



**MAZAGON DOCK SHIPBUILDERS LIMITED**

(Formerly known as Mazagon Dock Ltd.)

CIN : U35100MH1934GOI002079

(A Government of India Undertaking)

Shipbuilders to the Nation

Dockyard Road, Mazagon,

Mumbai 400 010.

INDIA

**Renovation of 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, & 6<sup>th</sup> Floor of Service  
Block-including Civil, Plumbing, Furniture,  
Electrical, HVAC & Fire fighting work at MDL,  
Mumbai.**

**VOLUME-III**

**Scope of Work  
List of Tender Drawings  
Price Bid (Part-II)**

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**1. SCOPE OF WORK:**

**1.1. Scope of Work in brief is as under.**

**1.1.1. Civil Works:**

The work consists of Civil & Interior works including, masonry, plastering, painting, flooring & cladding, Partitions & panelling, doors & windows, waterproofing, modular/customized furniture, False ceiling, General items, Plumbing, HVAC, Electrical work, etc. are within the scope of this tender in accordance with the “drawings” and “Bill of Quantities”. It includes providing, fixing, furnishing all materials, labour-, tools and equipment and management of necessary and incidental to the construction and completion of the work. All work, during its progress and upon completion, shall conform to the lines, elevations and grades as shown on the drawings furnished by the Architects. Should any detail essential for efficient completion of the work been omitted from the drawings and specifications, it shall be the responsibility of the Contractor to inform the Employer/Architects and to furnish and incorporate all such details with Employer’s/Architect’s concurrence, so that upon completion of the proposed work, the same will be acceptable and ready for use.

**1.1.2.PLUMBING WORKS:-**

**SANITARY FIXTURES & CP FITTINGS:**

The scope of work shall cover the supply, Installation, Testing & Commissioning of the Sanitary Fixtures & Fittings as mentioned in the Bill of Quantity for Pantry area

**DRAINAGE WORK:** The scope of work shall cover the supply, Installation, Testing & Commissioning of SWR PVC PIPE TYPE-B(6Kg/cm2.) for internal drainage work & vertical downtake with all fittings & supports. The scope also include supply & installation work of Nahni trap with gratings & PVC Cowl.

**WATER SUPPLY WORK:** The scope of work shall cover the supply, Installation, Testing & Commissioning of CPVC Pipes for internal Water supply work & supply & installation work of Gun Metal control valves.

**1.1.3.Electrical Work :**

The scope of work shall cover the supply, Installation, Testing & Commissioning of the electrical equipment like Panels, Cables, Switchgear, Lighting fixtures, Earthling, cable tray, Inverter, Fire Alarm, Public Addressable, EPABX, Rodent Repellent, Data Networking & Fans & Exhaust Fans. There already existing DB’s are installed on each floor of the service s blocks.

### 1.0 HVAC PANEL (IP65)

The scope of work for the HVAC Panel (IP65) shall cover the design, manufacture, check test, supply and Installation as described in this specification, as per drawings and schedule of quantities

Prior to fabrication of the Panels the supplier/contractor shall submit for consultant's approval the shop/vendor drawing consisting of G.A. drawing, sectional elevation, single line diagram, bill of material etc. and design calculations indicating type, size, short circuiting rating of all the electrical components used, bus bar size, internal wiring size, Panels dimension, color, mounting details etc.. The contractor shall submit manufacturer's catalogues of the electrical components installed in the Panels. Contractor has to submit the 3 sets of as built drawings & drawings shall be provided by the contractor after successfully completion & commissioning of entire electrical system.

### 2.0 LT XLPE CABLES

The scope of work shall cover supply, laying, testing and commissioning of medium voltage XLPE cables.

The specification provided in the technical specs gives the general requirement of cables. However, it is the responsibility of the vendor to take the joint measurement and obtain client's approval before the placement of orders to the main supplier / manufacturer.

Contractor shall submit the as built drawing of the cable laying drawing. Also,

The supplier shall submit following:

Data sheet indicating results of tests.

Test report

### 3.0 CABLE TRAYS

Perforated Cable Trays of ladder type and associated accessories tees, bends, elbows and reducers shall be fabricated from 12 gauge (2.5 mm) mild steel. Prefabricated Cable trays of perforated type and associated accessories tees, elbows and reducers shall be fabricated from 14 gauge (1.6 mm) White CRCA Sheets. Cable trays shall be made of corrosion resistant material or if made of material shall be adequately protected against the corrosion.

Cable trays accessories shall be painted with One coat of Red oxide zinc chromate primer and two side coats of Aluminium alkyd paint.

### 4.0 CABLE TRAY MOUNTING

Cable tray mounting arrangement type to be as marked on layout drawing

Assembly of tray mounting structures shall be supplied fabricated, erected & painted by the electrical contractor.

Tray mounting structures shall be welded to plate inserts or to structural beams as approved by the Project Manager.

Wherever embedded plates & structural beams are not available for welding the tray mounting structure electrical contractor to supply the MS plate & fix them to floor slab by four anchor fasteners of minimum 16 mm dia having minimum holding power of 5000 Kg, at no extra cost.

Maximum loading on a horizontal support arm to be 120 Kg/metre of cable run

Spacing between horizontal support arms of vertical tray runs to be 300 mm.

Cable in vertical race ways to be clamped by saddle type clamps to the horizontal slotted angles. Clamps to be fabricated from 3 mm. thick aluminium strip at site by the electrical contractor to suit cable groups.

The structural steel (standard quality) shall be according to latest revision of IS : 2062 & IS 808 Rev III of 1989 . Welding shall be as per latest revision of IS : 816 Rev I of 1969. All structural steel to be painted with one shop coat of red oxide and oil primer followed by a finishing coat of aluminium alkyd paint where any cuts or holes are made on finished steelwork these shall be sealed against oxidation by red oxide followed by the same finishing paint. Steel sheet covers wherever indicated to be similarly painted.

## 5.0 INTERNAL WIRING

The scope of work shall covers, definition of point wiring, system of wiring and supply, installation, connection, testing and commissioning of point wiring for light points, ceiling fan points, exhaust fan points, convenience socket outlet points, power socket outlet points, bell outlet points etc. including fixing of light fixtures, ceiling fan, exhaust fan, wall fan, bell etc.

## 6.0 ELV WIRING

The scope of work shall cover the supply, installation, connection, testing and commissioning of the wiring for Telephone / Computer / Fire detection / Music & Signage & wiring installation including supply of telephone cables, Multiple flexible wires, Shielded Wire, CAT-5 UTP computer signal wire, Junction boxes, Outlet boxes, and other related accessories required to complete the wiring and installation.

## 7.0 LIGHT FIXTURE

The scope of work shall cover the supply, installation and testing of various types of LED light fixtures are used in the project. The scope of work shall also cover the SITC of track lighting in the display room. Also,

As per of the proposal the bidder furnish relevant descriptive and illustrative literature on lighting fixtures and accessories and following drawings/ data for the respective lighting fixtures:-

- 1 Dimensional Drawings
- 2 Mounting details cable entry facilities and weights.
- 3 Light distribution diagrams (Zonal & Isokandora)
- 4 Light absorption and utilization factors.
- 5 Lamp output V/S temp. curves. \

## 8.0 EARTHING SYSTEM

The scope shall cover the Design, assembling, testing, painting, supply, delivery at site with all related accessories as per the specifications as specified in the technical specification sheet. Compliance with the provisions of this specification shall not relieve the Bidder of the responsibility of furnishing apparatus and accessories of proper design, electrically and mechanically suited to meet the operating requirements under the specified service conditions and be suitable for the purpose of which they are intended.

## 9.0 INVERTER SYSTEM

The scope of work for Inverter system shall cover the design, manufacture, fabrication, assembly, pre – shipment, testing at manufacturer's works, proper packing for transportation, delivery at site, unloading, storage, erection, interconnection of related equipment's, calibration, commissioning, testing and putting the Inverter system together with all accessories and auxiliaries as specified hereinafter in a fully operational condition acceptable to the Owner. The systems shall be furnished, erected and commissioned and all other services shall be performed by the vendor as covered under this specification and this work shall be fully in compliance with the requirements stated herein. Also scope of work shall cover the supply, Installation, testing & commissioning of tubular type battery to charge the inverter. The scope of work shall also cover the supply, installation, testing & commissioning of the Tubular type battery to charge the inverter. The scope of work shall also cover the supply, installation, testing & commissioning of the tubular type battery to charge the inverter.

## 10.0 FIRE ALARM SYSTEM

The scope of work shall cover the Supply, installation, testing & commissioning of Intelligent Analog Addressable Fire Alarm System in accordance with the specifications, drawings & schedule of quantities. Microprocessor based addressable and intelligent (analog), fire detection and alarm system complete with addressable, intelligent (analog) heat and smoke sensors, Addressable Manual call point and hooters. The distributed Intelligent Fire Alarm Control Panel (FACP) shall function as fully stand-alone panel. FACP shall have its own microprocessor, software and memory complying with BS5839 Part 4 (1995) and should bear CE mark.

The supplier shall submit following:

GA drawing.

Data sheet indicating results of tests.

Test reports.

O & M manuals.

## 11.0 PUBLIC ADDRESSABLE SYSTEM

The scope of work under this head shall include designing supplying and installing of Public Address System. The work under this system shall consist of furnishing all

materials, equipment's and appliances and labour necessary to install the said system, complete with Speakers, Amplifiers, Mike and Zone selection Panel.

The PA System is designed to serve the multipurpose of playing music, making general announcement or to transmit the fire tone under fire condition.

#### 12.0 EPABX (ELECTRONIC PRIVATE AUTOMATIC BRANCH EXCHANGE)

The scope of work shall cover the supply, installation, testing and commissioning of EPABX with relevant equipment and instruments. The work shall also include testing, connecting and commissioning of telephone wiring system installed by others.

This installation is intended to provide an adequate system which shall encompass the service requirements as described hereunder.

Work under this section shall incorporate the supply, installation, testing and setting to work of the following.

The E.P.A.B.X. complete with its Main Distribution Frame (M.D.F.).

Power supply.

Back up battery (8 hour duration) with Float cum booster type Battery charger or UPS.

Voltage stabilizer.

High end operator's console.

The telephone instruments, as required.

Connection, testing and commissioning of existing telephone wiring, tag boxes, telephone outlets etc.

Any additional work found necessary for completion of the system.

The rate shall also include necessary hardware, raceways, brackets, cable tray, supports, tag etc. required in the control room where EPABX is to be installed.

#### 13.0 RODENT REPELLENT SYSTEM

The scope of work shall cover the supply, installation, testing and commissioning of RODENT REPELLENT system with relevant equipment and instruments. The work is to be carried out as per technical specification, BOQ & Drawings.

#### 14.0 DATA & NETWORKING SYSTEM

The scope of the work shall cover the supply, installation, testing and commissioning of Data & Networking system with relevant equipment and instruments. The work is to be carried out as per the technical specification, BOQ & Drawings. The scope of work also covers the supply, installation, testing & commissioning of the optical fiber cable from source network rack to 4th floor network rack.

#### 15.0 WALL MOUNTED FANS & EXHAUST FANS

The scope of work shall cover the supply, Installation, testing & commissioning of the wall mounted fans & Exhaust fan of specified sweep and

speed, with all accessories and necessary materials, suitable to work on 230 V/ 415 V, AC Supply 50 Hz, erected in position. Also it should be installed as per the specification provided in the technical specs.

#### 16.0 CALL BELL SYSTEM

The scope of work shall cover the supply, Installation, testing & commissioning of the battery operated call bell system. The installation of the system is carried out as per technical specification & BOQ.

### **1.1.4. HVAC System**

#### **1.0 Description of the Project**

The Service block building is located in Mazagon Dock Shipbuilders Ltd, Mumbai. The Service block having 3rd to 6th Floor office floor to have the new centralized VRF air conditioning system to ensure flexibility of operation, installation and maintenance of the HVAC system using latest state of the art technology and also the energy efficient one.

#### **2.0 General Scope of Work**

The general character and the scope of work to be carried out under this contract is illustrated in Drawings, Specifications and Schedule of Quantities. The Contractor shall carry out and complete the said work under this contract in every respect in conformity with the contract documents and with the direction of and to the satisfaction of the Consultant / Architect/ Client.

The contractor shall furnish all labour, materials and equipment as listed under Schedule of Quantities and specified otherwise, transportation and incidental necessary for supply, installation, testing and commissioning of the complete air conditioning system as described in the Specifications and as shown on the drawings.

This also includes any material, equipment, appliances and incidental work not specifically mentioned herein or noted on the Drawings / Documents as being furnished or installed, but which are necessary and customary to be performed under this contract for completion of entire work.

The central Heating, Ventilation and Air- Conditioning (HVAC) system shall comprise of following:

- a. VRV System Outdoor & Indoor Units for Office area as per drawing.
- b. Treated Fresh Air Unit
- c. Refrigerant & condensate drain piping inclusive of all valves and fittings.
- d. Cable Tray work for External Refrigeration Piping work
- e. Control cabling between Indoor & Outdoor unit
- f. Fresh Air Piping work
- g. Sheet metal ducts inclusive of external insulation.
- h. Insulation of refrigeration pipes & Fresh Air Pipes.
- i. Air Flow Controller
- j. Automatic controls and instruments.

- k. Vibration isolators for all HVAC equipment.
- l. Balancing, testing and commissioning of the entire HVAC system of Office area.
- m. Test reports, list of recommended spares, AS BUILT drawings, operation and maintenance manual for the entire HVAC installation.
- n. Training of Customer's Staff.
- o. **Comprehensive all inclusive AMC for 3 years after completion of defect liability period.**

### **2.1 Submission of program**

Contractor is required to submit planned detailed execution methodology & schedule for review / approval by consultant / Client within 14 days of placement of order.

### **2.2 Dispatch of Materials to Site & their safe Custody**

At the time of execution, area shall be provided taking into consideration the space available at site, for storage of delivered material/equipment upon request of contractor.

Contractor has to make his own arrangement for storage, safety & security of the material delivered at site.

Program of dispatch of material shall be framed keeping in view the progress of the building renovation work. Safe custody of all machinery and equipment supplied by the contractor shall be the responsibility of the contractor.

### **2.3 Coordination with Other Agencies**

The contractor shall co-ordinate with all other agencies involved in the work so that the work of other agencies is not hampered due to his work. Ducting, piping, cabling or any other work, which directly affect the progress of building work, shall be given priority.

### **2.4 Quality of Materials & Workmanship**

- i) The components of the installation shall be of such design so as to satisfactorily function under all conditions of operation.
- ii) The entire work of manufacture/fabrication, assembly and installation shall conform to sound engineering practice. The entire installation shall be such as to cause minimum transmission of noise and vibration to the building structure.
- iii) All equipment's and materials to be used in work shall be manufactured in factories of good repute having excellent track record of quality manufacturing, performance and proper after sales service.

### **2.5 PROTECTION OF WORK & MATERIAL**

- i) Copper tubes stored on site shall be supported clear of the ground and kept separate from all other stored ferrous materials & shall be suitably protected against the weather.
- ii) All equipments and materials, fixed or unfixed shall be protected against ingress of dirt or moisture into working parts by means of Polythene covers or



- other equivalent measures.
- iii) Precautions against mechanical damage by other trades shall be provided.
  - iv) Precautions shall be taken and all necessary protection provided to safeguard the work during bad weather.
  - v) The inlet and discharges of all fan coils, and other terminal units shall be kept covered until all local Plastering, Purging, etc. is completed and the units are ready to run.
  - vi) Equipment and material damaged shall be replaced by contractor at the discretion of the Consultant/MDL engineer. Equipment and materials are subject to rejection and replacement, if in the opinion of the Consultant/MDL Engineer, or in the opinion of the manufacturer's engineering department, the equipment has deteriorated or been damaged to the extent that its immediate use is questionable, or that its normal life expectancy has been curtailed.

The contractor shall be solely responsible to protect all the delivered materials from the time of delivery at site till satisfactory completion & handing over of the completed works from any mode/type of damage/loss that may occur during this period.

## **2.6 Care of the Building**

Care shall be taken by the contractor during execution of the work to avoid damage to the building. He shall be responsible for repairing all such damages and restoring the same to the original finish at his cost. He shall also remove all unwanted and waste materials arising out of the installation from the site of work from time to time.

## **2.7 Inspection & Testing**

All the equipments / materials shall be supplied with relevant quality / conformance / factory inspection documents.

All the works under or in course of execution or executed in pursuance of the contract shall at all times be open to inspection & supervision of the MDL engineer / executives & the contractor at all times during the usual working hours offer assistance for the inspection of work.

The contractor shall raise inspection call to MDL in the agreed format for the works undertaken at below mentioned stages –

- a. After delivery of material at site before starting of installation works
- b. Testing & commissioning of the completed works

The contractor shall submit supporting documents such as delivery challan (s), packing lists, Factory Test reports for the HVAC items in requisite sets as relevant along with the invoice for the purpose of certification by MDL engineer.

## **2.8 Project Execution Team**

The Contractor shall ensure that senior planning and erection personnel from his organization are assigned exclusively for this project. The Contractor shall appoint one Project manager. He shall be assisted on full time basis by erection engineers & supervisors. The entire staff shall be posted at site on full time basis.

The Contractor shall arrange to have mechanized & modern facilities of transporting material to place of installation for speedy execution of work.

### **2.9 Performance Guarantee**

The contractor shall carry out the work in accordance with the Drawings, Specifications, Schedule of Quantities and other documents forming part of the Contract.

