO TENDERER**

**14.1** Except for the items, for which particular specifications are given or where it is specifically mentioned otherwise in the description of the items in the schedule of quantities, the work shall generally be carried out in accordance with the "CPWD Specifications 2009 Vol. I & II with upto date corrections slips (Here in after to be referred to as CPWD Specifications) and instructions of Client/ Architect. Wherever CPWD Specifications are silent, the latest IS Codes / Specifications shall be followed.

**14.2** The proposed building is a prestigious project and quality of work is of paramount importance. Contractor shall have to engage well experienced skilled labour and deploy modern T&P and other equipment to execute the work.

- 14.3** Samples including brand / quality of materials and fittings to be used in the work shall be got approved from the Client / Architect, well in advance of actual execution and shall be preserved till the completion of the work.
- 14.4** Unless otherwise specified in the schedule of quantities, the rates tendered by the contractor shall be all inclusive and shall apply to all lifts & all heights, floors including terrace, leads and depths and nothing extra shall be payable on this account.
- 14.5** The rates for all items of work shall, unless clearly specified otherwise, include cost of all labour, material, tools and plants, incidentals and other inputs involved in the execution of the item.
- 14.6** The contractor(s) shall quote all inclusive rates against the items in the schedule of quantities and nothing extra shall be payable for any of the conditions and specifications mentioned in the tender documents unless specifically specified otherwise.
- 14.7** Unless otherwise specified in the schedule of quantities the rates for all items shall be considered as inclusive of pumping / bailing out water, if necessary for which no extra payment shall be made. However, regarding level of water table Soil Investigation Report may be seen in the office of the architect and the same shall also be checked at site before quoting the rates.
- 14.8** The rate for all items, in which the use of cement is involved, is inclusive of charges for curing.
- 14.9** The foundation trenches shall be kept free from water while works below ground level are in progress.
- 14.10** The work shall be executed and measured as per metric dimensions (SI Units) given in the schedule of quantities, drawings etc. (FPS units wherever indicated are for guidelines only)
- 14.11** Any legal or financial implications resulting out of disposal of earth shall be the sole responsibility of the contractor. Nothing extra shall be paid on this account.
- 15. SPECIAL INSTRUCTION TO TENDERER FOR CIVIL WORKS**
- 15.1 (a)** The Contractor(s) shall inspect the site of work before tendering and acquaint himself with the site conditions and no claim on this account shall be entertained by the Employer.
- (b)** The contractor(s) shall get himself acquainted with nature and extent of the work and satisfy himself about the availability of materials from kiln or approved quarries for collection and conveyance of materials required for construction.
- 15.2** The tenderer shall see the approaches to the site. In case any approach from main road is required at site or existing approach is to be improved and maintained for cartage of materials by the contractor, the same shall be provided, improved and maintained by the contractor at his own cost. No payment shall be made on this account.
- 15.3** Contractor shall take all precautionary measures to avoid any damage to adjoining property. All necessary arrangement shall be made at his own cost.
- 15.4** The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night, speed limit boards, red flags, red lights and providing barriers. He shall be responsible for all damages and accidents caused to existing / new work due to negligence on his part. No hindrances shall be caused during the execution of the work.

- 15.5** Royalty at the prevailing rates wherever payable shall have to be paid by the contractor on the boulders, metal, shingle, sand and bajri etc. or any other material collected by him for the work direct to revenue authorities and nothing extra shall be paid by the Employer for the same.
- 15.6** The contractor shall provide at his own cost suitable weighing, surveying & leveling and measuring arrangements as may be necessary at site for checking. All such equipment shall be got calibrated in advance from laboratory, approved by the Client / Architect. Nothing extra shall be payable on this account. The equipment shall be calibrated at regular intervals during the period of contract.
- 15.7** The contractor shall take instructions from the Client / Architect regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, services and compound walls are to be constructed.
- 15.8** Contractor shall provide permanent bench marks, flag tops and other reference points for the proper execution of work and these shall be preserved till the end of work. All such reference points shall be in relation to the levels and locations, given in the Architectural drawings.
- 15.9** Any cement slurry added over base surface (or) for continuation of concerning for better bond is deemed to have been included in the items and nothing extra shall be payable (or) extra cement considered in consumption on this account. For RCC work, only factory made round type cover block shall be used. For Brick work unless otherwise specified FPS bricks shall be used in all items of work. The classification of bricks brought by the contractor shall conform to the CPWD Specifications.
- 15.10** The contractor shall bear all incidental charges for cartage storage and safe custody of materials brought to site.
- 15.11** The work shall be carried out in accordance with the Architectural drawings and structural drawings, to be issued from time to time, by the Client / Architect. Before commencement of any item of work, the contractor shall correlate all the relevant architectural and structural drawings issued for the work and satisfy himself that the information available there from is complete and unambiguous. The discrepancy, if any, shall be brought to the notice of the Client/ Architect before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and or incomplete information.
- 15.12** (i) Quality of all materials brought to the site shall be got checked as per relevant BIS codes from the approved / reputed laboratories and inform the Client/ Architect or his any authorized supervisory staff on receipt of the same along with test certificates at site before use. The cost of testing shall be on account of contractor, nothing extra is payable.
- (ii) All material shall only be brought at site as per program finalized with the Client / Architect. Any redelivery of the material not required for immediate consumption shall not be accepted and thus not paid for.
- (iii) The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set-out tolerance limit shall be summarily rejected by the Client / Architect & contractor shall be bound to replace / remove such sub-standard / defective work immediately at his own cost / at no extra cost.
- 15.13** The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set-out tolerance limit shall be summarily rejected by the Client / Architect & contractor shall be bound to replace / remove such sub-standard / defective work immediately at his own cost / at no extra cost. The contractor shall conduct his work, so as not to

interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Client/ Architect and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and in a proper co-ordination manner and shall perform it in proper sequence to the complete satisfaction of others.

**15.14** The Architectural drawings given in the tender other than those indicated in nomenclature of items are only indicative of the nature of the work and materials/fixings involved unless and otherwise specifically mentioned. However, the work shall be executed in accordance with the drawings duly approved by the Client / Architect.

**15.15 PROGRAMME CHART:-**

- i) The Contractor shall prepare an integrated program chart for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfillment of the program within the stipulated period and submit the same for approval of the Client/ Architect within two weeks of the award of the contract. The contractor shall draw the program keeping in view the activities to be taken. It is obligatory on the part of contractor to adhere to the program approved by the client/ architect
- ii) The program chart should include the following:-
  - a) Descriptive note explaining sequence of various activities.
  - b) PERT / CPM / BAR-CHART prepared on M.S. Project which will indicate resources in financial terms, manpower and specialized equipment for every important stage.
- iii) If at any time, it appears to the Client / Architect that the actual progress of work does not conform to the approved program referred above, the contractor shall produce a revised program showing the modifications to the approved program by additional inputs to ensure completion of the work within the stipulated time. However, for every month the employer will review the progress vis-a-vis Programme submitted
- iv) The submission for approval by the Client/ Architect of such program or the furnishing of such particulars shall not relieve the contractor of any of his duties or responsibilities under the contract. This is without prejudice to the right of Client/ Architect to take action against the contractor as per terms and conditions of the agreement.

**15.16** Normally contractors shall not be allowed to work at night. Work at night shall, however, be allowed if the site conditions / circumstances so demand. However, if the work is carried out in more than one shift or at night, no claim on this account shall be entertained. In such situations the contractor shall make available to the Employer proper means of communications such as vehicle at his own cost.

**15.17** Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the contractor's own expense. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services

**15.18** The contractor shall be responsible for the watch and ward / guard of the buildings, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him

against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the Employer. No extra payment shall be made on this account.

- 15.19** The day to day receipt and issue accounts of cement shall be maintained separately in the standard Performa given by the Client / Architect and which shall be duly signed by the contractor or his authorized representative.
- 15.20** The contractor shall be fully responsible for the safe custody of materials brought by him or issued to him even though the materials are under double lock key system.
- 15.21** The contractor shall procure the required materials in advance so that there is sufficient time for testing of the materials and clearance of the same before use in the work. Any redelivery of the materials not required for immediate consumption shall not be resorted to. The contractor shall provide at his own cost suitable weighing and measuring arrangements at site for checking the weight / dimensions as may be necessary for execution of work.
- 15.22** For construction works which are likely to generate malba / rubbish to the tune of more than a tempo / truck load, contractor shall dispose of malba, rubbish & other unserviceable materials and wastes at his own cost to the notified specified dumping ground and under no circumstances these shall be stacked / dumped even temporarily, outside the construction premises.
- 15.23** The contractor shall arrange at site centering and shuttering required before start of the work. In case the completion schedule requires more quantity of centering and shuttering, the contractor shall do so at no extra cost to the Employer.

**16. SUPPLY OF MATERIALS**

- 16.1 Cement, Steel (TMT Bars) and Structural steel will be procured by the contractor.
- 16.2 The account of the cement and steel shall be kept in proper register.
- 16.3 The contractor shall be fully responsible and accountable for safe custody and proper care to prevent damage or deterioration of theft of the cement and steel brought at site.

**17. SCHEDULE OF APPROVED BRAND NAMES OF MATERIALS:**

All materials specified in these specifications and condition of contract must confirm to the following brand name, and should be of first quality. BIS marked wherever available. Fabricated items shall be manufactured in accordance with the CPWD / ISI specifications and should be of first quality. Samples of all materials to be used must be submitted and got approved before procurement.

| NO. | Item                              | Brand specified<br>(or as approved by Architect/Employer) |
|-----|-----------------------------------|---|
| 1.  | Flush doors                       | Jyoti/Donear/Green or ISI Marked                          |
| 2.  | Plywood/blockboard<br>Soft board. | Jyoti/Donear/Green or ISI Marked                          |
| 3.  | Aluminium hardwares               | Oxford, Classic, Arches, or equivalent                    |
| 4.  | Locks (Mortice)                   | Godrej, Golden  |
| 5.  | Glazed titles                     | Somani, Kazaria, Orient                                   |
| 6.  | Ceramic floor titles              | Somani/Kazaria/Regency                                    |

|     |  |  |
|-----|--|--|
| 7.  | Coarse sand                            | Baderpur sand of fineness modulus  |
| 8.  | Stone aggregate                        | Clean Blue Delhi quartzite stone<br>(Free of any foreign material)                   |
| 9.  | Laminate (1.0mm thick)                 | Formica, Sanctuary, Greenlam   |
| 10. | Teak vincer (Natural)                  | Archid, Duro, Donear   |
| 11. | Sealant/ Additive                      | Assian Paints, Fosroc  |
| 12. | Glass                                  | Modiguard, Saint Gobain  |
| 13. | Polymers sealant<br>Concrete additive. | CICO   |
| 14. | Water proofing<br>Treatment            | CICO No. 1 (Liquid) / Pidilite   |
| 15. | Anti-termite treatment                 | Pest control Co., Pest Control Incorp<br>Pest (I) Co., Member of IPCA                |
| 16. | Paints                                 | ICI, Asian, Berger, Shalimar all<br>Ist Quality Snowcem (only for exterior)          |
| 17. | Adhesive                               | Fevicol, Mowicol   |
| 18. | Water stops                            | Fixopan, Lloyd 150mm double shoes.   |
| 19. | Cement                                 | BIRLA CEMENT/ A.C.C/ SHREE CEMENT/<br>J.K. CORPORATION LTD./ GUJRAT AMBUJA<br>CEMENT |
| 20. | Reinforcement                          | SAIL/ TISCO/ Rastriya Ispat Nigam Ltd./ TATA   |

**SANITARY:**

|     |  |  |
|-----|--|--|
| 1.  | Vitreous china sanitary ware                 | Parry wares (IS-2556)<br>Nycer/CERA, Hindware.   |
| 1A. | Cistern (China ware)                         | Hindware Parry ware (water saver-do- flushing<br>Sleek (Hindware) Cistern (P.V.C.) operation liver from<br>top of the cistern.) For L.W.C. |
| 2.  | Plastic W.C. Seats Cover                     | Commander (IS-2548) equivalent<br>(Good quality)   |
| 3.  | CP fittings & toiletries                     | Dripless/Parko.  |
| 4.  | C.P. Waste, spreaders<br>flush pipes - CAMRY | Marc or equivalent make.   |
| 5.  | Soil, Waste & rainwater pipe & fittings:     |  |
| a.  | PVC Pipes                                    | Fineless polypick  |
| b.  | PVC fittings                                 | (6Kg/cm <sup>2</sup> ) Setia   |
| c.  | CI pipes                                     | RIF/HINDUSTAN  |

|     |  |                                   |
|-----|--|-----------------------------------|
| 6.  | Gunmetal Valves (Fullway check and globe valves) | Leader/Sant or ISI make.          |
| 7.  | Gully traps                                      | Perfect or Burn (IS-651)          |
| 8.  | CI Main hole covers & frames                     | B.C.I/SKF/SIF                     |
| 9.  | G.I. Pipe  | Jindal Hissar B-class             |
| 10. | Ball valve                                       | Audco/Zoloto/Rapid Conroll        |
| 11. | Brass foot valves                                | Leader/Sant                       |
| 12. | R.C.C. Pipe                                      | Indian hume pipe or ISI.          |
| 13. | GI fittings                                      | Unik                              |
| 14. | Horizontal/Vertical check valves                 | Zoloto/leader                     |
| 15. | Pressure reducing valves                         | ITT/Zoloto/Audco                  |
| 16. | Globe Valve                                      | Audco/Bankim-sarkar/zoloto        |
| 17. | SFRC manhole & drain cover                       | Heavy duty conforming to ISI-2592 |
| 18. | Kitchen sink                                     | Jayana/ Neelkanth                 |
| 19. | Mirror   | Modi-guard                        |

**18. LIST OF APPROVED MANUFACTURERS FOR DIFFERENT MATERIALS TO BE USED FOR ELECTRICAL WORK  
(All materials shall be ISI mark)**

| <b>S.NO.</b> | <b>Detail of Materials</b>              | <b>Manufacturers Name/Brand Name</b>    |
|--------------|---|---|
| 1.           | PVC Conduit                             | BEC / ATUL / AKG                        |
| 2.           | PVC Insulated copper conductor FR cable | FINOLEX / R R CABLE / NATIONAL / BONTON |
| 3.           | Modular Plate Switch                    | LEGRAND (MOSAIC) / CLIPSAL (OPALE)      |
| 4.           | MCBDB                                   | LEGRAND / SEIMENS / ADHUNIK             |
| 5.           | MCB                                     | LEGRAND / GE / SCHNEIDER (MG)           |

**19. AMENDMENT TO TENDER DOCUMENTS.**

At any time prior to the deadline for the submission of tenders, the Engineer may, for any reason, whether at his own initiative or in response to a clarification or query raised by a prospective tenderer, modify the tender documents by an amendment.

The said amendment in the form of an addendum will be sent to all prospective tenderers who have received the tender documents, to reach them 2 days prior to the deadline for the submission of tenders. This communication will be in writing or by telefax and the same shall be binding upon them. Prospective tenderers should promptly acknowledge receipt thereof by telefax to the Engineer.

In order to afford prospective tenderers reasonable time for preparing their tenders after taking into account such amendments, the Engineer or the Employer may, at his discretion, extend the deadline for the submission of tenders.

**20. LANGUAGE OF TENDER.**

The tender prepared by the tenderer and all correspondence and documents relating to the tender exchanged between the tenderer and the Employer/Engineer shall be in the English language.

**21. TENDER PRICES**

The tenderer is required to quote for all the items as per tender documents.

The rate for each item shall be reasonable and not unbalanced. If the Engineer comes across any unbalanced rates, he may require the tenderer to furnish detailed analysis to justify the same. Should the tenderer fail to comply with this, his tender shall be liable to be rejected by the employer, who may award the contract to any other tenderer.

In case of any discrepancy in rate quoted for individual item and its amount, the rate quoted is final for the purpose of all calculations and payments.

The tenderer shall keep the contents of his tender and rates quoted by him confidential.

**22. CURRENCIES OF THE TENDER**

Tender prices shall be quoted in Indian Rupees only.

**23. TENDER VALIDITY**

The tender shall remain valid and open for acceptance for a period of 60 days after submission of offer.

**24. EARNEST MONEY DEPOSIT (EMD)**

The tenderer shall furnish, as Earnest Money Deposit (EMD) as specified in para -1.1 of NIT. The Earnest Money Deposit (EMD) shall be in the form of a bank draft on any Scheduled bank payable at New Delhi.

Any Tender not accompanied by an acceptable EMD will be summarily rejected by the Employer as non-responsive.

The Earnest Money Deposit (EMD) of the unsuccessful tenderer shall be returned upon executing the contract agreement by successful tenderer. The Earnest Money Deposit (EMD) shall be adjusted against security deposit against each running bill.