The contractor shall be fully responsible for the performance of the selected equipment (installed by him) at the specified parameters and for the efficiency of the installation to deliver the required result.

Complete set of drawings is appended with this tender and reference may be made to same for any details or information. The contractor shall also guarantee that the performance of various equipment individually, shall not be less than the quoted capacity; also, actual power consumption shall not exceed the quoted rating, during testing and commissioning, handing over and guarantee period.

### **2.10 Drawings**

The HVAC Drawings issued with tenders, are diagrammatic only and indicate arrangement of various systems and the extent of work covered in the contract.

These Drawings indicate the points of supply and of termination of services and broadly suggest the routes to be followed. Under no circumstances shall dimensions be scaled from these Drawings. Shop drawings to be prepared by the Contractor based on the HVAC system configuration offered by them.

The interiors drawings and details shall be examined for exact location of equipment, controls, grilles and diffusers. The contractor shall follow the tender drawings in preparation of his shop drawings, and for subsequent installation work. He shall check the drawings of other trades to verify spaces in which his work will be installed.

Maximum headroom and space conditions shall be maintained at all points. Where headroom appears inadequate, the contractor shall notify the Client – MDL/ Architect / Consultant before proceeding with the installation. In case installation is carried out without notifying, the work shall be rejected and contractor shall rectify the same at his own cost.

The contractor shall examine all interior, structural, plumbing, and electrical and other services drawings and check the existing works. Before starting the work, Contractor shall report to the Client / Architect / Consultant about any discrepancies and obtain clarification. Any changes found essential to coordinate installation of his work with other services and trades, shall be made with prior approval of the Client – MDL / Architect / consultant without additional cost to the Client – MDL.

### **2.11 Technical Data Sheet**

Contractor shall submit the technical data sheet for all items after award of Contract and before procurement of the items. Technical data sheet of indoor & outdoor units to have parameters mentioned but not limited to those listed at Annexure A.

### **2.12 Shop Drawings**

All the shop drawings shall be prepared on computer through AutoCAD System based on Drawings, site measurements and Interior Designer's Drawings.

**Contractor to design & select various refrigerant piping sizes based on HVAC system configuration offered by them & accordingly incorporate in the shop drawings.**

Within two week of the award of the contract, contractor shall furnish, for the approval of the Client – MDL / Architect / Consultant, three sets of detailed shop drawings in A1 color printout of all equipment and materials including detailed ducting drawings showing exact location of supports, flanges, bends, tee connections, reducers, guide vanes, silencers, distribution grids, air flow controller, volume control dampers, collars, grilles, diffusers; detailed piping drawings showing exact location and type of supports, valves, fittings etc. Acoustic lining and external insulation details for ducts, pipe insulation etc; electrical panels inside / outside views, power and control wiring schematics, cable trays, supports and terminations.

These shop drawings shall contain all information required to complete the Project as per specifications and as required by the Client – MDL/ Architect / consultant. These Drawings shall contain details of construction, size, arrangement, operating clearances, and capacity of all items of equipment, also the details of all related items of work by other contractors.

Each shop drawing shall contain tabulation of all measurable items of equipment / materials / works and progressive cumulative totals from other related drawings to arrive at a variation-in-quantity statement at the completion of all shop drawings. Minimum 4 sets of drawings 'A1' size color printout shall be submitted after final approval along with softcopy.

Each item of equipment / material proposed shall be a standard catalogue product of an established manufacturer strictly from the manufacturers given in list of makes and quoted by the tenderer in technical data part.

When the Client – MDL / Architect / Consultant makes any amendments in the above drawings, the contractor shall supply three fresh sets of drawings with the amendments duly incorporated along with check prints, for approval.

No material or equipment may be delivered or installed at the job site until the contractor has in his possession, the approved shop drawing for the material / equipment / installation.

No claims for extension of time shall be entertained because of any delay in the work due to his failure to produce shop drawings at the right time, in accordance with the approved program.

Manufacturers drawings, catalogues, pamphlets and other documents submitted for approval shall be in four sets. Each item in each set shall be properly labeled, indicating the specific services for which material or equipment is to be used, giving reference to the governing section and clause number and clearly identifying in ink the items and the operating characteristics. Data of general nature shall not be accepted.

Also, wherever directed a mockup or sample installation shall be carried out for approval before proceeding for further installation.

Approval of shop drawings shall not be considered as a guarantee of measurements or of building dimensions. Where drawings are approved, said approval does not mean that the drawings supersede the contract requirements, nor does it in any way relieve the contractor of the responsibility or requirement to furnish material and perform work as required by the contract.

Where the contractor proposes to use an item of equipment, other than that specified or detailed on the drawings, which requires any redesign of the structure, partitions, foundation, piping, wiring or any other part of the mechanical, electrical layouts; all such re-design, and all new drawings and detailing required therefore, shall be prepared by the contractor at his own expense and gotten approved by the Client – MDL / Architect / Consultant. Any delay on such account shall be at the cost of and consequence of the Contractor.

Where the work of the contractor has to be installed in close proximity to, or will interfere with work of other trades, he shall assist in working out space conditions to make a satisfactory adjustment. If so directed by the Client – MDL/Architect/Consultant, the contractor shall prepare composite working drawings and sections at a suitable scale, not less than 1:100, clearly showing how his work is to be installed in relation to the work of other trades.

Within two weeks of approval of all the relevant shop drawings, the contractor shall submit four copies of a comprehensive anticipated variation in quantity statement to Consultant/MDL.

### **2.13 Quiet Operation and Vibration Isolation**

All equipment shall operate under all conditions of load without any sound or vibration which is objectionable in the opinion of the Client – MDL / Architect / Consultant. In case of rotating machinery sound or vibration noticeable outside the room in which it is installed, or annoyingly noticeable inside its own room, shall be considered objectionable. Such conditions shall be corrected by the Contractor at his own expense. The contractor shall guarantee that the equipment installed shall maintain the specified NC levels. Further, any noise & vibration above specified industrial Standards / values shall not be accepted.

### **2.14 Accessibility**

The Contractor shall verify the sufficiency of the size of the shaft openings, clearances in cavity walls and suspended ceilings for proper installation of his ducting and piping.

His failure to communicate insufficiency of any of the above shall constitute his acceptance of sufficiency of the same.

The Contractor shall locate all equipment which must be serviced, operated or maintained in fully accessible positions. The exact location and size of all access panels, required for each concealed control damper, valve or other devices requiring attendance, shall be finalized and communicated in sufficient time, to be provided in the normal course of work.

Failing this, the Contractor shall make all the necessary repairs and changes at his own expense. Access panel shall be standardized for each piece of equipment / device / accessory and shall be clearly marked.

### **2.15 Materials and Equipment**

All materials and equipment shall conform to the relevant Indian / International Standards and shall be of the approved make and design. Makes shall be strictly in conformity with list of preferred makes/manufacturers as per BOQ & attached list.

### **2.16 Electrical Installation**

The electrical work related to air conditioning services, shall be carried out in full knowledge of, and with the complete coordination of the contractor. The electrical installation shall be in total conformity with the control wiring drawings prepared by the contractor and approved by the Consultant/Client – MDL.

All air conditioning equipment shall be connected and tested in the presence of an authorized representative of the Contractor, Consultant & MDL.

The system shall be commissioned only after the contractor has certified in writing that the electrical installation work for air cooling services has been thoroughly checked, tested and found to be totally satisfactory and in full conformity with the contract. Drawings, Specifications and manufacturer's instructions. It is to be clearly understood that the final responsibility for the sufficiency, adequacy and conformity to the contract requirements, of the electrical installation work for air conditioning services, lies solely with the contractor.

### **2.17 Completion Certificate:**

On completion of the Electrical installation for air conditioning, a certificate shall be furnished by the contractor, counter signed by the licensed supervisor, under whose direct supervision the installation was carried out.

### **2.18 Testing & Commissioning**

The performance, testing & commissioning of the complete HVAC system is required to be carried out by the HVAC Contractor to comply with the various parameters specified in the tender documents. Contractor shall submit Testing & Commissioning methodology for complete HVAC system for review & approval of Client / Consultant. Testing & commissioning of HVAC system shall be done strictly in accordance with approved methodology.

Contractor shall also provide four copies of record of all safety and automatic control settings for the entire installation. The installation shall be tested again after

removal of defects and shall be commissioned only after approval by the Client – MDL/ Architect / Consultant.

All tests shall be carried out for satisfactory performance in the presence of the representatives of the Client – MDL / Architect / Consultant.

All instruments, services needed for the tests shall be furnished by the Contractor themselves. All testing instruments shall be calibrated and the Contractor shall produce calibration certificates in support.

Contractor shall raise call for inspection sufficiently in advance for witness by Consultant /MDL via officially acceptable means such as e-mail & letters.

**2.19 GENERAL FEATURES:** - Following features shall be provided for all VRV/VRF systems.

ON / OFF	ON / OFF control for each individual indoor unit.
Mode Selection	Simulated COOL/FAN operation.
Temperature setting range	Temperature selection from minimum -18 Deg to 30 Deg.C in cooling mode.
Fan Speed Setting	HIGH-MEDIUM-LOW.
Timer	Multiple daily time ON/OFF settings where temperature, fan speeds can be selected.
Remote Controller	Indoor units with remote controller.
Group Setting	Multiple indoor units shall be group set with the same settings by inputting the information on one of the units in the group.
Fault Status	If a fault occurs, the screen shall display the fault details within 3 minutes and a fault log shall be created. Facility to print the log automatically shall be provided.
System Status	Actual operating conditions for each indoor and outdoor unit shall be monitored on the system display graphics.
Search	Where many indoor units are controlled by NETWORK, a search function shall be available to find specific unit locations.
Language	ENGLISH
Help Files	Help files shall be provided in ENGLISH language.
Error Log	All faults reports shall be stored with date and time information providing a historical record.
Unit Registration	Information concerning the unit models, serial numbers shall be printed / marked on each unit for better after sales
Energy Consumption	Allows the demand of individual units to be calculated as a percentage of total system energy consumption over selected time periods.
Filter Maintenance	An indication shall appear, at selected time intervals, when it is necessary to inspect the filter.

## **2.20 As Built Drawings**

Contractor shall submit as built drawings as and when work in all respects is completed in a particular area. These drawings shall be submitted in the form of two sets of CD's and four set of Hard copy – 'A1' Size color printout.

These drawings shall clearly indicate complete HVAC system Equipment layouts, ducting and piping layouts, location of wiring and sequencing of automatic controls, location of all concealed piping, valves, controls, dampers, wiring and other services.

## **2.21 Operating Instruction & Maintenance Manual**

Upon completion and commissioning of system the contractor shall submit a draft copy of comprehensive operating instructions, maintenance schedule and log sheets for all systems and equipment included in this contract.

This shall be supplementary to manufacturer's operating and maintenance manuals. Upon approval of the draft, the contractor shall submit four (4) complete bound sets of type written operating instructions and maintenance manuals; one each for retention by Consultant and Client – MDL / Architect / Consultant and two for Client – MDL's Operating Personnel.

These manuals shall also include basis of design, detailed technical data for each piece of equipment as installed, spare parts manual and recommended spares for period of maintenance of each equipment.

## **2.22 On Site Training**

Upon completion of all work and all tests, the Contractor shall depute necessary operators, labor and helpers for operating the entire HVAC installation for a period of ten (10) working days, to enable the Client's personnel to get acquainted with the operation of the system. During this period, the contractor shall train the Client's nominated personnel in the operation, adjustment and maintenance of all equipment installed.

## **2.23 Servicing of HVAC System during Defect Liability Period**

Contractor to arrange **free of cost quarterly servicing** of the entire HVAC system installed during Defect liability period to keep the system in good and trouble free operating conditions. The servicing agency appointed should be OEM or authorized agency of OEM. It is preferred to appoint the AMC Contractor as a servicing agency/Contractor.

### **1.1.5. FIRE FIGHTING SYSTEM**

The scope of work shall cover the Supply, Installation, Testing & Commissioning of the Heavy class GI pipe for Fire sprinkler system with fittings, Pendent type Sprinkler, flexible braided pipes & Fire Extinguisher.

- 1.1 Work under this section shall consist of furnishing all labour, materials, fabrication, equipment and appliances necessary and required to completely install Fire sprinkler system as required by the drawings and specified here in after or given in the Bill of Quantities.
- 1.2 Without restricting to the generality of the foregoing, the fire protection work shall include the following:-
  - a) GI Class 'C' Sprinkler pipes with fittings
  - b) Fire Sprinklers with accessories.
  - c) Fire extinguishers

- d) Mounting hardwares, companion flanges, Nuts & bolts, Gaskets, etc.
- e) Supports, clamps, anchoring with wall / ceiling / slab

#### **1.1.6. FURNITURE WORK:**

The work consists of Civil & Interior works including, masonry, plastering, painting, flooring & cladding, Partitions & panelling, doors & windows, waterproofing, modular/customized furniture, False ceiling, General items, Plumbing, HVAC, Electrical work, etc. are within the scope of this tender in accordance with the “drawings” and “Bill of Quantities”. It includes providing, fixing, furnishing all materials, labour-, tools and equipment and management of necessary and incidental to the construction and completion of the work. All work, during its progress and upon completion, shall conform to the lines, elevations and grades as shown on the drawings furnished by the Architects. Should any detail essential for efficient completion of the work been omitted from the drawings and specifications, it shall be the responsibility of the Contractor to inform the Employer/Architects and to furnish and incorporate all such details with Employer’s/Architect’s concurrence, so that upon completion of the proposed work, the same will be acceptable and ready for use.

**The detailed scope of work has been indicated in the Bill of Quantities (BOQ) Price Bid Part-II at Enclosure-1.**

#### **2. LIST OF TENDER DRAWINGS**

<b>SR. No.</b>	<b>DRG. REF.</b>	<b>DESCRIPTION</b>
<b>A</b>	<b>CIVIL &amp; INTERIOR WORKS</b>	
1	MDL-TD-3101	GENERAL ARRANGEMENT PLAN
2	MDL-TD-3102	LINING OUT & PARTITION TYPE PLAN
3	MDL-TD-3103	FLOORING PLAN
4	MDL-TD-3103A	FLOORING AND WALL FINISHES PLAN
5	MDL-TD-3104	REFLECTED CEILING PLAN
6	MDL-TD-3106	GENERAL ELEVATIONS SHEET 01 OF 02
7	MDL-TD-3106	GENERAL ELEVATIONS SHEET 02 OF 02
8	MDL-TD-4101	GENERAL ARRANGEMENT PLAN
9	MDL-TD-4102	LINING OUT & PARTITION TYPE PLAN
10	MDL-TD-4103	FLOORING PLAN
11	MDL-TD-4103A	FLOORING AND WALL FINISHES PLAN
12	MDL-TD-4106	GENERAL ELEVATIONS SHEET 01 OF 02
13	MDL-TD-4106	GENERAL ELEVATIONS SHEET 02 OF 02
14	MDL-TD-4104	REFLECTED CEILING PLAN



15	MDL-TD-5101	GENERAL ARRANGEMENT PLAN
16	MDL-TD-5102	LINING OUT & PARTITION TYPE PLAN
17	MDL-TD-5103	FLOORING PLAN
18	MDL-TD-5103A	FLOORING AND WALL FINISHES PLAN
19	MDL-TD-5104	REFLECTED CEILING PLAN
20	MDL-TD-5106	GENERAL ELEVATIONS SHEET 01 OF 02
21	MDL-TD-5106	GENERAL ELEVATIONS SHEET 02 OF 02
22	MDL-TD-6101	GENERAL ARRANGEMENT PLAN
23	MDL-TD-6102	LINING OUT & PARTITION TYPE PLAN
24	MDL-TD-6103	FLOORING PLAN
25	MDL-TD-6103A	FLOORING AND WALL FINISHES PLAN
26	MDL-TD-6104	REFLECTED CEILING PLAN
27	MDL-TD-6106	GENERAL ELEVATIONS SHEET 01 OF 02
28	MDL-TD-6106	GENERAL ELEVATIONS SHEET 02 OF 02
29	MDL-TD-3304	PARTITION DETAIL SHEET 01 OF 03
30	MDL-TD-3304	PARTITION DETAIL SHEET 02 OF 03
31	MDL-TD-3304	PARTITION DETAIL SHEET 03 OF 03
32	MDL-TD-3308	TABLE DETAIL SHEET 01 OF 7
33	MDL-TD-3308	TABLE DETAIL SHEET 02 OF 7
34	MDL-TD-3308	TABLE DETAIL SHEET 03 OF 7
35	MDL-TD-3308	TABLE DETAIL SHEET 04 OF 7
36	MDL-TD-3308	TABLE DETAIL SHEET 05 OF 7
37	MDL-TD-4308	TABLE DETAIL SHEET 06 OF 7
38	MDL-TD-3308	TABLE DETAIL SHEET 07 OF 7
<b>B</b>	<b>ELECTRICAL WORKS</b>	
39	INI-MD-SER-BLO-3F-EL-AC-PWR-01	SERVICE BLOCK 3RD FLOOR PLAN A/C POWER LAYOUT
40	INI-MD-SER-BLO-TYP-EL-AC-PWR-01	SERVICE BLOCK TYP. 4th & 5th FLOOR PLAN A/C POWER LAYOUT
41	INI-MD-SER-BLO-6F-EL-AC-PWR-01	SERVICE BLOCK 6th FLOOR PLAN A/C POWER LAYOUT
42	INI-MD-SER-BLO-3F-EL-CT-01	SERVICE BLOCK 3RD FLOOR PLAN CABLE TRAY LAYOUT
43	INI-MD-SER-BLO-TYP-EL-CT-01	SERVICE BLOCK 4th FLOOR PLAN CABLE TRAY LAYOUT
44	INI-MD-SER-BLO-TYP-EL-CT-01	SERVICE BLOCK 5th FLOOR PLAN CABLE TRAY LAYOUT
45	INI-MD-SER-BLO-6F-EL-CT-01	SERVICE BLOCK 6th FLOOR PLAN CABLE TRAY LAYOUT
46	INI-MD-SER-BLO-EL-HVAC-SLD-01	SERVICE BLOCK HVAC PANEL SINGLE LINE DIAGRAM
47	INI-MD-SER-BLO-EL-HVAC-PNL-01	SERVICE BLOCK HVAC PANEL