Earnest Money Deposit (EMD) will be forfeited in the following cases

- a. If the Tenderer withdraws / modifies his tender during the period of tender validity
- b. If the tenderer after award of work, does not start the work within the stipulated time period as per letter of award



No interest will be payable by the Employer on the Earnest Money Deposit (EMD) amount cited above

**25. SIGNING OF THE TENDER**

Entries to be filled in by the Tenderer shall be typed or written in indelible ink. Each page of the documents should be signed in full at the bottom by the person submitting the Tender along with the date of signing. The person signing/initiating the documents shall be one who is duly authorised in writing by or for and on behalf of the Tenderer and/or by a Statute Attorney of the Tenderer. Such authority in writing in favour of the person signing the tender and/or notarially certified copy of the Power of Attorney as the case may be, shall be enclosed along with the tender.

The complete tender shall be without alterations, overwriting, interlineations or erasures except those to accord with instructions issued by the Employer, or as necessary to correct errors made by the tenderer. All amendments/corrections shall be initialed by the person or persons signing the tender.

**26. CLARIFICATION OF TENDERS**

To assist in the examination, evaluation and comparison of Tenders, the Engineer / Employer may ask tenderers individually for clarification of their tenders, including Breakdowns of prices. The request for clarification and the response shall be in writing or by telefax but no change in the price or substance of the tender shall be sought, Offered or permitted except as required to confirm correction of arithmetical errors Discovered by the Engineer during the evaluation of tenders.

Prior to the detailed evaluation of tenders, the Engineer will determine whether each tender is responsive to the requirements of the tender documents.

The Employer/Engineer will award, the contract to the tenderer, whose tender has been determined to be substantially responsive, complete and in accordance with the tender documents and whose evaluated Price has been determined to be the lowest. Negotiations, if any, shall be carried out with lowest responsive tenderer.

**27. EMPLOYER'S RIGHT TO ACCEPT ANY TENDER AND TO REJECT ANY OR ALL TENDERS**

The Employer reserves the right to accept or reject any tender, and to annul the tender process and reject all tenders, at any time prior to award of contract, or to divide the contract between / amongst tenderers without thereby incurring any liability to the affected tenderer or tender's or any obligations to inform the affected tenderer or tender's of the grounds for the Employer's action.

**28. SIGNING OF AGREEMENT**

The Engineer/Employer shall prepare the Agreement in the Performa included in this Document, duly incorporating all the terms of agreement between the two parties. However, the successful tenderer shall arrange the necessary Non-judicial stamp Papers of requisite value and attend the Owner office to execute the agreement within two weeks of the date of receipt of the "Letter of

acceptance” duly Acknowledged and signed by the successful tenderer. Up on executing the agreement the original agreement will be retained by the employer and one copy of the Agreement duly signed by the Employer and the Contractor through their authorized Signatories will be supplied by the Employer to the contractor.

**29. RISKS AND COST**

In case contractor fails to complete work as per schedule, Owner has discretion to get the work done completed by any other agency at risk and cost of the agency to which the work has initially been awarded by giving seven days notice.

**30. SAFETY PRECAUTIONS DURING PROGRESS OF WORKS**

The contractor shall take all precautions to ensure safety of the staff, existing utility services, adjoining structures etc., during progress of work. The contractor shall also make necessary arrangement for the safety of his workers, if any accident occurs, the entire responsibility fall on the part of the contractor.

**31. FORCE MAJEURE**

War, invasion, revolution, riot, sabotage, lockouts, strikes, work shut down imposed by Government, acts of legislative or other authorities, stoppage in supply of raw materials, fuel or electricity, break down of machinery by mob or mass, act of God, epidemic, fires, earthquakes, floods, explosives, accidents and navigation blockages, or any other acts or events whatsoever, which are beyond reasonable controls of contractor and which shall directly or indirectly prevent completion of project within the time specified in the agreement, will be considered Force Majeure. Owner shall grant necessary extension of completion date to cover the delays caused by Force Majeure without any financial repercussions

**32. SETTLEMENT OF DISPUTES.**

Matters will be finally determined by Owner. All disputes and differences of any kind whatsoever arising out of or in connection with the contractor, whether during the progress of the works or after their completion and whether before or after the determination of the contract shall be referred by the contractor to and Owner shall within a reasonable time after their presentation made and notify decisions thereon in writing. The decisions, directions, classification, measurements drawings and certificates with respect to any matter the decision of which is specially provided for by these or other special conditions, given and made by the Owner or a by the Engineer on behalf of the Owner, are matters which are referred to hereinafter as accepted matters and shall be final and binding upon the contractor and shall not be set aside on account of any infirmity, omission, delay or error in proceedings, In or about the same or any other ground or for any other reasons and shall be without appeal. In the event of any dispute or differences between the parties hereto as to the construction or operation of this contract or the respective rights and liabilities of the parties on any matter in question, dispute or differences on any account, or as to the withholding by Owner of any certificate to which the contractor may claim to be entitled to or if the Owner fails to make a decision within a reasonable time, then and in any such case, the contractor after 30 days of presenting his final claim on disputed matter may demand in writing that the dispute or differences be referred to arbitration. Such demand for arbitration shall specify the matters which are in question dispute or differences and only such disputes or differences of which the demand has been made and no other, shall be referred to arbitration, obligations during tendency of arbitration work under the contract, shall unless otherwise directed by the Engineer, continue during the arbitration proceedings and no payment

due or payable by Owner. shall unless withheld on account of such proceeding, provided however, it shall be open for the arbitrator or arbitrators to consider and decide whether or not such work should continue during arbitration proceedings.

**33. ARBITRATION**

Matters in question, dispute or differences to be arbitrated upon shall be referred to for decision to a sole arbitrator who shall be a nominated person appointed by Management of Owner, whose decision shall be final and binding to the contractor.

The work shall be continued as per programme during pendency of arbitration.

**34. ON ACCOUNT PAYMENT**

The Contractor shall be entitled to take from time to time by way of on account Payments only for such works as in the opinion of Owner he has executed in terms of the Contract. A certificate of measurement shall be subject to any deduction which may be deemed necessary by Owner for non-execution of any work or any part of the work.

**35. RUNNING PAYMENTS NOT PREJUDICIAL TO FINAL SETTLEMENT**

Running payment made to the contractor shall be without prejudice to the final payment of accounts (except where measurements are specifically noted in the measurements book as final measurements and as such have been signed by the contractor) and shall in no respect be considered or used as evidence of any facts stated or in or to be inferred from such accounts not of any particular quantity of works having been executed nor of the manner of its execution being satisfactory.

**36. PAYMENT TO CONTRACTOR.**

The payment to the contractor shall be made as per the actual work done at site after submission of bills in triplicate duly verified by PMC/ Architect/ Engineer at a frequency of 45 Days or when the value of work exceeds Rupees 40 Lakhs

**37. SECURITY DEPOSIT**

Security Deposit @ 5% of value of the work done subject to Rupees 25 Lakhs which shall be withheld on every running account bill and the same will be released on completion of defect liability period to the entire satisfaction of owner/ Architect/ PMC. Any defects/ flaws found in work during this period shall have to be rectified by contractor. In case of non compliance such the security Deposit will be forfeited.

**38. Certificate of completion of work**

As soon as in the opinion of the Owner, Architect & Consultant, the work shall have been substantially completed the Owner shall issue a certificate of completion in respect of work.

**39. Other Conditions**

In case of premature termination, no extra compensation shall be payable. Payment of remuneration in that case will be made to the extent the services rendered till that time can be made use of by Owner limited to the period for which the agency had actually rendered the

service and subject to the intermediate targets being adhered to as per the work schedule mutually agreed to. No notice of termination or remuneration thereof will be necessary and continuance shall be solely at the discretion of owner.

All the documents and drawings created out of the assigned work will become the sole property of the Owner and Owner will be free to use the same in any manner deemed fit.

The agency will exercise all responsible skill, care and diligence in the performance of the service under this work and shall carry out all the responsibilities with recognized latest professional standards.

All the work area shall be properly barricaded or covered with protective screen made out of specified fabric(HDPE) as per the guidelines or norms of National Green Tribunal (NGT). Necessary watch and ward luminous indicators etc. as required shall be provided at the cost of the contractor. Reflective paint/tape shall be provided on barricades to ensure safety at night. Adequate measures shall be taken to ensure that no water or soil spillover the road. The specifications for the works are attached. All work shall be carried out in accordance with relevant IS codes or any other internationally accepted standards e.g. British Standards or ASTM.

Quality of the work undertaken is of paramount importance. The thrust of the investigation is to obtain good quality and reliable technical data, which will form the basis of subsequent design. Constant site supervision will be necessary to ensure that the desired end result is obtained. if you need to associate with another company in executing the works then this should be clearly mentioned in your offer. The details of laboratory where the samples to be tested shall also to be indicated.

## SECTION –V

### GENERAL CONDITIONS OF CONTRACT

Except where provided for in the description of the individual items in the schedule of quantities and in the specification and conditions laid down here in after and in the drawings, the works shall be carried out as per standard specifications and under the direction of the employer / architect

#### **1. DEFINITIONS & INTERPRETATIONS:**

In construing these conditions, the specifications, bill of quantities and contract agreement etc., the following words shall have the meaning herein assigned to them except where the subject or context otherwise required.

- Ia. “Employer” means **I.P. College** at 31, Sham Nath Marg, Alipur Road Delhi, it includes the EMPLOYER, successors and assigns.
- Ib. “Architect” means M/s. Swati Structure Solutions Private Limited, 503, Sachdeva Corporate Tower, Plot # 08, Sector-8, Rohini, Delhi- 110085- **Tele No. 09953416367**, and their authorized nominees and representative or such other
- Ic. “ENGINEER” means clerk of works (paid by the society) and shall be nominated by the EMPLOYER in writing or the technical representative of the EMPLOYER at site for all matters pertaining to execution, supervision, quality control etc.
- II. “Contractor” is the successful tenderer in whose favor the contract has been awarded by the EMPLOYER to perform the works covered by the contract and shall be deemed to include the Contractors ‘successors, heirs, executors, administrators, representative or permitted assigns approved by the EMPLOYER and will be referred to as if on masculine gender and singular \ number throughout in these documents.

#### **2. ASSIGNMENT AND SUB-CONTRACTING:**

The CONTRACTOR shall be deemed to have based his sufficiency of the tender on the data made available by the EMPLOYER and of Tender on his own inspection & examination, all as mentioned. The contractor shall be deemed to have satisfied himself as to and prices stated in the Schedule of rates, all of which shall except or otherwise provided in the contract, cover all his obligations under the contract (including those in respect of supply of goods, material, plants or services and contingencies) and matter the things necessary for the proper execution completion of the work including rectification of defects.

The CONTRACTOR shall not without prior approval /consent of the EMPLOYER/ARCHITECT assign the contract or any part there of, provided that the CONTRACTOR shall not be required to obtain such consent for:

- a. The provision of labour.
- b. The purchase of material.
- c. The sub-contracting of any part of the work for which the sub-contractor’s name is mentioned in the tender.

- 2.1 If any dispute / ambiguity / discrepancy arises between the CONTRACTOR and the ARCHITECT/ENGINEER pertaining to the interpretation of the contractor Agreement, the same shall be referred to the EMPLOYER whose decision shall be final and binding on both the parties.
- 2.2 Adverse physical obstruction's or conditions: If however arise, during the execution of the work the contractor faces physical obstruction or physical conditions, other than climate conditions on the site than he shall forthwith give notice to the ARCHITECT in writing, with a copy to the EMPLOYER, on receipt of such notice, the ARCHITECT shall, in his opinion such obstruction or condition which the CONTRACTOR, determined, any extension of time to the contractor, after obtaining approval from the Employer.

### **3. LETTER OF ACCEPTANCE:**

Before signing of the contract, the EMPLOYER shall issue by hand or by registered post or otherwise dispatch at the registered office of the contractor, letter of acceptance for execution of the work in accordance with contract until a formal contract agreement is prepared and executed, the tender documents agreement letter, area schedule, payment schedule general conditions of contract, scope of work and specifications and documents submitted by tenderer to gather correspondence exchanged from the receipt of the tender to acceptance and together with the Employer's letter of acceptance along with the documents mentioned at 1.2.3 of NIT shall constitute a binding contract between the parties.

### **4. CONTRACTOR'S SUPERINTENDENCE:**

The CONTRACTOR and his authorized agent/ staff (approved by the EMPLOYER/ ARCHITECT) shall provide all necessary superintendence during the execution of the works and as long as the ENGINEER may consider necessary for the proper fulfilling of the CONTRACTOR's obligations under the contract.

Proper team of Engineers, Planners, Architect, Support Staff, Technical Assistants, Clerical Staff, Skilled & Unskilled labour shall be deployed at site for completion of the work.

- a) Site in charge- A graduate Civil ENGINEER having minimum 15 years experience and adequate exposure to various works of similar nature or magnitude. The non-deployment of this Site Engineer shall cause EMPLOYER to recover Rs. 25, 000/- P.M. from the contractor.
- b) Additional ENGINEER staff/ Technical assistants- who are qualified including qualified electrical, sanitary and plumbing ENGINEERS experienced in their respective fields and leading hands who are competent to give proper supervision ensuring quality and output of the work, are required to supervise the work including all services. The non-deployment of these Technical assistants shall cause EMPLOYER to recover Rs. 15, 000/- P.M. from the contractor.
- c) Such skilled, Semi-skilled, unskilled labours as are necessary for the proper timely execution, completion of the works.

### **5. QUANTITY VARIATIONS:**

The detail of quantities, unless otherwise stated shall be deemed to have been prepared in accordance with the tender drawings, measurement of the quantities are to be considered as estimated and not

accurate because if any changes are required at the time of construction due to some practical problems, any change due to change of some bye-laws etc. The contractor shall execute the same at the original contract rates only.

#### **6. EXTENSION OF TIME FOR COMPLETION:**

If in the opinion of EMPLOYER/ ARCHITECT the works be delayed for reasons beyond the control of the CONTRACTOR, the Society may give a fair and reasonable extension of time for completion of the construction works.

If the CONTRACTOR needs an extension of item for the completion of the work or if the completion of work is likely to be delayed for any reasons beyond the due date of completion stipulated in the contract, the CONTRACTOR shall apply to the EMPLOYER for extension of time in writing at least 30 days before the expiry of the Scheduled time and while applying for extension of time CONTRACTOR shall furnish the response in detail and his justification, if any for the delays. While granting extension, the EMPLOYER shall notify the CONTRACTOR the period of time which will not qualify for imposition of liquidated damages.

#### **7. TENDERER SHALL VISIT THE SITE**

Intending tenderer shall visit the site and make himself thoroughly acquainted with the local site condition. Nature and requirement of the work, facilities of transport condition. Effective labour and materials, access and storage for material and removal of rubbish. The tenderer shall provide in their for cost of carriage, freight and other charges as also for any special difficulties and including police restrictions for transport etc. for proper execution of work as indicated in the drawings. The successful tender will not be entitled to any claim of compensation for difficulties faced or loses incurred on account of any site condition of the Employer/Architect might be deemed to have reasonably been inferred to be existing before commencement of work.

#### **8. GOVERNMENT AND LOCAL RULES**

The contractor shall confirm to the provision of all local bylaws and Acts relating to the work and to the Regulations etc. of the Government and local Authorities and of any company with whose system the structure is proposed to be connected. The contractor shall give all notices required by the said Acts, Rules, and Regulations Bylaws etc. and pay all fees payable to such Authority / Authorities for execution of the work involved. The cost, if any shall be deemed to have been included in his quoted rates, taking into account all liabilities for licenses, fees for footpath encroachment and restorations etc. and shall indemnify the employer against such liabilities and shall defend action arising from such claims or liabilities.

#### **9. TAXES AND DUTIES**

The tenderer must include in their tender prices quoted for all duties, royalties, access, excise, sales tax, work contract sales tax and Service Tax. Nothing extra shall be payable over and above quoted price.

#### **10. QUANTITY OF WORK TO BE EXECUTED**

The quantities shown in the Schedule of quantities are intended to cover the entire new structure indicated in the drawings but the Employer reserves the right to execute only a part or the whole or any excess thereof without assigning any reason therefore.

## **11. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY**

The contractor shall provide everything necessary for the proper execution of the work according to the intent and meaning of the drawings, schedule of quantities and specifications taken together whether the same may or may not be particularly shown or described therein provided that the same can reasonably be inferred there from and if the Contractor finds any discrepancies therein he shall immediately and in writing refer the same to the Employer /Architect whose decision shall be final and binding. The Contractor shall provide himself for ground and fresh water for carrying out the work at his own cost. The Employer shall on no account be responsible for the expenses incurred by the Contractor for hired ground or fresh water obtained from elsewhere.