		LAYOUT
48	INI-MD-SER-BLO-3F-EL-LTG-01	SERVICE BLOCK 3RD FLOOR PLAN LIGHTING LAYOUT
49	INI-MD-SER-BLO-TYP-EL-LTG-01	SERVICE BLOCK TYP. 4th & 5th FLOOR PLAN LIGHTING LAYOUT
50	INI-MD-SER-BLO-6F-EL-LTG-01	SERVICE BLOCK 6th FLOOR PLAN LIGHTING LAYOUT
51	INI-MD-SER-BLO-EL-LTP-SLD-01	SERVICE BLOCK AREA MAIN LT PANEL SINGLE LINE DIAGRAM
52	INI-MD-SER-BLO-EL-MAIN-SLD-01SHEET - 1 OF 2	SERVICE BLOCK AREA MAIN SINGLE LINE DIAGRAM SHEET - 1
53	INI-MD-SER-BLO-EL-MAIN-SLD-01SHEET - 2 OF 2	SERVICE BLOCK AREA MAIN SINGLE LINE DIAGRAM SHEET - 2
54	INI-MD-SER-BLO-3F-EL-PWR-01	SERVICE BLOCK 3RD FLOOR PLAN SMALL POWER LAYOUT
55	INI-MD-SER-BLO-TYP-EL-PWR-01	SERVICE BLOCK TYP. 4th & 5th FLOOR PLAN SMALL POWER LAYOUT
56	INI-MD-SER-BLO-6F-EL-PWR-01	SERVICE BLOCK 6th FLOOR PLAN SMALL POWER LAYOUT
57	INI-MD-SER-BLO-6F-ELV-FAS-01	SERVICE BLOCK AT 6TH FLOOR FIRE ALARM SYSTEM LAYOUT
58	INI-MD-SER-BLO-6F-ELV-PAS-01	SERVICE BLOCK AT 6TH FLOOR PUBLIC ADDRESS SYSTEM LAYOUT
59	INI-MD-SER-BLO-6F-ELV-ROD-01	SERVICE BLOCK AT 6TH FLOOR RODENT LAYOUT
60	INI-MD-SER-BLO-3F-ELV-FAS-01	SERVICE BLOCK AT 3RD FLOOR FIRE ALARM SYSTEM LAYOUT
61	INI-MD-SER-BLO-3F-ELV-PAS-01	SERVICE BLOCK AT 3RD FLOOR PUBLIC ADDRESS SYSTEM LAYOUT
62	INI-MD-SER-BLO-3F-ELV-ROD-01	SERVICE BLOCK AT 3RD FLOOR RODENT LAYOUT
63	INI-MD-SER-BLO-TYP-ELV-FAS-01	SERVICE BLOCK AT 4th & 5th FLOOR FIRE ALARM SYSTEM LAYOUT
64	INI-MD-SER-BLO-TYP-ELV-PAS-01	SERVICE BLOCK AT 4th & 5th FLOOR PUBLIC ADDRESS SYSTEM LAYOUT
65	INI-MD-SER-BLO-TYP-ELV-ROD-01	SERVICE BLOCK AT 4th & 5th FLOOR RODENT LAYOUT
<b>C</b>	<b>PLUMBING WORKS</b>	
66	INI-MD-SER-BLO-3RD-PL-01	SERVICE BLOCK AT 3RD FLOOR PLUMBING LAYOUT
67	INI-MD-SER-BLO-TYP-PL-01	SERVICE BLOCK AT 4TH & 5TH TYPICAL FLOOR FIRE FIGHTING LAYOUT
68	INI-MD-SER-BLO-6TH-PL-01	SERVICE BLOCK AT 6TH FLOOR PLUMBING LAYOUT
<b>D</b>	<b>FIRE FIGHTING WORKS</b>	
69	INI-MD-SER-BLO-3RD-FF-01	SERVICE BLOCK AT 3RD FLOOR

		FIRE FIGHTING LAYOUT
70	INI-MD-SER-BLO-TYP-FF-01	SERVICE BLOCK AT 4TH & 5TH TYPICAL FLOOR FIRE FIGHTING LAYOUT
71	INI-MD-SER-BLO-6TH-FF-01	SERVICE BLOCK AT 6TH FLOOR FIRE FIGHTING LAYOUT
<b>E</b>	<b>HVAC WORKS</b>	
72	M-101	HVAC DRAWING FOR 3rd FLOOR LEVEL
73	M-102	HVAC DRAWING FOR 4th & 5th FLOOR LEVEL
74	M-103	HVAC DRAWING FOR 6th FLOOR LEVEL
75	M-104	HVAC DRAWING FOR TERRACE LEVEL

**Enclosure-1**

**PRICE BID (PART-II)**  
**BILL OF QUANTITIES**  
**(To be submitted online)**

**Sub: Renovation of 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, & 6<sup>th</sup> Floor of Service Block-including Civil, Plumbing, Furniture, Electrical, HVAC & Fire Fighting work at MDL, Mumbai.**

**Ref: MDL Tender No. 1800000038**

**INSTRUCTION TO THE BIDDER:**

1. Bidder shall **NOT INCLUDE** The Work Contract Tax (WCT) under VAT and Service Tax in the rates for this section. Bidder is required to quote Work Contract Tax (WCT) under VAT and Service Tax including Swachh Bharat Cess and Kisan Kalyan Cess **SEPERATELY** in Percentage which will be added to the rate quoted for this section.
2. Bidder to note Clause No. 2 (Defect Liability Period), Clause No 3 (Performance bank Guarantee), Clause No 5 (Safety and Training), Clause No 6 (Terms of Payment), Clause No 7 (Prices and Taxes), Clause No 15 (Insurance), Clause No 16 (Water proofing Bank Guarantee), Clause No 11.10 (Availability of sand/ other construction material) of Volume II before quoting.
3. MDL reserves the right to increase the quantity of any item in the BOQ to any extent provided the increase in the total Estimated Amount due to this change in the quantity over BOQ quantity multiplied by specified rate for all the items put together do not exceed 25% of the Accepted Contract Value. Bidder to note Clause No 13.1 of Volume II before quoting.
4. Bidder should also note Clause No 27 (Integrity Pact Bank Guarantee) in Volume I before quoting.

<b>SR.NO</b>	<b>ITEM DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>RATE</b>	<b>AMOUNT</b>
<b>I</b>	<b>CIVIL &amp; INTERIOR WORKS</b>				
<b>A</b>	<b>DISMANTLING WORKS</b>				
1	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead. --For thickness of tiles 10 mm to 25 mm	m2	222.00		
2	Dismantling aluminium/ Gypsum partitions, doors, windows, fixed glazing and false ceiling including disposal of unserviceable surplus material and stacking of serviceable material with in MDL Premises as directed by Engineer-in-charge.	m2	40.00		
3	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.	m3	4.00		
4	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead	m2	100.00		
5	Removing carefully existing door or windows with stone frame and shutters and making good etc to the existing surface including stacking within MDL premises etc. complete as directed.	nos	8.00		
6	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge	m3	4.00		

7	Cutting holes up to 15x15 cm in R.C.C. floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including finishing complete so as to make it leak proof.	nos	20.00		
8	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, for all leads including all lifts involved.	m3	20.00		
<b>B</b>	<b>CONCRETE AND STRUCTURAL STEEL WORKS</b>				
9	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor, etc., up to floor five level, excluding the cost of centering, shuttering and finishing : --1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	m3	4.00		
10	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	100.00		
11	Providing and fixing stainless steel ( Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, ( for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	kg	100.00		
<b>C</b>	<b>MASONRY AND PLASTERING WORKS</b>				
12	Providing and carrying out Pest-Control for termites, pests, white ants with final application of the chemical after completion of carpentry work. As per IS Code 6313 Part II or revisions thereof. including drilling holes at skirting level to allow the chemical to seep into walls, mixing chemical with the flooring mortar, contractor to give a certificate of Pest Treatment at the end of the job. (Measurement as per carpet area)	m2	1168.00		
13	Providing and fixing <b>Siporex concrete block</b> masonry 150 mm thick with 1:4 cement sand mortar including curing etc. complete as directed.	m2	20.00		
14	Providing and laying Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in: Cement mortar 1:4 (1 cement : 4 coarse sand)	m3	3.00		
15	Extra for brick work / AAC block masonry / Tile brick masonry in superstructure above floor V level, for each	m3	1.00		

	four floors or part thereof by mechanical means.				
16	Providing and laying 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. Cement mortar 1:3 (1 cement :3 coarse sand)	m2	15.00		
17	Extra for half brick masonry in superstructure, above floor V level for every four floors or part thereof by mechanical means.	m2	5.00		
18	Providing and applying 12 mm cement plaster of mix : 1:4 (1 cement: 4 fine sand) in line, level and plumb with river sand including rough marking to take in POP punning or any cladding, prewetting of walls, curing, Scaffolding etc complete.	m2	40.00		
19	Providing and applying 6 mm cement plaster of mix : 1:3 (1 cement : 3 fine sand) faced finished for R.C.C slabs & beams complete in all respects including scaffolding, curing and as directed by Engineer-in-charge.	m2	100.00		
20	Providing and fixing chicken mesh (Ref IS 3150) of 19 size of aperture at the junction of RCC members and brickwork of approved quality including fixing mesh in position by necessary nailing in concrete or BB masonry and or tying by binding wire	m2	8.00		
21	Providing and applying upto 10 mm thick plaster of Paris (gypsum anhydrous) ceiling up to a height of 5m above floor level, over first class kail wood strips 25x6 mm with 10 mm gap in between and reinforced with rabbit wire mesh fixed to wooden frame including scrapping the existing neeru etc. complete. --Flat surfaces	m2	552.00		
<b>D</b>	<b>WATERPROOFING WORKS</b>				
22	Providing & laying <b>water proof bedding to the pantry flooring</b> 25mm thick in C.M.(1:3) using 1 kg of waterproofing compound of approved make and manufacturer per bag of cement including leveling, curing etc. complete as directed.	m2	8.00		
23	Providing and laying <b>water proofing treatment in sunken portion of WCs</b> , bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm. This layer shall be allowed to air cure for 4 hours. b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer shall be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	m2	8.00		
24	Providing & laying <b>water proofing treatment to the pantry flooring</b> by giving injections with cement solution with waterproofing compound into the floor slab so as to make it consistent, homogenous and impervious against leakage, seepage etc. The sunk portion shall then be covered with necessary brick bat waterproof coba in C.M.(1:5) of 100mm average thickness in required slope mixed with approved waterproofing compound as per manufacturer's	m2	8.00		

	specifications finished rough with jointless waterproof cement plaster in C.M.(1:3) 12mm to 15mm thk in all positions extending the water proofing upto 300 mm height, curing, leakage test after impounding the water for 7 days, etc. complete with 5 years guarantee etc.(Measurement in plan area ).				
25	Extra for providing additional thickness of brick bats over average thickness of 100mm in 1:5 cement mortar mixed with waterproofing compound of approved make as per manufacturers specification as directed.	m3	4.00		
<b>E</b>	<b>FLOORING &amp; CLADDING WORK</b>				
26	Providing and laying machine cut, mirror polished, Italian Marble stone flooring, staircase tread & risers, skirting with groove laid in required pattern in linear portion of the building all complete as per architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 white cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm including pointing with white cement slurry admixed with pigment to match the marble shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge. a. 18 mm thick Italian Marble stone slab,Perlato, Rosso verona, Fire Red or Dark Emperadore etc.( <b>Basic rate of Italian marble of Rs. 6500/-Sq.mt.)</b> )	m2	226.00		
27	Providing and fixing machine cut, mirror / eggshell polished Marble stone work for wall lining (veneer work) including dado, skirting, risers of steps etc., in required design and pattern wherever required, stones of different finished surface texture, on 12 mm (average) thick cement mortar 1:3 (1 white cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/sqm including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Engineer-in-Charge. --18 mm thick Italian Marble stone slab,Perlato, Rosso verona, Fire Red or Dark Emperadore etc. ( <b>Basic rate of Italian marble of Rs. 6500/-Sq.mt.)</b> )	m2	20.00		
28	Providing and Fixing Granite of 18mm thick gang saw cut mirror polished premoulded and prepolished machine cut for kitchen platforms, vanity counters, window sills, facias, staircase tread & risers and similar location of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand ) with joints treated with white cement, mixed with matching pigments, epoxy touch ups, including rubbing, curing, moulding and polished to edge to give high gloss finish etc. complete at all levels as directed by Engineer-In-Charge -Granite of any colour and shade --Area of slab over 0.5 Sqm. ( <b>Basic rate of Granite of Rs. 2000/-Sq.mt)</b> )	m2	8.00		
29	Providing and laying vitrified floor tiles,cladding,skirting in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS : 15622, of	m2	188.00		

	approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), cladding fixed with approved adhesive, including grouting the joints with white cement and matching pigments etc., complete. <b>(Basic Rate of Vitrified tile of Rs. 1200/-Sq.mt.)</b> --Size of Tile 600x600 mm				
30	Providing and laying Kota stone slab flooring over average mm thick base laid over of C.M 1:4 (1 cement : 4 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing etc. complete as directed. --25 mm Thk.	m2	20.00		
31	Providing and fixing Composite Marble/ Agglomerate for floor, cill, jambs, skirting toilet partition set in 20mm thick cement mortar 1:4 bedding/back coat plaster ,white cement paste floating, joints finished neatly with matching coloured cement, curing, hand polishing, cleaning etc. complete, as directed. <b>(Basic cost of composite marble/ Agglomerate Rs. 2250/-per sq.mt.)</b>	m2	8.00		
32	Providing and erecting 600mm deep Pantry counter in shape and design as directed. With approved 20mm thk granite top of approved shade, including 18MM cement mortar and LOCAL marble base, with LOCAL marble verticals and shelves as indicated, making cut-outs for sink, plumbing fixtures, gas cylinder pipes, etc, cost to include for all granite vertical patties, facias, splash - back patties, granite skirting etc. Polishing including edge polishing, washing, cleaning, and finishing the wall surface below the counter with 200mm x 200mm ceramic white colour tile including necessary cement mortar backing complete details as directed. running length of counters to be measured along their centre lines and paid for. <b>(Basic cost of granite Rs. 2000/- Sq.mt.)</b>	rmt	14.00		
<b>F</b>	<b>CARPENTRY WORK</b>				
33	<b>Plywood panelling:</b> <b>Main Frame:</b> Out of 50mm x 50 x 1.5mm thick Aluminium Sections at approx. 450mm centre to centre vertically and horizontally. All verticals secured to ceiling with anchor fasteners. glasswool infill of 24kg/m3 density to be provided. Well notched frames including making cutout for electrical conduits, support for access control lock complete as per detailed drawings. (Measurement upto slab level)	m2	703.00		
34	<b>Plywood panelling:</b> <b>Main Frame:</b> Out of 50mm x 50 x 1.5mm thick Aluminium Sections at approx. 450mm centre to centre vertically and horizontally. All verticals secured to ceiling with anchor fasteners.Well notched frames including making cutout for electrical conduits, support for access control lock complete as per detailed drawings. (Measurement upto slab level)	m2	359.00		
35	<b>Plywood panelling:</b> <b>Skin :</b> 19mm Marine Plywood on one side screwed to frame work with joints as shown or directed including Trims on all edges. <b>(Basic Rate of plywood 1345/-Sq.mt)</b>	m2	20.00		