The rates quoted against individual items will be inclusive or everything necessary to complete the said items of work within the contemplation of the contract, and beyond the unit price no extra payment will be allowed for incidental or contingent work, labour and/or materials inclusive of all taxes and duties whatsoever except for specific items, if any stipulated in the tender document. The Contractor shall supply, fix and maintain at his own cost, for the execution of any work, all tools, tackles, machineries and equipments and all the necessary centering, scaffolding staging, planking, timbering, strutting, shoring, pumping, fencing, boarding, watching and lighting of night as well as by day required not only for the proper execution and protection of the said work but also for the protection of the public and safety of any adjacent roads, streets, walls, homes, buildings, all other erections, matters and things and the Contractor shall take down and remove any all such centering, scaffolding, planking, timbering, strutting, shoring, etc, as occasion shall be required or when ordered so to do, and shall fully reinstate and make good all matters and things disturbed during the execution of work to the satisfaction of the Employer / Architect.

The Contractor shall provide such temporary road on site as may be necessary for the proper performance of the contract and for his own convenience but not otherwise. Upon completion, such road shall be broken up and leveled where so required by the drawings unless the Employer shall otherwise direct.

The Contractor shall at the times give access to workers employed by the Employer or any men employed on the buildings and to provide such parties with proper sufficient and if required, special scaffolding, hoists and ladders and provide them with water and lighting and leave or make any holes, grooves etc. in any work, where directed by the employer as may be required to enable such workmen to lay or fix pipes, electrical wiring, special fittings, etc. The quoted rates of the tenders shall accordingly include all these above mentioned contingent work.

## **12. TIME OF COMPLETION, EXTENSION OF TIME AND PROGRESS CHART**

- a) Time of Completion: The entire work is to be completed in all respects within the stipulated period. The work shall be deemed to be commenced within 10 (Ten) days from the date of issue of formal work order or the date on which the Contractor is instructed to take possession of the site whichever is earlier. Time is the essence of the contract and shall be strictly observed by the Contractor.
- b) Extension of Time : If in the opinion of the Employer / Architect the work be delayed (a) by reason of any exceptionally inclement weather, or (b) by reason of instruction from the Employer / Architect in consequence of proceedings taken or threatened by or disputes, with adjoining or neighboring owners or (c) by the work, or delay, of other contractors or tradesmen engaged or nominated by the Employer / Architect and not referred to in the specification or (d) by reason of authorized extra and additions or (e) by reason of any combination of workmen or strike or lock-out affecting any of the building trades or (f) from other causes which the Employer / Architect



before the completion of the time allowed for the contract shall make fair and reasonable extension of time for completion in respect therefore. In the event of the Employer failing to give possession of the site upon the day specified above the time of completion shall be extended suitably. In case of such strikes or lock-outs, as are referred to above, the Contractor shall, Immediately give the Employer / Architect, written notice thereof. Nevertheless, the contractor shall use his best endeavors to prevent delay, and shall do all that may be reasonably required, to the satisfaction of the Employer / Architect to proceed with the work and on his doing so that it will be ground of consideration by the Employer / Architect for an extension of time as above provided. The decision of the Employer as to the period to be allowed for an extension of time for completion hereunder (which decision shall be final and binding on the Contractor) shall be promulgated at the conclusion of such strike or lock-out and the Employer shall then, in the event of extension being granted, determine and declare the final completion date. Hindrance Register shall be maintain and proper record of hindrances arisen and solved with the dates to be recorded in the register by the Owner's Site Engineer, Architect's Site Engineer and Contractor's authorized representative so that extension of time limit to granted can be derived from the register, and recommended by the Architect and approved by the Bank's competent authority.

- c) Progress of work / Work program : During the period of construction the contractor shall maintain proportionate progress on the basis of a Program Chart submitted by the contractor immediately before commencement of work and agreed to by the Employer / Architect. Contractor should also include planning for procurement for scarce material well in advance and reflect the same in the Program Chart so that there is no delay in completion of the project.
- i) Separate registers for receipt or consumption of all materials (building wise or as directed by the Architect) including steel cement, tiles, wood, lead, bitumen paints, electrical fittings and sanitary ware.
  - ii) Work force including supervisory staff, skilled and unskilled labours and their payment registers.
  - iii) Site Order book, Hindrance Register in triplicate with printed page numbers.

### **13. LIQUIDATED DAMAGES**

Should the work be not completed to the satisfaction of the Employer / Architect within the stipulated period, the Contractor shall be bound to pay to the Employer a sum calculated @ 0.2% of the accepted contract sum per week of delay subject to a maximum of 2% of the accepted contract value by way of liquidated damages and not as penalty during which the work remains uncompleted or unfinished after the expiry of the completion date.

### **14. TOOLS, STORAGE OF MATERIALS, PROTECTIVE WORK AND SITE OFFICE REQUIREMENTS**

The Contractor shall provide, fix up and maintain in approved position proper office accommodation for the Contractor's representative and staff, which offices shall be open at all reasonable hours to receive instruction notices or communications and clear away on completion of the work and make good all work disturbed.

All drawings maintained on the site are to be carefully mounted on boards of appropriate size and covered with a coat of approved varnish. They are to be protected from ravages of termites, ants, and other insects.

The Contractor shall provide at his own cost all artificial light required for the work and to enable other within contractors and sub contractors to complete the work the specified time.

The Contractor shall provide a suitable temporary hut for the use of workers and field staff and keep the same in a clean and sanitary condition to the satisfaction of the Public Health Authorities and shall cause such latrines and soil to be cleared away whenever necessary and shall make good all the work disturbed by these conveniences.

Every precaution shall be taken by the contractor to prevent the breeding of mosquitoes on the work during the construction and all receptacles. Cisterns, water tanks etc. used for indemnify the Employer against any breach of rules in respect of anti-malarial measures. The Contractor shall not fix or place any placards or advertisement of any description of permit the same to be fixed or placed in or upon any boarding gantry, building structure other than those approval by the Employer.

### **Protective Measures**

The contractor from the time of being placed in possession of the site must make suitable arrangements for watching, lighting and protecting the work, the site and surrounding property by day, by night, on Sundays and other holidays.

The Contractor shall indemnify the Employer against any possible damage to the building roads, or member of the public in course of execution of the work.

The contractor shall provide necessary temporary enclosures, gates, entrances etc. for the protection of the work and materials and for altering and adopting the same as may be required and removing on completion of the work and making good all work disturbed.

The Contractor will have to provide watch and ward during the construction of the building and till:

- i) Virtual completion
- ii) Handing over of the buildings
- iii) The work of all trades completed
- iv) Defect liability period

Whichever is later or till it is occupied. No extra payment will be made for the above.

### **Storage of Materials**

The Contractor shall provide and maintain proper sheds for the proper storage and adequate protection of the materials etc. and other work that may be executed on the site including the tools and materials of subcontractors and remove same on completion. Sheds for storage of cement are to have pucca floor raised above the ground. Cement godown shall be constructed for storing about six weeks requirements of cement and stored as per norms with a stack of 10 bags each one. Two ft. opening all around with two ft. passage of each stack. Structure shall be waterproof from all the sides and top. Cement should be stored one ft. above the ground level and have pucca raised floor.

So also reinforcement bars are to be stored above the ground level to prevent the same from getting rusted.

### **Tools**

All tools, equipments and instruments as instructed by the Employer / Architect and considered necessary for the work shall be provided by the Contractor for the due performance of this contract.

All measuring, tapes shall be of steel and suitable scaffolding and ladders that way be required for safely taking measurement shall be supplied by the Contractor.

The ministries and the supervisors on the work shall carry with them always a one meter or two meter steel tapes and a measuring tape of 30 meters, a spirit level, a plumb bob and a square and shall check the work to see that the work is being done according to the drawing and specifications. The Site Engineer will use any or all measuring instruments or tools belonging to the contractors as he chooses for checking the work executed or being executed on the contract. The contractor should cover in his rates for making provision for all reasonable facilities for the use of his scaffolding, tools and plant etc. by sub-contractors for their work.

## **15. CLEARING SITE AND SETTING OUT WORK**

The site shown on the plan shall be cleared of all obstructions, loose stone, and materials rubbish of all kinds. All holes or hollows whether originally existing or produced by removal or loose stone or materials shall be carefully filled up with earth well rammed and leveled off as directed at his own cost.

The contractor shall set out the work and shall be responsible for the true and perfect setting out of the work and for the correctness of the positions, levels, dimensions and alignment of all parts thereof. If at any time, any error shall appear during the progress of any part of the work the Contractor shall at his own expenses rectify such error, if called upon to the satisfaction of the Employer / Architect. The Contractor shall further set out the work to the alternative positions at the site until one is finally approved and the rates quoted in his tender should include for this and no extra on this account will be entertained.

## **16. CONTRACTOR IMMEDIATELY TO REMOVE ALL OFFENSIVE MATTERS**

All soil, filth or other matters of an offensive nature taken out of any trench, sewer, drain, pool or other place shall not be deposited on the surface but shall be at once carted away by the contractor to a safe place as per rules of the appropriate authorities, i.e. The contractor shall keep the foundations and work free from water and shall provide and maintain at his own expenses electrical or other power driven pumps and other plant to the satisfaction of the Employer for the purpose, until the building is handed over to the Employer.