36	<b>Plywood panelling:</b> <b>Skin</b> : 12mm Marine Plywood on one side screwed to frame work with joints as shown or directed including Trims on all edges. <b>(Basic Rate of plywood 1090/- Sq.mt)</b>	m2	1776.00		
37	<b>Plywood panelling:</b> <b>Skin</b> : 9mm Marine Plywood on one side screwed to frame work with joints as shown or directed including Trims on all edges. <b>(Basic Rate of plywood 850/- Sq.mt)</b>	m2	73.00		
38	<b>Plywood panelling:</b> <b>Skin</b> : 6mm Marine Plywood on one side screwed to frame work with joints as shown or directed including Trims on all edges. <b>(Basic Rate of plywood 700/- Sq.mt)</b>	m2	20.00		
39	<b>Finishing:</b> <b>VENEER</b> : 4mm thk approved veneer finished with imported PU coating on one side with matching superior grade fixed to the plywood having joints/grooves as shown or directed. With melamine polish. (Basic rate of veneer Rs.2000/-SQ.M.)( <b>Basic rate of PU Coating of Rs 100/- SFT</b> )	m2	100.00		
40	<b>Finishing:</b> <b>LAMINATE</b> : Not less than 1.5mm thk laminate on one side fixed to plywood skin with glue having joints and grooves as shown or directed. <b>(Basic rate of laminate of Rs. 647/- Sqmt)</b>	m2	267.00		
41	<b>Finishing:</b> <b>GYPSUM</b> : 12.5mm thk Gypsum on one side fixed to plywood skin with glue having joints and grooves as shown or directed. <b>(Basic Rate of Gypsum Board Rs. 600/- Sqmt)</b>	m2	1300.00		
42	<b>Finishing:</b> <b>BACKPAINTED GLASS</b> : 6 thk Laminated Backpainted, extra clear Glass of Saint gobain or equivalent make etc. complete as per approved design as directed. <b>(Basic Rate of Glass Rs. 2500/- Sqmt)</b>	m2	73.00		
43	<b>Finishing:</b> <b>SOFT BOARD</b> : 12mm thk Soft board finished with approved fabric including soft board as per selection by Client. ( <b>Basic rate of fabric including soft board is Rs.500/- per meter</b> ). Softboards to be edged with laminate strips to give firm edges. Fabric with creases shall have to be redone. etc complete.	m2	20.00		
44	<b>Finishing:</b> <b>MOISTURE RESISTANT GYPSUM</b> : 12.5mm thk Gypsum on one side fixed to plywood skin with glue having joints and grooves as shown or directed. <b>(Basic rate of Gypsum Rs. 750/- Sqmt)</b>	m2	156.00		
45	<b>Finishing:</b> <b>TOUGHENED GLASS</b> - 6+6mm thick Laminated Toughened glass with 1.5mm PVB layer, fixed on SS finished D Bracket etc. complete as directed.	m2	26.00		
46	<b>Glazed Partitions:</b> Providing and fixing fully glazed partition for External/Internal, using 12mm thick toughened glass, fixed with aluminium 'U' channel in the floor and partition, as per detailed drawings, etc complete in all respects.	m2	59.00		
47	Providing and fixing Fully Glazed Door Shutters with 12mm thick toughened glass fixed on patch fittings of	m2	41.00		

	PT standard patch fitting set includes top pivot, bottom patch PT 10, top patch PT 20, corner lock US 10 lock with EPC 60mm of approved make and as per design and details given by the architect/ including accessories, pvc edging, floor spring-DORMA floor spring BTS 75 V ,SS handle-DORMA 316 SS TGDID 300X22S Satin,lock-EM3000AH etc. complete as directed.(Type DR01, DR02)				
48	Providing and Fixing in position teak wood of approved quality and size Door frames, Rafters, Panelling or any other decorative work including all hardware and finished in veneer with PU coating/fire retardant paint complete as directed.(Basic Rate of Veneer of Rs. 2000/-Sq.mt.) <b>(Basic Rate of PU Coating 120/-Sft)</b>	m3	1.20		
49	VENEER AND LAMINATE DOOR- Providing and fixing 75 mm thk solid shutter as per given detail with 40X40X1.5mm thick aluminium box section with 12mm thick marine plywood on both side, with triple rebate with acoustical lining, 40mm x 75mm tw beading, finished in venner of approved make and shade with malemine polish and other side with 1.5mm thk laminate of approved shade and make with necessary hardware such as ss 300mm long handle-DORMA 316 SS TGDID 300X22 S Satin, Concealed door closure DORMA ITS 96EN 3-6, automatic door drop down seal, DORMA 4012 wall stopper,Concealed hinges, locking arrangement of approved make etc. complete. ( Type DR 04) (Basic rate of Veneer of Rs. 2000/-Sq.mt.) <b>(Basic Rate of Laminate of Rs. 647/- Sq.mt.)</b>	m2	24.00		
50	D3-FLUSH DOOR WITH VISION PANEL-50 mm solid core marine shutter, with 25X40X1.5mm thick aluminium box section with 12mm thick marine plywood on both side with 50mm x12 mm tw beading and vision panel made of 8mm thk float glass slid from the top ,finished with 1.5mm thick laminate on both side, working on floor spring and pivot with door closure locking arrangement,ss finished handle of DORMA make 316 SS TGDID 300X22 S Satin,Concealed Door closure-DORMA ITS-96 EN 3-6, automatic door drop down seal, Concealed hinges, DORMA door stopper 4012 etc. complete. (Type DR 03) <b>(Basic Rate of Laminate of Rs. 647/- Sq.mt.)</b>	m2	12.00		
51	Providing and fixing 75 mm thk solid shutter as per given detail with 40X40X1.5mm thick aluminium box section with 12mm thick marine plywood on both side with triple rebate with acoustical lining,40mm x 75mm tw beading ,finished in 1.5mm thk laminate both side of approved shade and make with necessary hardware such as ss handle-DORMA 3016 SS TGDID 300X22 S Satin ,Concealed door closure-DORMA ITS 96 3-6, automatic door drop & down, Concealed hinges, locking arrangement of approved make etc. complete. (Type DR 05) <b>(Basic Rate of Laminate of Rs. 647/- Sq.mt.)</b>	m2	3.00		
52	VENEER DOOR- Providing and fixing 75 mm thk solid shutter as per given detail, with 40X40X1.5mm thick aluminium box section with 12mm thick marine plywood on both side, with triple rebate with acoustical lining,40mm x 75mm tw beading ,finished in venner of	m2	3.00		

	approved make and shade with malemine polish both side with necessary hardware such ss 300mm long handle-DORMA 316 SS TGDID 300X22 S Satin, Concealed door closure DORMA ITS 96EN 3-6, automatic door drop down seal, DORMA 4012 wall stopper, Concealed hinges, locking arrangement of approved make etc. complete. ( Type DR 06) <b>(Basic Rate of Veneer of Rs. 2000/- Sq.mt.)</b>				
53	Providing and fixing 12mm thk double leaf toughened glass shutters as per given detail with necessary hardware such as top pivot and bottom patch fittings PT 10 top patch PT 20, floor corner lock US 10, ss handle-DORMA 316 SS TGDID 300X22 S Satin, 2nos DORMA floor spring BTS 75 V, DORMA 4012 wall stopper, Electromagnetic lock 2nos-EM3000AH etc. complete. ( Type DR 07)	m2	16.00		
54	Providing and fixing Teakwood frames, 25mm x 40mm with Shutters to pantry counter counters made out of 19mm Marine Plywood finished with approved 1.5mm thick for external surface & 1mm thick laminate for internal surface per drawings and directed etc. complete. <b>(Basic rate of Laminate of Rs. 647/-Sqmt)</b>	m2	16.00		
55	Providing and fixing column cladding/ wall paneling/ with 12mm marine plywood finished with 4mm thick approved veneer with melamine polish on 50X50X1.5mm/50mmx25mmX1.5mm thick Aluminium sections frame work, Teakwood beading at corners with melamine polish, skirting and false ceiling level as per drawing etc complete. <b>(Basic Rate of Veneer of Rs. 2000/-Sq.mt)</b>	m2	28.00		
56	Providing and installing over head storage unit of 350mm deep, height as per drawings including partition and shelves all made out of 19mm marine plywood, shutter of average width 450mm and upto 600mm 19mm thick and 6mm marine ply back and pelmet, finished with 1.5 mm thick approved laminate on all outer faces laminated storage shutters and 0.8mm thk laminate of approved shade & make to internal spaces, all fixtures, fittings, with hinges, handles, locks, etc. as per drawing/ directed etc complete. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)</b>	m2	12.00		
57	Providing and fixing mirror panelling with 25X40x1.5mm aluminium box section @ 600X600mm C/C @ horizontal & vertically, 8mm thick marine plywood fixed on aluminium framework, & 6mm thick mirror of approved make, including all hardware etc. complete as per drawing or as directed.	m2	20.00		
58	Providing and fixing 75mm deep including 1000 to 1050mm deep fascia using 12mm thick marine ply & 12mm thick 12.5mm thick Gypsum board backing with approved paint with teakwood beading around the edge with aluminium framework of size 50 X 50 X 1.5mm @ 450mm C/C etc. complete as per design or as directed.	rmt	96.00		
59	Providing and Fixing trap Doors for accessing the services and utilities in marine plywood 18mm thick, with necessary sized salwood framework, suspended from true ceiling bolted by anchor fasteners. Doors to be finished with laminate internally & paint on external	m2	20.00		

	sides, edged with PVC transparent seal to prevent smells being sucked into the trap door space. Small sized trap doors to be locked with Ellen Key locks with safety chain stays. Larger sized Doors to be divided into removable panels with notched removable framework as directed complete.				
60	Providing and installing full ht. storage unit of 2100 to 2400mm high, 750 to 900mm wide & depth as below with post form top and shutters internally, using 25mm thick marine plywood vertical, horizontal, top, bottom back and shutters (Including c/c spacing of partitions and shelves at max 375 height) with 1.5mm thick laminate for all external surfaces & 1mm thick laminate finish for all internal surfaces including both sides, all the edges finished with PVC edge band , openable shutters with all fixtures, fittings, hinges, handles, ball catches and locks etc complete as per drawing.as directed. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)</b> --700mm deep	m2	8.00		
61	Providing and installing full ht. storage unit of 2100 to 2400mm high, 750 to 900mm wide & depth as below with post form top and shutters internally, using 25mm thick marine plywood vertical, horizontal, top, bottom back and shutters (Including c/c spacing of partitions and shelves at max 375 height) with 1.5mm thick laminate for all external surfaces & 1mm thick laminate finish for all internal surfaces including both sides, all the edges finished with PVC edge band , openable shutters with all fixtures, fittings, hinges, handles, ball catches and locks etc complete as per drawing.as directed. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)</b> --600mm deep	m2	108.00		
62	Providing and installing full ht. storage unit of 2100 to 2400mm high, 750 to 900mm wide & depth as below with post form top and shutters internally, using 25mm thick marine plywood vertical, horizontal, top, bottom back and shutters (Including c/c spacing of partitions and shelves at max 375 height) with 1.5mm thick laminate for all external surfaces & 1mm thick laminate finish for all internal surfaces including both sides, all the edges finished with PVC edge band , openable shutters with all fixtures, fittings, hinges, handles, ball catches and locks etc complete as per drawing.as directed. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)</b> --450mm deep	m2	23.00		
63	Providing and installing Low height storage unit 1200 mm high having 2 nos. of shelves with post form top & shutters using 25mm thick marine ply vertical, horizontal, top, bottom back and shutters (For partitions and shelves) with 1.5mm thick laminate for all external surfaces & 1mm thick laminate finish for all internal surfaces including both sides, all the edges finished with PVC edge band, openable shutters with all fixtures, fitting, hinges, handles, ball catches and locks etc. complete as per drawing.as directed. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)</b> --600mm deep	m2	14.00		
64	Providing and installing Low height storage unit 1200	m2	59.00		

	mm high having 2 nos. of shelves with post form top & shutters using 25mm thick marine ply vertical, horizontal, top, bottom back and shutters (For partitions and shelves) with 1.5mm thick laminate for all external surfaces & 1mm thick laminate finish for all internal surfaces including both sides, all the edges finished with PVC edge band, openable shutters with all fixtures, fitting, hinges, handles, ball catches and locks etc. complete as per drawing.as directed. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)</b> --450mm deep				
65	Providing and installing Low height storage unit 1200 mm high having 2 nos. of shelves with post form top & shutters using 25mm thick marine ply vertical, horizontal, top, bottom back and shutters (For partitions and shelves) with 1.5mm thick laminate for all external surfaces & 1mm thick laminate finish for all internal surfaces including both sides, all the edges finished with PVC edge band, openable shutters with all fixtures, fitting, hinges, handles, ball catches and locks etc. complete as per drawing.as directed. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)</b> --400mm deep	m2	5.00		
66	Providing and installing Low height storage unit 1200 mm high having 2 nos. of shelves with post form top & shutters using 25mm thick marine ply vertical, horizontal, top, bottom back and shutters (For partitions and shelves) with 1.5mm thick laminate for all external surfaces & 1mm thick laminate finish for all internal surfaces including both sides, all the edges finished with PVC edge band, openable shutters with all fixtures, fitting, hinges, handles, ball catches and locks etc. complete as per drawing.as directed. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)</b> --300mm deep	m2	13.00		
<b>G</b>	<b>PAINTING AND POLISHING WORKS</b>				
67	Providing and Applying 3 coats of Acrylic emulsion paint Asian paints/ equivalent on false ceiling as per design and approved shade by the Architect. Cost to include preparing the surface, applying primer, putty, etc. complete. All jambs, trims, edges, grooves to be included in SQ.M rate. No seperate measurement on R.M.	m2	712.00		
68	Providing and Applying 3 coats of luster paint Asian paints/ equivalent on wall and partitions as per design and approved shade by the Architect. Cost to include preparing the surface, applying primer, putty, etc. complete. including all jambs, trims, edges, grooves to be included in SQ.M rate. No seperate measurement on R.M.	m2	20.00		
69	Providing and applying Oikos or equivalent make internal textured paint of approved shade and colour etc. complete	m2	83.00		
70	Providing and applying french spirit polishing : Two or more coats on new works including a coat of wood filler The material shall contain 25 ± 1 percent by weight of shellac (conforming to IS: 16-1956§) dissolved in denatured spirit ( conforming to IS: 324-1959    ) or isopropyl alcohol or a mixture of the two together with other alcohol soluble ingredients as may be necessary	m2	20.00		

	so as to improve the performance of the material. etc. complete.				
71	Providing and applying velvet touch premium quality, highly durable and washable emulsion painting to walls of approved brand & shade in three coats as per the specifications of the manufacturer over two coats of readymix primer putty to achieve smooth & uniform surface & shade. the rate shall include cleaning & preparation of surface, primer & putty in required layers with sanding the surface after each layer to smoothness as per the specifications or as instructed by construction manager including necessary scaffolding etc. complete.	m2	1404.00		
<b>H</b>	<b>P.O.P. &amp; FALSE CEILING WORK</b>				
72	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with : --12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- Part I ( <b>Basic rate of Gypsum of Rs. 600/-Sq.mt</b> )	m2	712.00		
73	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats	m2	32.00		

	<p>of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts &amp; bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with :  --12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- Part I  --Same as above item but for Moisture resistant ceiling  <b>(Basic rate of Gypsum of Rs. 700/- sq.mt)</b></p>				
74	<p>Providing &amp; Fixing of Armstrong Wooden finishes Suspended Ceiling System with WOODWORKS (MICRO LOOK) EDGE TILES WITH ARMSTRONG XL 15 MM EXPOSED GRID.  The Tile with perforation pattern R3 with approved laminate (US Maple, Royal Cherry, Maple, Dark Walnut) / Wood Veneer (Maple, Dark Bamboo, Red beech, US Cherry) finish would have an NRC of 0.5, Humidity Resistance (RH) of 90%, Fire Performance Class 1(BS - 476) in module size of 600mm x 600mm x 12mm and density of 830 Kgs/M3.  The grid should be of "Armstrong" make with 15mm wide T - section flanges color white having rotary stitching on all T sections i.e. the Main Runner, 1200 mm &amp; 600 mm Cross Tees with a web height of 38mm and a load carrying capacity of 14 Kgs/M2. The T Sections have a Galvanizing of 90 grams per M2 and pullout strength of 100kg. Suspension system for Armstrong grid to be of Armstrong make.  <b>INSTALLATION:</b> To comprise main runner spaced at 1200mm centers securely fixed to the structural soffit using Armstrong suspension system (specifications below) at 1200mm maximum centre. The First/Last</p>	m2	347.00		

	<p>Armstrong suspension system at the end of each main runner should not be greater than 450mm from the adjacent wall.</p> <p>Flush fitting 1200mm long cross tees to be interlocked between main runners at 600mm centre to form 1200 x 600 mm module. Cut cross tees longer than 600mm require independent support. 600 x 600mm module to be formed by fitting 600mm long flush fitting cross tees centrally between the 1200 mm cross tees.</p> <p>Perimeter trim to be Armstrong wall angles of size 3000x19x19mm, secured to walls at 450 mm maximum centres.</p> <p>ARMSTRONG SUSPENSION SYSTEM accessories manufactured and supplied by Armstrong World Industries consisting of M6 Anchor Fasteners with Vertical Hangers made of Galvanized steel of size 26 x 26 x 25 x 1.2mm with a Galvanized Thickness of 80gsm, A pre Straightened Hanger wire of dia - 2.65 mm of 1.8 m length., thickness of 80gsm and a tensile strength of 344-413 MPa, along with Adjustable hook clips of 0.8mm thick, galvanized spring steel for 2.68 mm. The adjustable clip also consists of a 3.5 mm aquiline wire to be used with the main runner.</p>				
75	<p>Providing and fixing wooden ceiling made up of 50mm x 50 x 1.5mm Aluminium framework suspended frame as per the fixing details given in the drawing work with 9mm Marine plywood fixed to the frame work finished with Imported &amp; melamine polish as per design and as directed etc complete. <b>(Basic rate of Imported veneer of Rs. 2000/-Sq.mt)</b></p>	m2	66.00		
76	<p>Providing and fixing 12mm thick 600 X 600mm plywood backing for fixing ceiling including framework &amp; fixtures etc. complete as directed. <b>(Basic rate of plywood of Rs. 850/-Sq.mt)</b></p>	nos	120.00		
77	<p>Providing and fixing Interior grade stretch fabric ceiling (of V-Ceil, Newmat or equivalent make) including fixing with SS rope supports and fabric of approved shade, 19mm thick marine plywood top &amp; 150mm deep all sides, 1.5mm thick laminate internal side, framework suspended from ceiling as per manufacturer specifications complete as per design and as directed. <b>(Basic cost of Fabric Rs. 5,000/- per Sq.mt.)</b></p>	m2	41.00		
<b>J</b>	<b>GENERAL ITEMS</b>				
78	<p>Providing &amp; fixing 8mm Doormat of Nomad / 3M / LG Synthetic Matting system in toilet area and entrance, of approved colour and size. Etc. complete.</p>	m2	20.00		
79	<p>Providing and pasting 3M or equivalent approved make frosted film on glazed portion of doors and partitions at locations as per detailed architectural drawing and as directed by engineer in charge</p>	m2	8.00		
80	<p>Providing &amp; installing UP plastic self watering planter boxes of approved make &amp; colour, sizes as below etc. complete as directed.</p> <p>--Size of Planter box @ 150mm Dia.</p>	nos	155.00		
81	<p>Providing &amp; installing UP plastic self watering planter boxes of approved make &amp; colour, sizes as below etc. complete as directed.</p> <p>--Size of Planter box @ 225mm Dia.</p>	nos	143.00		
82	<p>Providing &amp; installing Cement concrete planter boxes of</p>	nos	10.00		



	sizes 300mm dia. & 600mm high including filling soil & manure etc. complete as directed.				
83	Providing & fixing approved type of Roller Blinds with imported mechanism, approved make on windows. <b>(Basic cost of Blinds Rs. 1200/- Sqmt)</b>	m2	132.00		
84	Providing & fixing wallpaper of Approved make, shade & type including 12mm thick Gypsum board backing etc. complete. <b>(Basic cost of wallpaper of Rs. 3000/- Sq.mt.)</b>	m2	66.00		
85	Providing & fixing SS signages out of 6mm thick polycarbonate coloured back panel with 2mm thick perforated SS plate with CNC cut with necessary hardware for fitting etc. complete as directed.	nos	20.00		
86	Providing & fixing Dustbin of approved make, shade & type etc. complete.	nos	120.00		
87	Supplying & fixing in position, 'Aquaguard' water purifier of Eureka forbes make including making necessary inlet and outlet, electrical connection etc complete. (Model No. Aquaguard Enhance UV+UF Water Purifier)	nos	4.00		
88	Providing & planting Indoor plants of type Aralia or Equivalent 9 to 18" high after soil including filling soil & manure etc. complete.	nos	232.00		
89	Providing & fixing white board of Alcon / Whitemark Magnetic Board with full set of accessories. --Size 1200 X 900mm	nos	12.00		
90	Supplying & fixing 42" LED TV approved make etc. complete as directed	nos	4.00		
<b>II</b>	<b>Plumbing Works</b>				
<b>A</b>	<b>SANITARY FIXTURES &amp; CP FITTING</b>				
91	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS : 13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required : Kitchen sink with drain board- Size 510x1040 mm bowl depth 250 mm	Nos	4.00		
92	Providing and fixing P.V.C. waste pipe for sink or wash basin including-P.V.C. waste fittings complete. <b>Size : 40 mm dia, Semi rigid pipe</b>	Nos	4.00		
93	Providing and fixing PTMT Waste Coupling for wash basin and sink, of approved quality and colour. Waste coupling 38 mm dia of 83 mm length and 77mm breadth, weighing not less than 60 gms	Nos	4.00		
94	<b>Providing and fixing PTMT Bottle</b> Trap for Wash basin and sink. Bottle trap 38 mm single piece moulded with height of 270 mm, effective length of tail pipe 260 mm from the centre of the waste coupling, 77 mm breadth with 25 mm minimum water seal, weighing not less than 263 gms	Nos	4.00		
95	Poviding, Fixing, Testing and Commissioning of Pantry Tap. <b>Make : Jaguar 5357 N</b>	Nos	4.00		
<b>B</b>	<b>DRAINAGE WORK</b>				
96.0	Supplying, Fixing and Testing uPVC soil, waste and vent pipes (SWR) confirming to IS: 13592 - 2013, and IS: 14735 Type B with rubber ring (confirming to IS: 5382) joint inclusive of all necessary specials like bends, tees, offsets, doorbends, junctions, cowls, etc., laid under floor/ fixed on walls, hung under the ceiling, and in pipe shafts, etc., complete. The quoted rate	Rmt	15.00		

	<p>should include lead and lifting charges to all levels, necessary scaffolding and supports like hanger supports, grip bolts and clamps and making good the openings, etc. The rate should include supplying and fixing GI slotted angle iron brackets, hangers, supports with necessary drilling holes to suit the insertion of pipe clamps, deburring etc., as per detailed drawing for supporting soil, waste and rain water pipes and water supply pipes in shafts with suitable fabricated GI clamps, GI bolts, GI anchor bolts, GI nuts and GI washers fixed on shaft walls outer walls, brick work/ concrete supports, etc. The quoted rate shall include the cost of brackets galvanised with zinc alloy of 0.08 mm thick conforming to IS: 1239, etc. complete. The Rate shall also be inclusive of 2 coats of painting synthetic enamel paint of approved colour over one coat of primer and pipe identification labels and technical specification.</p> <p><b>(Inside Pantry Area)</b> --40mm dia. (Wash Basin/Sink/Urinal)</p>				
97	<p>Supplying, Fixing and Testing uPVC soil, waste and vent pipes (SWR) confirming to IS: 13592 - 2013, and IS: 14735 Type B with rubber ring (confirming to IS: 5382) joint inclusive of all necessary specials like bends, tees, offsets, doorbends, junctions, cowls, etc., laid under floor/ fixed on walls, hung under the ceiling, and in pipe shafts, etc., complete. The quoted rate should include lead and lifting charges to all levels, necessary scaffolding and supports like hanger supports, grip bolts and clamps and making good the openings, etc. The rate should include supplying and fixing GI slotted angle iron brackets, hangers, supports with necessary drilling holes to suit the insertion of pipe clamps, deburring etc., as per detailed drawing for supporting soil, waste and rain water pipes and water supply pipes in shafts with suitable fabricated GI clamps, GI bolts, GI anchor bolts, GI nuts and GI washers fixed on shaft walls outer walls, brick work/ concrete supports, etc. The quoted rate shall include the cost of brackets galvanised with zinc alloy of 0.08 mm thick conforming to IS: 1239, etc. complete. The Rate shall also be inclusive of 2 coats of painting synthetic enamel paint of approved colour over one coat of primer and pipe identification labels and technical specification.</p> <p><b>(Inside Pantry Area)</b> --75 mm dia.</p>	Rmt	5.00		
98	<p>Supplying, Fixing and Testing uPVC soil, waste and vent pipes (SWR) confirming to IS: 13592 - 2013, and IS: 14735 Type B with rubber ring (confirming to IS: 5382) joint inclusive of all necessary specials like bends, tees, offsets, doorbends, junctions, cowls, etc., laid under floor/ fixed on walls, hung under the ceiling, and in pipe shafts, etc., complete. The quoted rate should include lead and lifting charges to all levels, necessary scaffolding and supports like hanger supports, grip bolts and clamps and making good the openings, etc. The rate should include supplying and fixing GI slotted angle iron brackets, hangers, supports with necessary drilling holes to suit the insertion of pipe clamps, deburring etc., as per detailed drawing for</p>	Rmt	25.00		

	supporting soil, waste and rain water pipes and water supply pipes in shafts with suitable fabricated GI clamps, GI bolts, GI anchor bolts, GI nuts and GI washers fixed on shaft walls outer walls, brick work/ concrete supports, etc. The quoted rate shall include the cost of brackets galvanised with zinc alloy of 0.08 mm thick conforming to IS: 1239, etc. complete. The Rate shall also be inclusive of 2 coats of painting synthetic enamel paint of approved colour over one coat of primer and pipe identification labels and technical specification. <b>(Inside Pantry Area)</b> --75 mm dia. (Vertical Waste Water Downtake)				
99	<b>Providing &amp; fixing PVC Nahni</b> trap of 75mm dia diameter, with necessary distance piece of 75mm dia pipe and 150x150mm SS grating, making necessary SLAB /WALLholes and cutting walls, etc complete. (Supreme/ Finolex/ Prince/ Astral Makes)	Nos.	4.00		
100	<b>Providing &amp; fixing of PVC Cowl</b> with solution joints for the pipes- 75 mm dia.	No	1.00		
<b>C</b>	<b>WATER SUPPLY WORK</b>				
101	<b>Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability</b> for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.(Make - Ajay Flowgaurd / Astral) (Inside Pantry Area) - Concealed work, including cutting chases and making good the walls etc.- <b>15 mm dia</b>	Rmt	15.00		
102	<b>Supply, installation, testing</b> and commissioning of gunmetal, male or female threaded isolation control valve (Ball Valve / Gate Valve), confirming to IS 778, PN 1.0, with necessary specials, unions, nipple etc., to complete the job.( Make : Zoloto/ Audco) <b>15 mm dia</b>	No	4.00		
<b>III</b>	<b>Electrical Works for 3rd Floor</b>				
<b>A</b>	<b>PANELS &amp; DISTRIBUTION BOARDS</b>				
	<b>Notes for Item No 103:</b> The rates for all these items under the above heading should include all necessary items and equipments as required: a) Assembling loose components of the various equipments as per manufacturer's instructions and as per advise of Engineer-in-Charge. b) Bonding onto masonry/concrete work including cutting/drilling holes through walls/floors and grouting with cement mortar 1:2:4. c) Providing All fixing accessories such as nuts, screws, bolts, Anchor Fastners etc. as required. d) Effecting adequate and proper connections to the main Earthing Stations . e) Touching up all damaged paint over equipment with two coats of Red Oxide Primer and two finishing coats of approved synthetic enamel paint. f) All items listed in the BOQ shall be of approved make only as per tender. Any unspecified item shall be as per				

approval of consultant. g) All necessary Lifting, Shifting & Instalation charges to be included in instalation rates. No extra amount shall be paid for the same.				
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Design as per technical specifications and obtaining approval of drawings prior to manufacturing, manufacture, insure, pack with PVC sheets, transport to site, unload, store, erect in proper position, testing and commissioning of following Panel cubicles. The panels shall be front operated, dead back having Bottom Main Bus bars & Top Cable entry and exit, fabricated using 14 gauge CRCA sheet steel for main frame, door and partitions, dust and vermin proof lockable doors and carrying the control wiring using approved make FR colour coded Wires of minimum 2.5 sq.mm and using approved make push on terminals. The panel shall be floor mounting type, all complete with interconnections by using aluminium Bus Bars of 99.95% purity, colour coded heat shrinkable PVC sleeves. The Panel shall be painted with Powder Coated granular finished painting with 7 tank painting process and further treated with aluzinc coating to withstand the site environment conditions with shade No. RAL 7032 from inside and outside all complete as per drawings, technical specifications and final approval of Consultant. **Note :- HVAC panel shall be of IP65.**

**HVAC Panel :- (Location :- Terrace Floor):**  
 --Panel shall be provided with 100W, 230V space heater & lamp holder with limit switch.  
 --Panel shall be provided with 6A Switch Socket.

**Incomer Section :**  
 1 No., of 315 Amps., Four Pole, Microprocessor based Moulded Case Circuit Breaker with built in over-current, short circuit and earth fault releases. Icu=Ics=10 kA for 1sec. The breaker shall be provided with BMS connectivity port, shunt trip coil with all necessary accessories. The breaker shall be ready to hook with BMS system.

**Metering Section :**  
 1 No., CT Operated load manager of approved make. The Load manager should have Ammeter, Voltmeter, kWh, kVAR, Power Factor & Frequency meter with RS-485 port ready.

**Indication Section For Incoming Section :**  
 --3 Nos., Phase Indicating lamps, Led type of approved make.  
 --3 Nos., One Red and One Green and One Amber Led type lamps for indicating MCCB is in 'ON' or 'OFF' or 'TRIP' position.

**Current Transformers For Incoming Section :**  
 3 Nos. of 315/5 Amps Cast Resin type Current Transformers, having 10 VA burden and Class-1 accuracy for metering purpose.

**Bus bars :-**  
 315 Amps uniformly rated, continuous duty, 415 V AC, 3 Phase and Neutral Aluminium Bus-bars having SC withstand capacity of 10 kA for 1 sec, with colour coded heat shrink sleeves supported on SMC type grip supports. The Horizontal / Vertical sections of the busbars should all be uniformly rated for 315 Amps.

**Out goings :-**  
 --3 No., of 63 Amps., TPN, MCB & RCCB (300mA) Circuit Breaker with built in over-current, short circuit releases. Icu=Ics=10 kA for 1sec. 10kw (12 HP), 10kw(12 HP) & 14.5kw(18 HP) VRF UNIT\_3RD Floor

No.

1.00

).The breaker shall be provided with BMS connectivity port, shunt trip coil with all necessary accessories. The breaker shall be ready to hook with BMS system.

--9 No., of 63 Amps., TPN,MCB & RCCB (300mA) Circuit Breaker with built in over-current, short circuit releases. Icu=Ics=10 kA for 1sec. 3 Nos. 16kw (20 HP) VRF UNIT\_4th, 5th & 6th Floor ). The breaker shall be provided with BMS connectivity port, shunt trip coil with all necessary accessories. The breaker shall be ready to hook with BMS system.

--4 No., of 63 Amps., TPN,MCB & RCCB (300mA) Circuit Breaker with built in over-current, short circuit releases. Icu=Ics=10 kA for 1sec. The breaker shall be provided with BMS connectivity port, shunt trip coil with all necessary accessories. The breaker shall be ready to hook with BMS system.(spare)

<b>B</b>	<b>LIGHTING FIXTURES &amp; FANS</b>				
	<p><b>Note for item No 104 to 117:</b>            The rates for lighting fixtures and fans shall include all accessories and supply of all materials that may be required to make the fixture complete in all respects:            a) All the fixtures shall be suitable for single phase, 50 cycles, 240 Volts, AC supply system.            b) All light fixtures shall be provided with Electronic ballast having THD&lt;20% as described in the schedule.            c) All fixtures shall be factory wired with flexible FR copper conductor wires.            d) All fixtures shall be supplied with LED's of CCT as per architect approval and as called for in the item.            e) All the fixtures shall be quoted of approved make only.            f) All Indoor lights shall be of IP43.</p> <p>Supplying, Installation, Testing &amp; Commissioning at site, taking approval prior to procurement, fixing in position, testing and commissioning of following light fixtures with all accessories such as spring loaded side holders, Electronic ballast, CRCA housing etc. all complete with supply of approved Colour lamps/tubes/LED's of approved make all complete as required and as per final direction and approval of Consultant/MDL.</p>				
104	Supplying and erecting LED square / circular 13 to 15W downlighter having pressure die-cast aluminum housing, opal translucent cover, mounting arrangement with board for surface type or spring loaded mounting clips for flush type complete.	No	39.00		
105	Approved make <b>24W LED DOWNLIGHTER</b> , recessed in ceiling / surface mounted as per site conditions, with a colour rendering index of >70, lumen output of minimum 1550 lumens, CCT as per architects approval, electronic driver with dimming facility having THD<30%, Die cast aluminium housing & Opal frost high transmission PMMA diffuser, Frame in ABS, all complete with accessories, as required & as per directions & approval of consultant. <b>(IP43)</b> .	No	20.00		
106	Supplying and erecting square shaped CRCA /die-cast aluminium powder coated housing LED Panel light (slim edge-lit) 600X600mm suitable for 36 W-40W with provision for plane front frame with translucent cover fixed to the housing complete.	No	15.00		
107	Supplying and erecting CRCA /die-cast aluminium powder coated housing LED Panel light (slim edge-lit) square / round shape suitable for 19 to 24 W with provision for plane front frame with translucent cover fixed to the housing complete.	No	1.00		
108	Supplying and erecting LED square / circular 9 to 12W downlighter having pressure die-cast aluminium housing, opal translucent cover, mounting arrangement with board for surface type or spring loaded mounting clips for flush type complete.	No	1.00		
109	Supply. Installation, Testing & Commissioning of the Track Light 25W 840 White. (Display Room)	No	14.00		
110	Supply. Installation, Testing & Commissioning of the	No	7.00		