The Contractor shall arrange for the disposal of the water so accumulated to the satisfaction of the Employer and the local authority and no claims will be entertained afterwards if it does not include in his rates for the purpose.

## **17. ACCESS**

Any authorized representative of the Employer / Architect shall at all reasonable times have free access to the work and/or to the workshops, factories or other places where materials are being prepared or constructed for the work and also to any place where the materials are lying or from where they are being obtained, and the Contractor shall give every facility to the Owner or their representatives necessary for inspection and examination and test of the materials and workmanship. Except the representatives of the Employer and Architect no person shall be allowed at any time without the written permission of the Employer.

**18. REMOVAL OF IMPROPER WORK**

The Employer / Architect shall during the progress of the work have power to order in writing from time to time the removal from the work within such reasonable time or times as may be specified in the order of any materials which in the opinion of the Employer / Architect are not in accordance with specifications or instruction, the substitutions or proper re-execution of any work executed with materials or workmanships not in accordance with the drawing and specifications or instruction. In case the Contractor refuses to comply with the order the Employer / Architect shall have the power to employ and pay other agencies to carry out the work and all expenses consequent thereon or incidental thereto as certified by the Employer / Architect shall be borne by the Contractor or may be deducted from any money due to or that may become due to the contractor. No certificate which may be given by the Architect shall relieve the contractor from his liability in respect of sound work or bad materials.

**19. SITE ENGINEER/ PROJECT MANAGEMENT CONSULTANT (PMC)**

The term site Engineer / Project Management Consultant (PMC) shall mean the person appointed and paid by the Employer to supervise the work. The contractor shall afford the Site Engineer / PMC every facility and assistance for examining of the work and materials and for checking and measuring work and materials. The Site Engineer / PMC shall have no power to revoke, alter, enlarge or relax any requirements of the contract or to sanction any day work, additions, alternations, deviations of omission or any extra work whatever, except in so far as such authority may be specially conferred by a written order of the Employer.

The Site Engineer / PMC shall have power to give notice to the Contractor or to his foreman of non approval of any work or materials and such work shall be suspended or the use of such materials shall be discontinued until the decision of the Employer / Architect is obtained. The work will from time to time be examined by the Architect, Engineer from the Premises Department of the Employer and the Site Engineer / PMC. But such examination shall not in any way exonerate the Contractor from the obligation to remove any defects which may be found to exist at any stage of the work or after the same is complete. Subject to the limitations of this clause the Contractor shall take instruction only from the Employer / Architect.

**20. OFFICE ACCOMMODATION FOR THE SITE ENGINEER/PMC**

The Contractor shall provide, erect and maintain at his cost a separate simple water tight office accommodation for the Site Engineer / PMC in case it is not already available at site. This accommodation shall be well lighted and ventilated and provided with windows, door with a lock. The Site Engineers/PMC's office shall be a minimum of 14 Sqm. (150 St.) and the Contractor shall provide a desk, chairs, drawers for keeping drawings, a cupboard having proper lock and a teak board for displaying drawings and lights and fans. The accommodation shall be demolished when directed.

**21. DISMISSAL OF WORKMEN**

The Contractor shall on the request of the Architect / Employer immediately dismiss from work any person employed thereon by him, who may in the opinion of the Architect / Employer be unsuitable or incompetent or who may misconduct himself. Such discharge shall not be the basis of any claim for compensation or damages against the Architect / Employer or any of their officer or employee.

**22. ASSIGNMENT**

The whole of the work included in the contract shall be executed by the Contractor and the Contractor shall not directly or indirectly transfer, assign or underlet the contract or any part, share or interest therein nor, shall take a new partner, without written consent of the Employer and no subletting shall relieve the Contractor from the full and entire Responsibility of the contract or from active superintendence of the work during their progress.

**23. MEASUREMENTS**

Before taking any measurements of any work, the Site Engineer / PMC or a subordinate deputed by him shall give reasonable notice to the Contractor. If the Contractor fails to attend at the measurements after such notice/ or fails to countersign or to recorded the difference within a week from the date of measurement in the manner required by the Site Engineer/ PMC then in any, such event the measurement taken by the Site Engineer/ PMC or by the Subordinate deputed by him as the case may be is final any binding on the Contractor and the Contractor shall have no right to dispute the same.

**24. VARIATION/ DEVIATION**

The Contractor may when authorized and shall, when directed in writing by the Architect / Employer add and or omit, or vary the work shown in the drawings or described in the specifications or included in the period schedule of quantities. The Contractor on his own accord shall make no addition, omission or variation without such authorization or direction by the Architect/ Employer shall when confirmed correctly by the Contractor in writing within 3 days shall be deemed to have been given in writing.

The price of all such addition/ non-tendered items will be worked out on the basis of rates quoted for similar items in the contract wherever existing or on engineering rate analysis based on prevalent fair price of labour, materials at site of work including wastage plus 10% towards Taxes and Contractor's profit, supervision, overhead etc. The tender rates shall hold good for variation in qty to any extend.

**25. PREPARATION OF BUILDING WORK FOR OCCUPATION AND USE ON COMPLETION.**

The whole of the work will be thoroughly inspected by the Contractor and deficiencies and defects put right completion of such inspection, he shall inform the Architect that he has completed the work and it is ready for inspection.

On completion, the Contractor shall clean all windows doors including cleaning and oiling, if necessary, of all hardware, inside & outside, all floors, staircases and every part of the building. He will leave the entire building neat and clean but ready for immediate occupation and to the satisfaction of the Employer/ Architect.

**26. CLEARING SITE ON COMPLETION**

On completion of the work the Contractor shall clear away and remove from the site/ complex all constructional plant surplus materials, rubbish and temporary work of every kind and leave the whole of the site and the work clean and in a workmanlike condition to the satisfaction of the Employer/ Architect.

**27. DEFECTS AFTER COMPLETION**

Contractor shall make good at his cost and to the satisfaction of the Employer/ Architect all defects, shrinkage, settlement or other faults which may appear within 6 (six) months after completion of the work and considered as the defect liability period. In default the Employer may employ and pay other person to amend and make good such damages, losses and expenses consequent thereon or incidental thereto shall be made good and borne by the Contractor and such damage loss and expenses shall be amending and making good by the Contractor, deduct from any money due to the Contractor a sum equivalent to the cost of amending such work and in the event of the amount retained being insufficient recover that balance from the Contractor from the amount retained under Clause No. 37 of ITT together with any expenses the Employer may have incurred in connection therewith.

**28. CONCEALED WORK**

The Contractor shall give due notice to the Employer/ Architect whenever any work is to be buried in the earth, concrete or in the bodies of walls or otherwise becoming inaccessible burial, in default whereof he shall, at the opinion of the Employer/ Architect be either opened up for measurement at the Contractor's expenses or no payment may be made for such materials should any dispute or defense arise after the execution of any work as to measurements etc or other matters which cannot be conveniently lasted or checked, the notes of the Employer/ Architect shall be accepted as correct and binding on the Contractor.

**29. ESCALATION**

The rates quoted shall be firm throughout the tenure of the contract (including extension of time, if any, (granted) and will not be subject to any fluctuation due to increase in cost of materials, labour, Taxes etc. unless specifically provided in these documents.

**30. IDLE LABOUR**

Whatever the reasons may be no claim for idle labour, additional establishment cost of hire and labour charges of tools and plants would be entertained under any circumstances.

**31. SHOP DRAWINGS**

The contractor shall prepare and get it approved by Consultant/ Architect before execution of the work.

**32. ON COMPLETION SERVICES DRAWINGS**

The drawings of services like plumbing, Sewerage, Telephone, Electrical, Fire Fighting etc. on completion of the work shall be prepared and submitted by the contractor in Triplicate. The final payment will be released subject to submission of the same

## SECTION- VI

### 1.0 **SPECIAL CONDITIONS FOR CEMENT AND STEEL**

- 1.0.1. Cement, Steel (TMT Bars) and Structural steel will be procured by contractor.
- 1.0.2. The contractor shall also employ necessary watch and ward establishment for the safe custody of materials at his own cost.