	Track 1 Meter 3 Phase White. (Display Room)				
111	Supply. Installation, Testing & Commissioning of the I shaped connector required to connect the two track of 1 meter length. (Display Room)	No	5.00		
112	Supply. Installation, Testing & Commissioning of the 22W LED 840 required on the top of the table.. (Display Room)	No	2.00		
113	SITC of motion sensors for light & AC contol inside the closed cabin of approved make.	No.	6.00		
114	SITC of LED Strip cove light - 4.8 W Per Metre	Mtrs.	50.00		
115	Supplying and erecting cabin fan of A.C. 230 V. 50 cycles 250 mm. /300 mm. sweep complete with necessary brackets for fixing cabin fans, wire etc and marking Sr. No. and date of erection.	Nos.	8.00		
116	SITC of battery operated call bell system with receiver unit with indicator & buzzing sound of approved make.	Nos.	7.00		
117	Providing and erecting air circulator 450 mm. sweep oscillating type, wall mounting 1440 RPM without speed regulator, overheat protection unit, totally enclosed, flame proof motor suitable for 230/250 Volts single phase, 50 cycles A.C. supply, with one metre of 3 core lead wire and with moisture proof treatment to winding and with 'E' class insulation and marking Sr. No. and date of erection.	Nos.	10.00		
<b>C</b>	<b>POINT WIRING &amp; CONDUITING WORK</b>				
	<p><b>Note for Item No 118 to 131:</b>  These notes shall apply to all the relevant wiring items described in the schedule of items given below :-  a) All points wiring, circuit wiring, sub mains wiring shall be done using rigid FR PVC CONDUITS as required, conduits of minimum 2 mm thickness and shall comply with IS 2509 of 1973 or amendments there of and FIA approval.  b) All switch boards under the point wiring shall be the standard boxes available and the same shall be suitable for concealed work/surface mounted work as per site. The boxes should be of Electro Zinc Plated/pvc as per the Manufactures standard practice as per site and should be suitable to accommodate number of control switches fan regulators, sockets, etc. as indicated in drawings.  c) The Sub Main wiring shall have continuous 2.5 sq.mm. wire of approved make. FR Copper conductor earth wire for earth continuity having Green colour in 660/1100 volts grade.  d) The point wiring shall comply to IS 732.  e) All materials under this schedule shall deemed to be included by the Contractor in his scope.  f) The entire work of the point wiring may be split into two parts i.e. partially to be laid on MS angle brackets ceiling supported or through existing floorings. It is understood that the bidder have included all the costs towards chasing the floors, removing the debris and redoing the flooring using cement mortar. All such costs shall be deemed to have been included.</p>				
118	Supplying & erecting mains with 2x2.5 sq.mm.and earth wire 1.5 sq.mm FR PVC copper wire, in rigid PVC conduit min.20mm dia, as per specification No: WG-MA/PC, para no. 1.4.1 of PWD Specification.	R.Mtr.	550.00		
119	Point wiring for <b>light/fan/bell</b> in 20 mm rigid PVC	Point	50.00		



	conduit with 1.0 sq.mm FR grade Copper wire with flush type switch and required accessories as per specification <b>No:</b> WG-PW/SW of PWD Specification.				
120	Supplying and drawing of 2x1.5 sq.mm. FR grade copper wires with 1.5 sqmm earthwire in provided concealed pipes and terminating on modular accessories in box for point wiring for independent plug as per specification No WG-PW/SW of PWD Specification.	R.Mtr.	75.00		
121	Supplying and erecting modular type switch 6A / 10A ISI mark approved make duly erected on provided plate and box with wiring connections complete.	Nos	31.00		
122	Supplying and erecting Modular type 5 pin socket with safety shutters 3 module socket 6A. 240V AC supply, ISI approved and marked make duly erected on provided plate and box with wiring connections complete duly erected in approved manner.	Nos	31.00		
123	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 4 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background in an approved manner.	Nos	31.00		
124	Supplying & erecting mains 2x1.5 sq.mm.and earth wire 1.5 sq.mm FR PVC copper wire, in rigid PVC conduit min.20mm dia, as per specification No: WG-MA/PC, para no. 1.4.1 of PWD Specification.	R.Mtr.	110.00		
125	Supplying and erecting ISI mark flush type shockproof plug socket 6 pin 6A and 16A with switch 16A combined unit erected on Filled polypropylene ISI marked (IS:14772-2000) board or double wooden block / 3mm thick hylam sheet / 4mm thickplywood pasted with 1.5 mm thick sunmica with S M screws and duly connected.	Nos	10.00		
126	SITC of 2 nos. 6 Amps.Multistandard type Socket outlet with 16 Amps.single pole modular type switch for Workstation and necessary face plate and GI back box with interconnections all complete as required and as per final approval of the Consultant.	Nos	38.00		
127	SITC of 6 Amps.Multistandard type Socket outlet with 6 Amps.single pole modular type switch and necessary face plate and GI back box with interconnections all complete as required and as per final approval of the Consultant.	Nos	60.00		
128	SITC of 3 nos. 6 Amps.Multistandard type Socket outlet with 16 Amps.single pole modular type switch for <b>TV point</b> and necessary face plate and GI back box with interconnections all complete as required and as per final approval of the Consultant/MDL.	Nos	4.00		
129	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 25 mm with accessories on wall/ceiling as per specification No: WG-MA/CON of PWD Specification.	R.Mtr.	90.00		
130	Supplying and erecting UPVC reinforced flexible conduit 20 mm in dia. conforming to I.S. and approved make with required number of couplings, PVC bushes, check nuts etc. complete.	R.Mtr.	55.00		
131	Supplying and erecting PVC box trunking of size 50x50 mm. with accessories on wall/ceiling as per specification No: WG-MA/BOX, para no. 1.1.2 of PWD	R.Mtr.	75.00		

	Specification.				
<b>D</b>	<b>CABLES AND CABLE TRAYS</b>				
	<p><b>Notes for Item No 132 to 138 :</b>            The rates for all item of work shall include :            a) Effecting proper and adequate connections at terminations.            b) Ensuring that provision is left in building components and trenches as the work proceeds for incorporation of cable supports at a later date.            c) Providing all fixing accessories such as clamping devices, nuts and bolts, screws where laid in trenches.            d) Providing proper supports for cable terminal boxes as called for.            e) Providing heavy duty copper lugs, insulation tape etc. at joints and terminations as called for.            f) All fixing accessories such as GI saddles, screws, rawal plugs, suitable size Anchor Fasteners etc.            g) Jointing by crimping type lugs.            h) Cutting chases, holes and making good the same wherever required.            i) Providing GI angle iron supports in the wherever required and fabricated using 50 x 50 x 6 mm GI Angle iron frame work along with 25 x 6 mm GI flats along with anti rust painting and final coats of painting.            j) All items listed in the BOQ shall be of approved make only as per tender. Any unspecified item shall be as per approval of consultant.            k) Vendor to verify actual quantity as per site conditions before procurement.</p>				
132	Supplying, erecting & terminating PVC armoured cable 1100 V. 3½ core 185 sq mm aluminium conductor with continuous 12.97 sq mm (8 SWG) G.I. earth wire complete erected with glands & lugs, on wall/trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL of PWD Specification.	R. Mtr.	60.00		
133	Supplying, erecting & terminating PVC armoured cable 1100 V. 4 core 16 sq mm copper conductor with continuous 5.48 sq mm (12 SWG) G.I. earth wire complete erected with glands & lugs, on wall/trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/CU of PWD Specification.	R. Mtr.	350.00		
134	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 300 mm width & 75 mm height complete with necessary coupler plates & hardware in approved manner.	R. Mtr	35.00		
135	Supply, Installation, Testing & Commissioning with suitable angle iron supports GI perforated cable trays bolted type and fabricated using minimum 14 gauge CRCA sheet and maximum width of <b>450 mm</b> & height of 75 mm. Further the rate shall also include supporting of these trays from ceiling/ground using minimum 10mm fully threaded GI Rods/MS angles painted using 2 coats of red oxide and 2 coats of primer, all complete as required and as per final directions and final approval of the Consultant/MDL.	R. Mtr	15.00		
136	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 200 mm width & 75 mm height complete with necessary coupler plates & hardware in	R. Mtr	80.00		

	approved manner.				
137	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 150 mm width & 75 mm height complete with necessary coupler plates & hardware in approved manner.	R. Mtr	40.00		
138	Suppling & laying Rigid PVC conduit 25 mm Dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC, para no. 1.2.1 of PWD Specification.	R. Mtr	1500.00		
<b>E</b>	<b>EARTHING</b>				
	<p><b>Note for Item No 139 to 141:</b></p> <p>a) All earth pits installation &amp; testing shall be as per IS 3043 with latest amendments.</p> <p>b) Earthing stations should contain relevant grade of charcoal/coke and salt packed around the earth plate/earth pipe as called for in the item.</p> <p>c) Earthing shall be done at indicated location by the Consultants. The minimum distance between the two earth station shall be 3 meters and that from the building is 2500 mm.</p> <p>d) An earth ring with relevant earth test terminal boxes shall to be provided at regular intervals.</p> <p>e) Adequate number of earth strips with proper sized holes shall be provided for extending earthing/looping earth connections at various floors shall be provided and executed as per the requirement.</p> <p>f) The Contractor has to provide heavy duty Cover of size 450 x 450 x 8 mm thick to the Earthing Chamber. The cover is to be sand blasted and then Powder coated using Matt Jet Black Colour. The Cover is to be fabricated using 8 mm thick Chequered Plate.</p> <p>g) As per IS 3043, The value for earth resistance shall be 5 Ohms.</p>				
139	Providing earthing with Copper earth plate size 60 x 60 x 0.315 cm with funnel with a wire mesh for watering and brick masonry block C.I. cover with minimum 25 kg of maintenance free earth conductivity enhancing mineral earthing compound complete with all materials, testing & recording the results as per specification no ESE -LA of PWD Specification.	Nos	2.00		
140	Supply, Installation, Testing & Commissioning, the following sizes of earthing strips or wires including providing all fixing accessories and effecting proper connections and as per final directions and approval of the Consultant. --Supplying and erecting G.I. strip of required size used for earthing on wall and/or any other purpose with necessary GI clamps fixed on wall painted with bituminous paint in an approved manner with joint required. as per specification No (EA-EP) of PWD Specification..	Kg	71.50		
141	Supply, Installation, Testing & Commissioning, the following sizes of earthing strips or wires including providing all fixing accessories and effecting proper connections and as per final directions and approval of the Consultant. --Supplying and erecting Annealed bare copper wire of high purity of different sizes used for earthing on wall with necessary copper clamps fixed on	Kg	65.78		

	wall/cable/conduit with screws in an approved manner.				
<b>F</b>	<b>TELEPHONE NETWORKING</b>				
	<p><b>Note for Item No 142 to 148:</b></p> <p>a) The telephone conduiting shall be done through floors/chasing of walls on cable racks / GI supports, the cost of which shall not be paid separately.</p> <p>b) The telephone wiring shall conform to the manufacturer's requirements of wiring for Electronic Exchanges.</p> <p>c) All telephone wiring shall have end ferruling, numbering with proper tags at regular intervals of proper identifications.</p> <p>d) The work has to be carried out, after obtaining Prior approvals of all schemes.</p> <p>e) All materials to be used under the item rates shall be of approved brands/ makes only.</p> <p>f) The telephone point wiring shall include wiring from floor tag block outlet in existing floor race ways or using minimum 25 mm dia PVC Conduit of 1.8 mm wall thickness of any length. The positions shown presently are tentative and may change during actual execution. No claim on account of change in location of the tag block will be entertained by the owner. The Bidder is therefore advised to built in the rates such contingencies for meeting these eventualities.</p> <p>g) The entire work of the Telephone Point wiring may be split into two parts i.e. partially to be laid on GI angle brackets ceiling supported or through existing floor trunking. It is understood that the bidder while quoting the rates shall have deemed to have included all the costs of chasing the floors, removing the debris and redoing the flooring using cement mortar. All such costs shall not be separately paid and shall be deemed to have been included in the costs of the point wiring items.</p> <p>h) The number of telephone wires to be provided in 25 mm conduit shall be restricted to not more than 7 pairs and those in 37.5 mm GI pipes shall be restricted to not more than 12 pairs. If any higher size of GI conduits are used then the same shall be permitted after permission is granted to do so by the Architects. No separate rates shall be paid for use of higher diameter conduits and it will be deemed to have been included in the rate under telephone point wiring item.</p>				
142	Supply, Installation, Testing & Commissioning in G.I. powder coated enclosure, Telephone Tag Block KRONE Type only of the following number of ways including supply of 1 No., punching tool complete with interconnections for incoming and outgoing telephone cables including ferruling, testing the joints, including all frame works for mounting the tag block systems. --Supplying, erecting & commissioning Junction box suitable for 30 pairs as per specification No. WG-TW of PWD Specification.	No.	2.00		
143	Supply, Installation, Testing & Commissioning in G.I. powder coated enclosure, Telephone Tag Block KRONE Type only of the following number of ways including supply of 1 No., punching tool complete with interconnections for incoming and outgoing telephone cables including ferruling, testing the joints, including	No.	1.00		

	all frame works for mounting the tag block systems. --Supplying, erecting & commissioning Junction box suitable for 10 pairs as per specification No. WG-TW of PWD Specification.				
144	Supply, Installation, Testing & Commissioning in surface PVC insulated, PVC sheathed, armoured Jelly filled telephone armoured cables having minimum conductor cable size 0.51 dia tinned copper conductor of the following pairs complete with all fixing accessories such as G.I. saddles, G.I. screws, G.I. spacers /G.I. clamps etc. complete to above mentioned Krone Box. --Supplying & erecting telephone cable 30 pair with 0.5 mm dia. laid in provided PVC casing / conduit as per specification No. WG-TW of PWD Specification.	R.M	35.00		
145	Supply, Installation, Testing & Commissioning in surface PVC insulated, PVC sheathed, armoured Jelly filled telephone armoured cables having minimum conductor cable size 0.51 dia tinned copper conductor of the following pairs complete with all fixing accessories such as G.I. saddles, G.I. screws, G.I. spacers /G.I. clamps etc. complete to above mentioned Krone Box. --Supplying & erecting telephone cable 2 pair with 0.5 mm dia. laid in provided PVC casing / conduit as per specification No. WG-TW of PWD Specification.	R.M	160.00		
146	Supply, Installation, Testing & Commissioning in surface PVC insulated, PVC sheathed, armoured Jelly filled telephone armoured cables having minimum conductor cable size 0.51 dia tinned copper conductor of the following pairs complete with all fixing accessories such as G.I. saddles, G.I. screws, G.I. spacers /G.I. clamps etc. complete to above mentioned Krone Box. --Supplying & erecting telephone cable 10 pair with 0.5 mm dia. laid in provided PVC casing / conduit as per specification No. WG-TW of PWD Specification.	R.M	35.00		
147	Supply, Installation, Testing & Commissioning of RJ11 outlet containing faceplate with gangbox as required and as per final direction and approval of the Consultant/MDL.	Nos.	62.00		
148	Supply, Installation, Testing and Commissioning of Computer rack mounted type EPABX system having following configuration - 1 no. PIR incoming lines / 8 analog lines / outgoing 50 lines / Digital system with hybrid features / Caller on hold / Auto dialler / Incoming message or music / Connectivity to PA system / External music / Conference facility / System shall have Serial port and USB port inbuilt / etc. It should be supplied with necessary MDF.	No.	1.00		
<b>G</b>	<b>COMPUTER DATA CABLING</b>				
	<b>Note for item no 149 to 157:</b> a) The Computer data cabling shall be done through existing floor trunking. wherever the laying of the cables through the existing trunking is not possible the PVC conduits of minimum 25 mm dia and having 1.8 mm wall thickness are to be laid from the nearest trunking. b) The Computer data wiring shall confirm to the hardware supplier.				

	<p>c) All Computer data wiring shall have end ferruling, numbering with proper tags at regular intervals of proper identifications.</p> <p>d) The work has to be carried out, after obtaining Prior approvals of schemes.</p> <p>e) All materials to be used under the item rates shall be of approved brands/ makes only.</p> <p>f) The entire installation is to be certified/documentated by the Approved Vendor for guarantee. It is the responsibility of the Contractor to get the installation certified/documentated from Approved Vendor. No separate cost shall be paid by the Owner for getting the installation certified/documentated and approved from Approved Vendor</p>				
149	Supplying & installing UTP networking Cat-6 cable suitable for LAN /WAN Computer net-working as per specification No. WG-COC/NC of PWD Specification.	R.M	245.00		
150	Supplying, installing & testing UTP Connector (RJ-45) as per specification No. WG-NAS/UTPC of PWD Specification..	No.	45.00		
151	Supplying and fixing 24 port Patch Panel with tool-less keystone jacks in provided U Rack complete as per specification no. WGNAS/PP of PWD Specification.	No.	2.00		
152	Supplying and fixing 6U Wall Mount Rack (Dimension-DxWXH - 450X550X367 mm) as per specification in approved manner.	No.	1.00		
153	Supplying and fixing 3 meter length, UTP Patch cord of Cat 6 type in position as per specification No. WG-COC/PC of PWD Specification.	No.	2.00		
154	Supplying and fixing 1 meter length, UTP Patch cord of Cat 6 type in position as per specification No. WG-COC/PC of PWD Specification.	No.	45.00		
155	Supplying and erecting FR grade, PVC armoured multimode multimode Optical Fibre Cable with 6 fibres, with core dia 50/125 µm (OM3) suitable for 1 Gbps ethernet distance at 850 nm of wavelength, on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC LSZH of PWD Specification.	R.M.	1.00		
156	Supplying & erecting I.S.I. mark Rigid P.V.C. conduit 20 mm. dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC, para no. 1.2.1 of PWD Specification.	R.M.	25.00		
157	Supply, Installation, Testing & Commissioning at site of Giga Speed 8 Port Patch max Giga Speed Jack Panel of approved make all complete as required and as per final direction and approval of Consultant. <b>(Location Source server rack @ 4th floor)</b>	No.	1.00		
<b>H</b>	<b>INVERTER SYSTEM</b>				
158	Supplying, installing, testing & commissioning of 600 VA Digital pure sine wave inverter based on IGBT technology single phase 230V,50 Hz complete as per specification no. AP-INV (Without batteries)	No.	1.00		
159	Supplying and erecting 12 V/100AH TUBULAR Battery with battery terminal wire, duly charged complete with 36 months warranty complete.	No.	1.00		
160	Supplying and erecting of suitable size battery rack required for 12V / 100AH TUBULAR BATTERY.	No.	1.00		
<b>IV</b>	<b>Electrical Works for 4th Floor</b>				
<b>A</b>	<b>LIGHTING FIXTURES &amp; FANS</b>				

	<p><b>Note for item No 161 to 170:</b>  The rates for lighting fixtures and fans shall include all accessories and supply of all materials that may be required to make the fixture complete in all respects:  a) All the fixtures shall be suitable for single phase, 50 cycles, 240 Volts, AC supply system.  b) All light fixtures shall be provided with Electronic ballast having THD&lt;20% as described in the schedule.  c) All fixtures shall be factory wired with flexible FR copper conductor wires.  d) All fixtures shall be supplied with LED's of CCT as per architect approval and as called for in the item.  e) All the fixtures shall be quoted of approved make only.  f) All Indoor lights shall be of IP43.</p> <p>Supplying, Installation, Testing &amp; Commissioning at site, taking approval prior to procurement, fixing in position, testing and commissioning of following light fixtures with all accessories such as spring loaded side holders, Electronic ballast, CRCA housing etc. all complete with supply of approved Colour lamps/tubes/LED's of approved make all complete as required and as per final direction and approval of Consultant/MDL.</p>				
161	Supplying and erecting LED square / circular 13 to 15W downlighter having pressure die-cast aluminum housing, opal translucent cover, mounting arrangement with board for surface type or spring loaded mounting clips for flush type complete.	No	19.00		
162	Approved make <b>24W LED DOWNLIGHTER</b> , recessed in ceiling / surface mounted as per site conditions, with a colour rendering index of >70, lumen output of minimum 1550 lumens, CCT as per architects approval, electronic driver with dimming facility having THD<30%, Die cast aluminium housing & Opal frost high transmission PMMA diffuser, Frame in ABS, all complete with accessories, as required & as per directions & approval of consultant/MDL. <b>(IP43)</b> .	Nos	11.00		
163	Supplying and erecting square shaped CRCA /die-cast aluminium powder coated housing LED Panel light (slim edge-lit) 600X600mm suitable for 36 W-40W with provision for plane front frame with translucent cover fixed to the housing complete.	No	1.00		
164	Supplying and erecting CRCA /die-cast aluminium powder coated housing LED Panel light (slim edge-lit) square / round shape suitable for 19 to 24 W with provision for plane front frame with translucent cover fixed to the housing complete.	No	28.00		
165	Supplying and erecting LED square / circular 9 to 12W downlighter having pressure die-cast aluminium housing, opal translucent cover, mounting arrangement with board for surface type or spring loaded mounting clips for flush type complete.	No	4.00		
166	SITC of motion sensors for light & AC control inside the closed cabin of approved make.	No.	4.00		
167	SITC of LED Strip cove light - 4.8 W Per Metre	Mtrs.	50.00		
168	Supplying and erecting cabin fan of A.C. 230 V. 50 cycles 250 mm. / 300 mm. sweep complete with necessary brackets for fixing cabin fans, wire etc and	Nos.	5.00		

	marking Sr. No. and date of erection.				
169	SITC of battery operated call bell system with receiver unit with indicator & buzzing sound of approved make.	Nos.	5.00		
170	Providing and erecting air circulator 450 mm. sweep oscillating type, wall mounting 1440 RPM without speed regulator, overheat protection unit, totally enclosed, flame proof motor suitable for 230/250 Volts single phase, 50 cycles A.C. supply, with one metre of 3 core lead wire and with moisture proof treatment to winding and with 'E' class insulation and marking Sr. No. and date of erection.	Nos.	10.00		
<b>B</b>	<b>POINT WIRING &amp; CONDUITING WORK</b>				
	<p><b>Note for Item No 171 to 184:</b>  These notes shall apply to all the relevant wiring items described in the schedule of items given below :-  a) All points wiring, circuit wiring, sub mains wiring shall be done using rigid FR PVC CONDUITS as required, conduits of minimum 2 mm thickness and shall comply with IS 2509 of 1973 or amendments there of and FIA approval.  b) All switch boards under the point wiring shall be the standard boxes available and the same shall be suitable for concealed work/surface mounted work as per site. The boxes should be of Electro Zinc Plated/pvc as per the Manufactures standard practice as per site and should be suitable to accommodate number of control switches fan regulators, sockets, etc. as indicated in drawings.  c) The Sub Main wiring shall have continuous 2.5 sq.mm. wire of approved make. FR Copper conductor earth wire for earth continuity having Green colour in 660/1100 volts grade.  d) The point wiring shall comply to IS 732.  e) All materials under this schedule shall deemed to be included by the Contractor in his scope.  f) The entire work of the point wiring may be split into two parts i.e. partially to be laid on MS angle brackets ceiling supported or through existing floorings. It is understood that the bidder have included all the costs towards chasing the floors, removing the debris and redoing the flooring using cement mortar. All such costs shall be deemed to have been included.</p>				
171	Supplying & erecting mains with 2x2.5 sq.mm.and earth wire 1.5 sq.mm FR PVC copper wire, in rigid PVC conduit min.20mm dia, as per specification No: WG-MA/PC, para no. 1.4.1 of PWD Specification.	R.Mtr.	610.00		
172	Point wiring for light/fan/bell in 20 mm rigid PVC conduit with 1.0 sq.mm FR grade Copper wire with flush type switch and required accessories as per specification No: WG-PW/SW of PWD Specification.	Point	32.00		
173	Supplying and drawing of 2x1.5 sq.mm. FR grade copper wires with 1.5 sqmm earthwire in provided concealed pipes and terminating on moduler accessories in box for point wiring for independent plug as per specification No WG-PW/SW of PWD Specification.	R.Mtr.	55.00		
174	Supplying and erecting modular type switch 6A / 10A ISI mark approved make duly erected on provided plate	Nos	29.00		



	and box with wiring connections complete.				
175	Supplying and erecting Modular type 5 pin socket with safety shutters 3 module socket 6A. 240V AC supply, ISI approved and marked make duly erected on provided plate and box with wiring connections complete duly erected in approved manner.	Nos	29.00		
176	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 4 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background in an approved manner.	Nos	29.00		
177	Supplying & erecting mains 2x1.5 sq.mm.and earth wire 1.5 sq.mm FR PVC copper wire, in rigid PVC conduit min.20mm dia, as per specification No: WG-MA/PC, para no. 1.4.1 of PWD Specification.	R.Mtr.	100.00		
178	Supplying and erecting ISI mark flush type shockproof plug socket 6 pin 6A and 16A with switch 16A combined unit erected on Filled polypropylene ISI marked (IS:14772-2000) board or double wooden block / 3mm thick hylam sheet / 4mm thickplywood pasted with 1.5 mm thick sunmica with S M screws and duly connected.	Nos	10.00		
179	SITC of 2 nos. 6 Amps.Multistandard type Socket outlet with 16 Amps.single pole modular type switch for Workstation and necessary face plate and GI back box with interconnections all complete as required and as per final approval of the Consultant/MDL.	Nos	35.00		
180	SITC of 6 Amps.Multistandard type Socket outlet with 6 Amps.single pole modular type switch and necessary face plate and GI back box with interconnections all complete as required and as per final approval of the Consultant/MDL.	Nos	55.00		
181	SITC of 3 nos. 6 Amps.Multistandard type Socket outlet with 16 Amps.single pole modular type switch for <b>TV point</b> and necessary face plate and GI back box with interconnections all complete as required and as per final approval of the Consultant.	Nos	4.00		
182	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 25 mm with accessories on wall/ceiling as per specification No: WG-MA/CON of PWD Specification.	R.Mtr.	75.00		
183	Supplying and erecting UPVC reinforced flexible conduit 20 mm in dia. conforming to I.S. and approved make with required number of couplings, PVC bushes, check nuts etc. complete.	R.Mtr.	50.00		
184	Supplying and erecting PVC box trunking of size 50x50 mm. with accessories on wall/ceiling as per specification No: WG-MA/BOX, para no. 1.1.2 of PWD Specification.	R.Mtr.	50.00		
<b>C</b>	<b>CABLES AND CABLE TRAYS</b>				
	<b>Notes for Item No 185 to 189 :-</b> The rates for all item of work shall include : a) Effecting proper and adequate connections at terminations. b) Ensuring that provision is left in building components and trenches as the work proceeds for incorporation of cable supports at a later date. c) Providing all fixing accessories such as clamping devices, nuts and bolts, screws where laid in trenches.				

	<p>d) Providing proper supports for cable terminal boxes as called for.</p> <p>e) Providing heavy duty copper lugs, insulation tape etc. at joints and terminations as called for.</p> <p>f) All fixing accessories such as GI saddles, screws, rawal plugs, suitable size Anchor Fasteners etc.</p> <p>g) Jointing by crimping type lugs.</p> <p>h) Cutting chases, holes and making good the same wherever required.</p> <p>i) Providing GI angle iron supports in the wherever required and fabricated using 50 x 50 x 6 mm GI Angle iron frame work along with 25 x 6 mm GI flats along with anti rust painting and final coats of painting.</p> <p>j) All items listed in the BOQ shall be of approved make only as per tender. Any unspecified item shall be as per approval of consultant.</p> <p>k) Vendor to verify actual quantity as per site conditions before procurement.</p>				
185	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 300 mm width & 75 mm height complete with necessary coupler plates & hardware in approved manner.	R. Mtr	35.00		
186	Supply, Installation, Testing & Commissioning with suitable angle iron supports GI perforated cable trays bolted type and fabricated using minimum 14 gauge CRCA sheet and maximum width of <b>450 mm</b> & height of 75 mm. Further the rate shall also include supporting of these trays from ceiling/ground using minimum 10mm fully threaded GI Rods/MS angles painted using 2 coats of red oxide and 2 coats of primer, all complete as required and as per final directions and final approval of the Consultant.	R. Mtr	15.00		
187	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 200 mm width & 75 mm height complete with necessary coupler plates & hardware in approved manner.	R. Mtr	50.00		
188	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 150 mm width & 75 mm height complete with necessary coupler plates & hardware in approved manner.	R. Mtr	70.00		
189	Suppling & laying Rigid PVC conduit 25 mm Dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC, para no. 1.2.1 of PWD Specification.	R. Mtr	1450.00		
<b>D</b>	<b>EARTHING</b>				
	<p><b>Note for Item No 190:</b></p> <p>a) All earth pits installation &amp; testing shall be as per IS 3043 with latest amendments.</p> <p>b) Earthing stations should contain relevant grade of charcoal/coke and salt packed around the earth plate/earth pipe as called for in the item.</p> <p>c) Earthing shall be done at indicated location by the Consultants. The minimum distance between the two earth station shall be 3 meters and that from the building is 2500 mm.</p> <p>d) An earth ring with relevant earth test terminal boxes shall to be provided at regular intervals.</p>				

	<p>e) Adequate number of earth strips with proper sized holes shall be provided for extending earthing/looping earth connections at various floors shall be provided and executed as per the requirement.</p> <p>f) The Contractor has to provide heavy duty Cover of size 450 x 450 x 8 mm thick to the Earthing Chamber. The cover is to be sand blasted and then Powder coated using Matt Jet Black Colour. The Cover is to be fabricated using 8 mm thick Chequered Plate.</p> <p>g) As per IS 3043, The value for earth resistance shall be 5 Ohms.</p>				
190	<p>Supply, Installation, Testing &amp; Commissioning, the following sizes of earthing strips or wires including providing all fixing accessories and effecting proper connections and as per final directions and approval of the Consultant.</p> <p>--Supplying and erecting Annealed bare copper wire of high purity of different sizes used for earthing on wall with necessary copper clamps fixed on wall/cable/conduit with screws in an approved manner.</p>	Kg	78.93		
<b>E</b>	<b>TELEPHONE NETWORKING</b>				
	<p><b>Note for Item No 191 to 196:</b></p> <p>a) The telephone conduiting shall be done through floors/chasing of walls on cable racks / GI supports, the cost of which shall not be paid separately.</p> <p>b) The telephone wiring shall conform to the manufacturer's requirements of wiring for Electronic Exchanges.</p> <p>c) All telephone wiring shall have end ferruling, numbering with proper tags at regular intervals of proper identifications.</p> <p>d) The work has to be carried out, after obtaining Prior approvals of all schemes.</p> <p>e) All materials to be used under the item rates shall be of approved brands/ makes only.</p> <p>f) The telephone point wiring shall include wiring from floor tag block outlet in existing floor race ways or using minimum 25 mm dia PVC Conduit of 1.8 mm wall thickness of any length. The positions shown presently are tentative and may change during actual execution. No claim on account of change in location of the tag block will be entertained by the owner. The Bidder is therefore advised to built in the rates such contingencies for meeting these eventualities.</p> <p>g) The entire work of the Telephone Point wiring may be split into two parts i.e. partially to be laid on GI angle brackets ceiling supported or through existing floor trunking. It is understood that the bidder while quoting the rates shall have deemed to have included all the costs of chasing the floors, removing the debris and redoing the flooring using cement mortar. All such costs shall not be separately paid and shall be deemed to have been included in the costs of the point wiring items.</p> <p>h) The number of telephone wires to be provided in 25 mm conduit shall be restricted to not more than 7 pairs and those in 37.5 mm GI pipes shall be restricted to not more than 12 pairs. If any higher size of GI conduits are used then the same shall be permitted after permission is granted to do so by the Architects.</p>				

	No separate rates shall be paid for use of higher diameter conduits and it will be deemed to have been included in the rate under telephone point wiring item.				
191	Supply, Installation, Testing & Commissioning in G.I. powder coated enclosure, Telephone Tag Block KRONE Type only of the following number of ways including supply of 1 No., punching tool complete with interconnections for incoming and outgoing telephone cables including ferruling, testing the joints, including all frame works for mounting the tag block systems. --Supplying, erecting & commissioning Junction box suitable for 30 pairs as per specification No. WG-TW of PWD Specification.	No.	2.00		
192	Supply, Installation, Testing & Commissioning in G.I. powder coated enclosure, Telephone Tag Block KRONE Type only of the following number of ways including supply of 1 No., punching tool complete with interconnections for incoming and outgoing telephone cables including ferruling, testing the joints, including all frame works for mounting the tag block systems. --Supplying, erecting & commissioning Junction box suitable for 20 pairs as per specification No. WG-TW of PWD Specification.	No.	1.00		
193	Supply, Installation, Testing & Commissioning in surface PVC insulated, PVC sheathed, armoured Jelly filled telephone armoured cables having minimum conductor cable size 0.51 dia tinned copper conductor of the following pairs complete with all fixing accessories such as G.I. saddles, G.I. screws, G.I. spacers /G.I. clamps etc. complete to above mentioned Krone Box. --Supplying & erecting telephone cable 20 pair with 0.5 mm dia. laid in provided PVC casing / conduit as per specification No. WG-TW of PWD Specification.	R.M	55.00		
194	Supply, Installation, Testing & Commissioning in surface PVC insulated, PVC sheathed, armoured Jelly filled telephone armoured cables having minimum conductor cable size 0.51 dia tinned copper conductor of the following pairs complete with all fixing accessories such as G.I. saddles, G.I. screws, G.I. spacers /G.I. clamps etc. complete to above mentioned Krone Box. --Supplying & erecting telephone cable 2 pair with 0.5 mm dia. laid in provided PVC casing / conduit as per specification No. WG-TW of PWD Specification.	R.M	205.00		
195	Supply, Installation, Testing & Commissioning in surface PVC insulated, PVC sheathed, armoured Jelly filled telephone armoured cables having minimum conductor cable size 0.51 dia tinned copper conductor of the following pairs complete with all fixing accessories such as G.I. saddles, G.I. screws, G.I. spacers /G.I. clamps etc. complete to above mentioned Krone Box. --30 Pair, PVC sheathed armoured telephone cables.	R.M	55.00		
196	Supply, Installation, Testing & Commissioning of RJ11 outlet containing faceplate with gangbox as required and as per final direction and approval of the Consultant/MDL.	No.	71.00		
<b>F</b>	<b>COMPUTER DATA CABLING</b>				