### 1.1 **STEEL**

- 1.1.1 The standard sectional weights to be considered for conversion of length of various sizes of Mild Steel / CTD bars / TMT bars into weight are as under.

| <b><u>Dia in mm</u></b> | <b>Weight in Kg / Meter</b> |
|-------------------------|-----------------------------|
| 6                       | 0.222                       |
| 8                       | 0.395                       |
| 10                      | 0.617                       |
| 12                      | 0.888                       |
| 16                      | 1.580                       |
| 18                      | 2.000                       |
| 20                      | 2.470                       |
| 22                      | 2.980                       |
| 25                      | 3.850                       |
| 28                      | 4.830                       |

- 1.1.2 The following procedure shall be adopted for payment of steel.
- a. The standard sectional weights as indicated in para 1.1.1 shall be applicable for payment of steel bars above 6 mm dia for the works executed. The length measured at site shall be multiplied with the standard weights shown in 1.1.1 above to arrive at total weight of steel and the payment shall be made accordingly.
  - b. The payment for the work done will be on the basis of actual length, recorded in M.B multiplied by the standard weights given in para 1.1.1
- 1.1.3 The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in the contract document elsewhere of the contract and shall be governed by conditions laid therein.

- 1.1.4 The steel reinforcement shall be stored by the contractor at site of work about 30cm. to 45 cm. above ground. A coat of cement wash shall be given to steel bars when stored at site for long duration so as to prevent corrosion. Nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
- 1.1.5 The Actual issue and consumption of steel on work shall be regulated and proper account maintained as provided in the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in the contract and shall be governed by conditions laid therein.

The actual issue of steel shall be actual weight of total quantity of Steel received at the site less actual weight of balance quantity of steel lying unutilized at the work site.

- 1.1.7 i) Reinforcement including authorized spacer bars and lap pages shall be measured in length of different diameters as actually (not more than as specified in the drawings) used in the work nearest to a centimeter. Wastage and unauthorized overlaps shall not be measured.
- ii) The standard sectional weights referred in CPWD Specifications for works will be considered for conversion of length of various sizes of M.S. Bars, Tor Steel Bars and T.M.T. bars into Standard Weight.

## 1.2 **CONDITIONS FOR CEMENT**

- 1.2.1 The day to day actual issue / receipt and consumption of cement on work shall be regulated and proper accounts maintained as provided in the contract. The theoretical consumption of cement shall be worked out as per the procedure prescribed in the CPWD Delhi Schedule of Rates 2007 and shall be governed by conditions laid therein. If the quantity of cement actually used in the work is found to be more than the theoretical quantity of cement including authorized variation, nothing extra shall be payable to the contractor on this account. In the event of it being discovered that after completion of the work, the quantity of cement used is less than the quantity ascertained as herein before provided (allowing variation on minus side as stipulated in the contract), the cost of quantity of cement not so used shall be recovered from the contractor @ Rs. 5000/- (Rupees five thousand) only per metric tonne. Decision of Employer/Architect in regard to theoretical quantity of cement which should have been actually used as per the schedule and recovered at the rate specified, shall be final and binding on the contractor. For non-schedule items, the decision of the Employer/Architect regarding theoretical quantity of cement which should have been actually used, shall be final and binding on the contractor.
- 1.2.1.1 Cement brought to site and remaining unused after completion of work shall not be removed from site without written permission of the Employer/Architect
- 1.2.1.3 The contractor shall take all precautions to avoid accidents by exhibiting caution boards day and night. The contractor shall be responsible for all damages and accident due to negligence on his part.
- 1.2.1.4 No foreign exchange shall be made available by the Owner for the purchase of equipments, plants, machinery, material of any kind or other items required to be carried out in execution of work.



1.2.1.4 The contractor shall be bound to follow the instructions and restrictions imposed by the Administration / Police authorities on the working and / or movement of labour, materials etc. and nothing extra shall be payable on this account or due to less / restricted working hours or any detours in movement of vehicles.

## SECTION- VII

### **TESTING OF MATERIALS & BRIEF SPAECIFICATIONS**

#### **1.0 TESTING OF MATERIALS:**

The contractors shall establish and maintain at their own cost in full working order a well equipped laboratory at site for the testing of all materials to be used in the work, the laboratory shall be accommodated in a secured, independent, temporary structure and shall be equipped with amongst other. The following testing equipment, (1) Compression testing machine (2) moulds (24 Nos.) sieves and jars, (3) Cones for slumps test, (4) Bins for storage of materials (5) Weigh balances with weights and measures (6) necessary gauges (7) Moisture meter etc. and all/ any other testing equipment desired by Employer or the Architect, necessary for testing the material. They shall in addition, employ at their own cost a qualified laboratory assistant-cum-laboratory supervisor responsible for undertaking the assistant-cum-laboratory supervisor responsible for undertaking the time at required intervals on the instructions of the Employer /Architect and shall maintain proper register and records of all tests carried out. The laboratory shall be under the control of the Employer so may at his discretion, get additional tests done as and when required. The contractor shall procure any other additional testing equipment at their cost as and when required by the Employer/ Architect, and carry out such other tests as may be instructed to do so. All tests shall be carried out as per the relevant norms and standards laid down for the testing of the material by the latest CPWD specifications and / or the latest ISI code of practice applicable therein. The laboratory equipment should be periodically got calibrated by the Contractor at their cost as required by the Employer/needful done at the risk & cost of the Contractor and recover the amount spent from the Contractor's bill. Material unable to be tested in the laboratory at site, shall be got tested from the Shriram Test House, Delhi. The Contractor shall also get Employer's cement and steel tested at his own cost, at regular intervals commensurate to supply, as and when directed by the Employer. In additional cement boiling test as per IS9013/78 to determine the accelerated compressive strength shall be carried out by the contractor as and when directed by the Employer determine the quality of cement received at site from each consignment.

#### **2.0 BRIEF SPECIFICATION:**

Brief specifications of the building has been described as follows:

##### **BREIF SPECIFICATION**

| <b>S.NO.</b> | <b>ITEM</b>           | <b>DESCRIPTION</b>  |
|--------------|-----------------------|---|
| 1.           | <b>FOUNDATION</b>     | RCC raft foundation has been designed for B+S+8 Storeyed structure.   |
| 2.           | <b>SUPERSTRUCTURE</b> | Earthquake Resistant RCC frame structure with 9" thick outer wall & 4.5" thick internal partition wall made of burnt clay bricks. |

#### **3.DOOR WINDOWS FRAMES & SHUTTERS:**

- a) **Door/Window Frames:** All the door window frames will be of Malaysian salwood.
- b) **Window shutters:** All wooden shutters of windows and ventilators in flats shall be of Ghana (Teak) wood.

c) **Door shutters:** All the shutters will be flush doors inside the flats but at main entrance the flush door will be one side teak veneered. Provision for MS jail and grill shutter at entrance.

4. **HARDWARE:** Aluminium anodized or powder coated fittings for all door/ windows & brass mortice lock shall be fixed at main entrance of flats.

5. **STEEL WORKS:** MS railing at balcony and passage shall be as per as sample approved by the Employer/ Architect.

#### 6. FLOORING WORKS:

- a) **Drawing & dining room:** Vitrified Tile of Approved Shade & make.  
(Not less than Rs 40/- per sqft)
- b) **Bedrooms:** Vitrified Tile of Approved Shade & make.  
(Not less than Rs 40/- per sqft)
- c) **Kitchen & Balconies:** Rajnagar marble flooring (Range Rs. 45/- to 50/- per sqft.)
- d) **Toilet:** Ceramic glazed tile of approved sample Rs 40/-
- e) **Staircase & lift lobby:** Kota stone flooring.

#### 7. FINISH:

- a) **Entrance door:** Sprit polish
- b) **Door/ window:** Enamel paint.
- c) **Internal:** Plain cement plaster and Oil Bound Distemper in all the rooms.
- d) **Ceiling:** White wash.
- e) **External:** Acrylic Smooth Exterior Paint (as approved by the Society).
- f) **Liftwall:** Pre-polished Granite stone (as approved by the Society).

#### 8. TOILETS:

- a) One toilet will have I.W.C. and others will have EWC.
- b) Printed glazed tile Upto 7'-0" shall be provided in all toilets.
- c) Provision for geyser/ hot water supply in each toilet.
- d) CP fittings in each toilet as per approved make and sample.
- e) Mixture shall be provided in master bedroom, toilet & kitchen) First class china wares shall be provided in each toilet.

#### 9. KITCHENS:

- a) Printed glazed tile upto 2'-6" above the kitchen counter and other wall upto the same level starting from floor level & walls below the kitchen sink.
- b) Stainless steel kitchen sink with single bowl with drain board.
- c) Black Granite stone slab shall be provided at the top of kitchen counter.
- d) Geyser point shall be provided for hot water supply.

#### 10. SPECIFICATIONS FOR INTERNAL ELECTRICAL INSTALLATION:

##### GENERAL AND TECHNICAL

NOTE :-The work has shall be done as per C.P.W.D. Specifications and Indian electricity board rule, I.S. specifications all the material shall be approved by Engineer-in-charge / secretary of the society.

## 1. POINT WIRING

A point (other than a socket outlet point) shall include all work necessary in complete wiring to the following outlets from the controlling switch or MCB. The scopes of wiring for a point shall however, include the wiring work necessary in tapping from another point in the same distribution circuit.

- a] Points for ceiling / exhaust fan points, pre-wired light fittings, and call bells.
- b] Modular plate type switch with GI box and plate of specified make.
- c] Point wiring proposed with 1.5 sq.mm PVC insulated copper conductor cable.

### 1.1 Scope

- a] Control switch.
- b] 3 pin or 6 pin socket.

### 1.2 Point wiring for socket outlet points

- a] The light plug (6A/16A) point and power (15A / 16A) point wiring shall be complete with wiring, boxes, switches, and socket, loop earthing etc as required.

## 2. CIRCUIT AND SUBMAIN WIRING

### 2.1 Circuit Wiring and submain wiring.

Circuit wiring is inclusive of the part of wiring where the sub main wiring shall be from the main board to meter board up to distribution board.

### 2.2 Submain wiring

Submain wiring shall mean the wiring from one main / distribution switchboard to another.

### 2.3 Measurement of circuit and submain wiring

- a] Circuit and submain wiring shall be measured on linear basis along the run of the wiring. The measurement shall include all lengths from end conduit as the case may, exclusive on interconnections inside the switch board etc. The increase on account of diversion or slackness shall not be included in the measurement.
- b] The length of circuit wiring with two wires shall be measured from the distribution board to the first nearest switch box in the circuit irrespective of whether the neutral conductor is taken to switchbox or not.
- c] When circuit wires and wires of point wiring are run in same conduit/ circuit wiring shall be measured on linear basis depending on the actual number and sizes of wires run in the existing conduit.
- d] Protective (loop earthing) conductors which are run along the circuit wiring and the submain wiring shall be measured on linear basis and paid for separately.

### 3. SYSTEM OF DISTRIBUTION AND WIRING

#### 3.1 Distribution

- a) Main distribution board shall be controlled by a circuit breaker or linked switch with fuse. Each outgoing circuit shall be controlled by a switch with fuse, circuit breaker or only a fuse on the phase or live conductor.
- b) The branch distribution board shall be controlled by a linked switch fuse or circuit breaker. Each outgoing circuit shall be provided with a fuse or miniature circuit breaker (MCB) of specified rating on the phase or live conductor.
- c) Triple pole distribution boards shall not be used for final circuit distribution, unless specific approval of the Engineer-in-charge is obtained. In such special cases, the triple pole distribution boards shall be of HRC fuse type or MCB type only.
- d) The loads of the circuits shall be divided, as far as possible, evenly between the numbers of ways of the distribution boards, leaving at least one spare circuit for future extension.
- e) 'Power' wiring shall be kept separate and distinct from 'Lighting' wiring, from the level of circuits i.e. beyond the branch distribution boards.

#### 3.2 Wiring system

- a) Unless and otherwise specified in the tender documents, wiring shall be done only by the "Looping system". Phase or live conductors shall be looped at the switch boxes and neutral conductors at the point outlets.
- b) Lights, fans and call bells shall be wired in the 'lighting' circuits. 15A/ 16A socket outlets and other power outlets shall be wired in the 'Power' circuits. 5A/ 6A socket outlets shall be wired in the 'lighting' circuits in non-residential buildings and in the 'power' circuit in residential buildings.

#### 3.3 Passing through walls or floors

- a) Where a wall pipe passes outside a building so as to be exposed to weather, the outer end shall be mounted and turned downwards and properly bused on the open end.

#### 3.4 Joints in wiring

- a) There shall be no joints in the through-runs of cables. If the length of final circuit or sub-main is more than the length of a standard coil, thus necessitating a through joint, such joints shall be made by means of approved mechanical connectors in suitable junction boxes.
- b) Termination of multi-stranded conductors shall be done using suitable crimping type thimbles.

4. RATING OF OUTLETS (TO BE ADOPTED FOR DESIGN)

- a] Ceiling fans shall be rated at 60 W. Exhaust fan, fluorescent tubes, compact fluorescent tubes, HPMV lamps, HPSV lamps etc. shall be rated according to their capacity. Control gear losses shall be also considered as applicable.
- b] 5A / 6A and 15A / 16A socket outlet points shall be related at 100W and 1000W respectively, unless the actual values of loads are specified.

5. CAPACITY OF CIRCUITS:

- a] "Lighting" circuit shall not have more than a total of 10 points of light, fan and socket outlets, or a total connected load of 800W, whichever is less.
- b] "Power" circuit shall be designed with only one outlet per circuit in nonresidential buildings. The circuit shall be designed based on the load. Where not specified, the load shall be taken as 1 KW per outlet.
- c] "Power" circuit in residential buildings shall be designed for not more than two outlets (15A/ 16A and / or 5A/ 6A) per circuit. The ratings for load calculation purposed shall however be taken as per the type of outlets.
- d] Load more than 1 KW shall be controlled by an isolator or miniature circuit breaker.

6. WIRING ACCESSORIES

6.1 Control switches for points

- a] Control switches of 15A/ 16A rating may preferably be only of modular type. If, however, modular type switch is used for controlling a socket outlet, combined switch cum socket shall not be permitted.
- b] Power (15A/ 16A) outlets shall be controlled by single pole modular type switches or by MCB's, where specified. Only MCB's shall be used for controlling industrial type socket outlets, and power outlets above 1 KW.

6.2 Socket outlets

- a] Socket outlets shall be of the same type, namely modular type, as their control switches. These shall be rated either for 5A/ 6A, or 15A/16A. Combined 5A/ 15A, or 6A/ 16A six pin socket outlet may be provided in 'power circuits only where specified.
- b] Outlet boxes for socket outlets (both 15A/ 16A and 5A/ 6A) points in residential buildings shall be of size 175mm x 100mm.
- c] 5A/ 6A and 15A/ 16A socket outlets shall be installed at the following positions, unless otherwise specified.
  - i) Non-residential buildings - 23 cm above floor level.
  - ii) Kitchen - 23 cm above working platform and away from the likely positions of stove and sink.

- iii) Bathroom - No socket outlet is permitted for connecting a portable appliance thereto. MCB / IC switch may be provided above 2.1m for fixed appliances, and at least 1 m away from shower.

7. MCB TYPE DISTRIBUTION BOARD (MCBDB)

- a] MCB DB's may be of single phase, 3 phase (horizontal type) suitable for feeding single phase loads, or 3 phase (vertical type) suitable for feeding single phase as well as 3 phase loads, as specified. These shall be complete with accessories, but without MCB's which shall be specified as a separate item in the tender documents.
- b] The current ratings and the number of ways shall be as specified. Blanking plates shall be provided to close unused ways. These shall be indicated as separate item in the Schedule of work.

8. PRE-WIRED MCB DISTRIBUTION BOARDS

- a] The board shall also be provided with a loose wire box as a compartment for the complete width and, depth of the board, and of minimum height of 125mm in case of TPN DB's, and 100mm in case of SPN DB's.
- b] The board shall be provided with a hinged cover of 1.6mm thick sheet steel in the front. Only the knobs of the MCB's shall protrude out of the front covers through openings neatly machine made for the purpose.
- c] The board shall be complete with the following accessories:-
  - i) 200 A copper busbar (s).
  - ii) Neutral link.
  - iii) Common earth bar.
  - iv) DIN bar for mounting MCB's.
  - v) Elmex type terminal connectors suitable for incoming and outgoing cables.
  - vi) A set of indication lamps with HRC cartridge fuses for each phase of the incoming supply.
  - vii) Earthing stud. (s)

Note: - MCB's and blanking plates shall be specified as separate items, as required.

9. SWITCH BOARD INSTALLATION

- a] Unless and otherwise specified in the tender documents, a switchboard shall not be installed so that its bottom is within 1.25 m above the floor.
- b] There shall be a clear distance of 1 m in front of the switch boards. The space behind the switchboards shall be either less than 20 cm or more than 75 cm. If there are any attachments or bare connections at the back of the switch board. Rule 51 (c) of the Indian Electricity Rules shall apply.
- c] Where it is required to terminate a number of conduits on a board. it may be convenient to provide a suitable MS adopter box for the purpose. Such boxes shall be provided with the prior approval of the Engineer-in-charge and this will be paid for separately.















































