	<p><b>Note for item no 197 to 204:</b></p> <p>a) The Computer data cabling shall be done through existing floor trunking, wherever the laying of the cables through the existing trunking is not possible the PVC conduits of minimum 25 mm dia and having 1.8 mm wall thickness are to be laid from the nearest trunking.</p> <p>b) The Computer data wiring shall confirm to the hardware supplier.</p> <p>c) All Computer data wiring shall have end ferruling, numbering with proper tags at regular intervals of proper identifications.</p> <p>d) The work has to be carried out, after obtaining Prior approvals of schemes.</p> <p>e) All materials to be used under the item rates shall be of approved brands/ makes only.</p> <p>f) The entire installation is to be certified/documentated by the Approved Vendor for guarantee. It is the responsibility of the Contractor to get the installation certified/documentated from Approved Vendor. No separate cost shall be paid by the Owner for getting the installation certified/documentated and approved from Approved Vendor</p>				
197	Supplying & installing UTP networking Cat-6 cable suitable for LAN / WAN Computer net-working as per specification No. WG-COC/NC of PWD Specification.	R.M	225.00		
198	Supplying, installing & testing UTP Connector (RJ-45) as per specification No. WG-NAS/UTPC of PWD Specification..	No.	41.00		
199	Supplying and fixing 24 port Patch Panel with tool-less keystone jacks in provided U Rack complete as per specification no. WGNAS/PP of PWD Specification.	No.	2.00		
200	Supplying and fixing 6U Wall Mount Rack (Dimension-DxWXH - 450X550X367 mm) as per specification in approved manner.	No.	1.00		
201	Supplying and fixing 3 meter length, UTP Patch cord of Cat 6 type in position as per specification No. WG-COC/PC of PWD Specification.	No.	2.00		
202	Supplying and fixing 1 meter length, UTP Patch cord of Cat 6 type in position as per specification No. WG-COC/PC of PWD Specification.	No.	41.00		
203	Supplying and erecting FR grade, PVC armoured multimode armoured multimode Optical Fibre Cable with 6 fibres, with core dia 50/125 µm (OM3) suitable for 1 GBps ethernet distance at 850 nm of wavelength, on wall/ceiling or laid in provided pipe/trench as per specification No.WG-COC/OFC LSZH of PWD Specification.	R.M.	75.00		
204	Supplying & erecting I.S.I. mark Rigid P.V.C. conduit 20 mm. dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC, para no. 1.2.1 of PWD Specification.	R.M.	75.00		
<b>G</b>	<b>INVERTER SYSTEM</b>				
205	Supplying, installing, testing & commissioning of 600 VA Digital pure sine wave inverter based on IGBT technology single phase 230V,50 Hz complete as per specification no. AP-INV (Without batteries)	No.	1.00		
206	Supplying and erecting 12 V/100AH TUBULAR Battery	No.	1.00		

	with battery terminal wire, duly charged complete with 36 months warranty complete.				
207	Supplying and erecting of suitable size battery rack required for 12V / 100AH TUBULAR BATTERY.	No.	1.00		
<b>V</b>	<b>Electrical Works for 5th Floor</b>				
<b>A</b>	<b>LIGHTING FIXTURES &amp; FANS</b>				
	<p><b>Note for item No 208 to 217:</b>  The rates for lighting fixtures and fans shall include all accessories and supply of all materials that may be required to make the fixture complete in all respects:  a) All the fixtures shall be suitable for single phase, 50 cycles, 240 Volts, AC supply system.  b) All light fixtures shall be provided with Electronic ballast having THD&lt;20% as described in the schedule.  c) All fixtures shall be factory wired with flexible FR copper conductor wires.  d) All fixtures shall be supplied with LED's of CCT as per architect approval and as called for in the item.  e) All the fixtures shall be quoted of approved make only.  f) All Indoor lights shall be of IP43.</p> <p>Supplying, Installation, Testing &amp; Commissioning at site, taking approval prior to procurement, fixing in position, testing and commissioning of following light fixtures with all accessories such as spring loaded side holders, Electronic ballast, CRCA housing etc. all complete with supply of approved Colour lamps/tubes/LED's of approved make all complete as required and as per final direction and approval of Consultant.</p>				
208	Supplying and erecting LED square / circular 13 to 15W downlighter having pressure die-cast aluminum housing, opal translucent cover, mounting arrangement with board for surface type or spring loaded mounting clips for flush type complete.	No	19.00		
209	Approved make <b>24W LED DOWNLIGHTER</b> , recessed in ceiling / surface mounted as per site conditions, with a colour rendering index of >70, lumen output of minimum 1550 lumens, CCT as per architects approval, electronic driver with dimming facility having THD<30%, Die cast aluminium housing & Opal frost high transmission PMMA diffuser, Frame in ABS, all complete with accessories, as required & as per directions & approval of consultant. <b>(IP43)</b> .	No	11.00		
210	Supplying and erecting square shaped CRCA /die-cast aluminium powder coated housing LED Panel light (slim edge-lit) 600X600mm suitable for 36 W-40W with provision for plane front frame with translucent cover fixed to the housing complete.	No	1.00		
211	Supplying and erecting CRCA /die-cast aluminium powder coated housing LED Panel light (slim edge-lit) square / round shape suitable for 19 to 24 W with provision for plane front frame with translucent cover fixed to the housing complete.	No	28.00		
212	Supplying and erecting LED square / circular 9 to 12W downlighter having pressure die-cast aluminium housing, opal translucent cover, mounting	No	4.00		

	arrangement with board for surface type or spring loaded mounting clips for flush type complete.				
213	SITC of motion sensors for light & AC control inside the closed cabin of approved make.	No.	4.00		
214	SITC of LED Strip cove light - 4.8 W Per Metre	Mtrs.	50.00		
215	Supplying and erecting cabin fan of A.C. 230 V. 50 cycles 250 mm. / 300 mm. sweep complete with necessary brackets for fixing cabin fans, wire etc and marking Sr. No. and date of erection.	Nos.	5.00		
216	SITC of battery operated call bell system with receiver unit with indicator & buzzing sound of approved make.	Nos.	5.00		
217	Providing and erecting air circulator 450 mm. sweep oscillating type, wall mounting 1440 RPM without speed regulator, overheat protection unit, totally enclosed, flame proof motor suitable for 230/250 Volts single phase, 50 cycles A.C. supply, with one metre of 3 core lead wire and with moisture proof treatment to winding and with 'E' class insulation and marking Sr. No. and date of erection.	Nos.	10.00		
<b>B</b>	<b>POINT WIRING &amp; CONDUITING WORK</b>				
	<p><b>Note for Item No 218 to 231:</b>  These notes shall apply to all the relevant wiring items described in the schedule of items given below :-  a) All points wiring, circuit wiring, sub mains wiring shall be done using rigid FR PVC CONDUITS as required, conduits of minimum 2 mm thickness and shall comply with IS 2509 of 1973 or amendments there of and FIA approval.  b) All switch boards under the point wiring shall be the standard boxes available and the same shall be suitable for concealed work/surface mounted work as per site. The boxes should be of Electro Zinc Plated/pvc as per the Manufactures standard practice as per site and should be suitable to accommodate number of control switches fan regulators, sockets, etc. as indicated in drawings.  c) The Sub Main wiring shall have continuous 2.5 sq.mm. wire of approved make. FR Copper conductor earth wire for earth continuity having Green colour in 660/1100 volts grade.  d) The point wiring shall comply to IS 732.  e) All materials under this schedule shall deemed to be included by the Contractor in his scope.  f) The entire work of the point wiring may be split into two parts i.e. partially to be laid on MS angle brackets ceiling supported or through existing floorings. It is understood that the bidder have included all the costs towards chasing the floors, removing the debris and redoing the flooring using cement mortar. All such costs shall be deemed to have been included.</p>				
218	Supplying & erecting mains with 2x2.5 sq.mm. and earth wire 1.5 sq.mm FR PVC copper wire, in rigid PVC conduit min.20mm dia, as per specification No: WG-MA/PC, para no. 1.4.1 of PWD Specification.	R.Mtr.	610.00		
219	Point wiring for light/fan/bell in 20 mm rigid PVC conduit with 1.0 sq.mm FR grade Copper wire with flush type switch and required accessories as per specification No: WG-PW/SW of PWD Specification.	Point	32.00		
220	Supplying and drawing of 2x1.5 sq.mm. FR grade copper wires with 1.5 sqmm earthwire in provided	R.Mtr.	55.00		

	concealed pipes and terminating on modular accessories in box for point wiring for independent plug as per specification No WG-PW/SW of PWD Specification.				
221	Supplying and erecting modular type switch 6A / 10A ISI mark approved make duly erected on provided plate and box with wiring connections complete.	Nos	29.00		
222	Supplying and erecting Modular type 5 pin socket with safety shutters 3 module socket 6A. 240V AC supply, ISI approved and marked make duly erected on provided plate and box with wiring connections complete duly erected in approved manner.	Nos	29.00		
223	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 4 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background in an approved manner.	Nos	29.00		
224	Supplying & erecting mains 2x1.5 sq.mm.and earth wire 1.5 sq.mm FR PVC copper wire, in rigid PVC conduit min.20mm dia, as per specification No: WG-MA/PC, para no. 1.4.1 of PWD Specification.	R.Mtr.	100.00		
225	Supplying and erecting ISI mark flush type shockproof plug socket 6 pin 6A and 16A with switch 16A combined unit erected on Filled polypropylene ISI marked (IS:14772-2000) board or double wooden block / 3mm thick hylam sheet / 4mm thickplywood pasted with 1.5 mm thick sunmica with S M screws and duly connected.	Nos	10.00		
226	SITC of 2 nos. 6 Amps.Multistandard type Socket outlet with 16 Amps.single pole modular type switch for Workstation and necessary face plate and GI back box with interconnections all complete as required and as per final approval of the Consultant/MDL.	Nos	35.00		
227	SITC of 6 Amps.Multistandard type Socket outlet with 6 Amps.single pole modular type switch and necessary face plate and GI back box with interconnections all complete as required and as per final approval of the Consultant/MDL.	Nos	55.00		
228	SITC of 3 nos. 6 Amps.Multistandard type Socket outlet with 16 Amps.single pole modular type switch for <b>TV point</b> and necessary face plate and GI back box with interconnections all complete as required and as per final approval of the Consultant.	Nos	4.00		
229	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 25 mm with accessories on wall/ceiling as per specification No: WG-MA/CON of PWD Specification.	R.Mtr.	75.00		
230	Supplying and erecting UPVC reinforced flexible conduit 20 mm in dia. conforming to I.S. and approved make with required number of couplings, PVC bushes, check nuts etc. complete.	R.Mtr.	50.00		
231	Supplying and erecting PVC box trunking of size 50x50 mm. with accessories on wall/ceiling as per specification No: WG-MA/BOX, para no. 1.1.2 of PWD Specification.	R.Mtr.	50.00		
<b>C</b>	<b>CABLES AND CABLE TRAYS</b>				
	<b>Notes for Item No 232 to 236 :-</b> The rates for all item of work shall include : a) Effecting proper and adequate connections at				



	<p>terminations.</p> <p>b) Ensuring that provision is left in building components and trenches as the work proceeds for incorporation of cable supports at a later date.</p> <p>c) Providing all fixing accessories such as clamping devices, nuts and bolts, screws where laid in trenches.</p> <p>d) Providing proper supports for cable terminal boxes as called for.</p> <p>e) Providing heavy duty copper lugs, insulation tape etc. at joints and terminations as called for.</p> <p>f) All fixing accessories such as GI saddles, screws, rawal plugs, suitable size Anchor Fasteners etc.</p> <p>g) Jointing by crimping type lugs.</p> <p>h) Cutting chases, holes and making good the same wherever required.</p> <p>i) Providing GI angle iron supports in the wherever required and fabricated using 50 x 50 x 6 mm GI Angle iron frame work along with 25 x 6 mm GI flats along with anti rust painting and final coats of painting.</p> <p>j) All items listed in the BOQ shall be of approved make only as per tender. Any unspecified item shall be as per approval of consultant.</p> <p>k) Vendor to verify actual quantity as per site conditions before procurement.</p>				
232	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 300 mm width & 75 mm height complete with necessary coupler plates & hardware in approved manner.	R. Mtr	35.00		
233	Supply, Installation, Testing & Commissioning with suitable angle iron supports GI perforated cable trays bolted type and fabricated using minimum 14 gauge CRCA sheet and maximum width of <b>450 mm</b> & height of 75 mm. Further the rate shall also include supporting of these trays from ceiling/ground using minimum 10mm fully threaded GI Rods/MS angles painted using 2 coats of red oxide and 2 coats of primer, all complete as required and as per final directions and final approval of the Consultant.	R. Mtr	15.00		
234	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 200 mm width & 75 mm height complete with necessary coupler plates & hardware in approved manner.	R. Mtr	50.00		
235	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 150 mm width & 75 mm height complete with necessary coupler plates & hardware in approved manner.	R. Mtr	70.00		
236	Suppling & laying Rigid PVC conduit 25 mm Dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC, para no. 1.2.1 of PWD Specification.	R. Mtr	1450.00		
<b>D</b>	<b>EARTHING</b>				
	<p><b>Note for Item No 237:</b></p> <p>a) All earth pits installation &amp; testing shall be as per IS 3043 with latest amendments.</p> <p>b) Earthing stations should contain relevant grade of charcoal/coke and salt packed around the earth plate/earth pipe as called for in the item.</p>				

	<p>c) Earthing shall be done at indicated location by the Consultants. The minimum distance between the two earth station shall be 3 meters and that from the building is 2500 mm.</p> <p>d) An earth ring with relevant earth test terminal boxes shall to be provided at regular intervals.</p> <p>e) Adequate number of earth strips with proper sized holes shall be provided for extending earthing/looping earth connections at various floors shall be provided and executed as per the requirement.</p> <p>f) The Contractor has to provide heavy duty Cover of size 450 x 450 x 8 mm thick to the Earthing Chamber. The cover is to be sand blasted and then Powder coated using Matt Jet Black Colour. The Cover is to be fabricated using 8 mm thick Chequered Plate.</p> <p>g) As per IS 3043, The value for earth resistance shall be 5 Ohms.</p>				
237	<p>Supply, Installation, Testing &amp; Commissioning, the following sizes of earthing strips or wires including providing all fixing accessories and effecting proper connections and as per final directions and approval of the Consultant.</p> <p>--Supplying and erecting Annealed bare copper wire of high purity of different sizes used for earthing on wall with necessary copper clamps fixed on wall/cable/conduit with screws in an approved manner.</p>	Kg	78.93		
<b>E</b>	<b>TELEPHONE NETWORKING</b>				
	<p><b>Note for Item No 238 to 243:</b></p> <p>a) The telephone conduiting shall be done through floors/chasing of walls on cable racks / GI supports, the cost of which shall not be paid separately.</p> <p>b) The telephone wiring shall conform to the manufacturer's requirements of wiring for Electronic Exchanges.</p> <p>c) All telephone wiring shall have end ferruling, numbering with proper tags at regular intervals of proper identifications.</p> <p>d) The work has to be carried out, after obtaining Prior approvals of all schemes.</p> <p>e) All materials to be used under the item rates shall be of approved brands/ makes only.</p> <p>f) The telephone point wiring shall include wiring from floor tag block outlet in existing floor race ways or using minimum 25 mm dia PVC Conduit of 1.8 mm wall thickness of any length. The positions shown presently are tentative and may change during actual execution. No claim on account of change in location of the tag block will be entertained by the owner. The Bidder is therefore advised to built in the rates such contingencies for meeting these eventualities.</p> <p>g) The entire work of the Telephone Point wiring may be split into two parts i.e. partially to be laid on GI angle brackets ceiling supported or through existing floor trunking. It is understood that the bidder while quoting the rates shall have deemed to have included all the costs of chasing the floors, removing the debris and redoing the flooring using cement mortar. All such costs shall not be separately paid and shall be deemed to have been included in the costs of the point wiring items.</p>				

	h) The number of telephone wires to be provided in 25 mm conduit shall be restricted to not more than 7 pairs and those in 37.5 mm GI pipes shall be restricted to not more than 12 pairs. If any higher size of GI conduits are used then the same shall be permitted after permission is granted to do so by the Architects. No separate rates shall be paid for use of higher diameter conduits and it will be deemed to have been included in the rate under telephone point wiring item.				
238	Supply, Installation, Testing & Commissioning in G.I. powder coated enclosure, Telephone Tag Block KRONE Type only of the following number of ways including supply of 1 No., punching tool complete with interconnections for incoming and outgoing telephone cables including ferruling, testing the joints, including all frame works for mounting the tag block systems. --Supplying, erecting & commissioning Junction box suitable for 30 pairs as per specification No. WG-TW of PWD Specification.	No.	2.00		
239	Supply, Installation, Testing & Commissioning in G.I. powder coated enclosure, Telephone Tag Block KRONE Type only of the following number of ways including supply of 1 No., punching tool complete with interconnections for incoming and outgoing telephone cables including ferruling, testing the joints, including all frame works for mounting the tag block systems. --Supplying, erecting & commissioning Junction box suitable for 20 pairs as per specification No. WG-TW of PWD Specification.	No.	1.00		
240	Supply, Installation, Testing & Commissioning in surface PVC insulated, PVC sheathed, armoured Jelly filled telephone armoured cables having minimum conductor cable size 0.51 dia tinned copper conductor of the following pairs complete with all fixing accessories such as G.I. saddles, G.I. screws, G.I. spacers /G.I. clamps etc. complete to above mentioned Krone Box. --Supplying & erecting telephone cable 20 pair with 0.5 mm dia. laid in provided PVC casing / conduit as per specification No. WG-TW of PWD Specification.	R.M	55.00		
241	Supply, Installation, Testing & Commissioning in surface PVC insulated, PVC sheathed, armoured Jelly filled telephone armoured cables having minimum conductor cable size 0.51 dia tinned copper conductor of the following pairs complete with all fixing accessories such as G.I. saddles, G.I. screws, G.I. spacers /G.I. clamps etc. complete to above mentioned Krone Box. --Supplying & erecting telephone cable 2 pair with 0.5 mm dia. laid in provided PVC casing / conduit as per specification No. WG-TW of PWD Specification.	R.M	205.00		
242	Supply, Installation, Testing & Commissioning in surface PVC insulated, PVC sheathed, armoured Jelly filled telephone armoured cables having minimum conductor cable size 0.51 dia tinned copper conductor of the following pairs complete with all fixing accessories such as G.I. saddles, G.I. screws, G.I. spacers /G.I. clamps etc. complete to above mentioned	R.M	55.00		

	Krone --30 Pair, PVC sheathed armoured telephone cables. Box.				
243	Supply, Installation, Testing & Commissioning of RJ11 outlet containing faceplate with gangbox as required and as per final direction and approval of the Consultant.	No.	71.00		
<b>F</b>	<b>COMPUTER DATA CABLING</b>				
	<b>Note for item no 244 to 251:</b> a) The Computer data cabling shall be done through existing floor trunking. wherever the laying of the cables through the existing trunking is not possible the PVC conduits of minimum 25 mm dia and having 1.8 mm wall thickness are to be laid from the nearest trunking. b) The Computer data wiring shall confirm to the hardware supplier. c) All Computer data wiring shall have end ferruling, numbering with proper tags at regular intervals of proper identifications. d) The work has to be carried out, after obtaining Prior approvals of schemes. e) All materials to be used under the item rates shall be of approved brands/ makes only. f) The entire installation is to be certified/documentated by the Approved Vendor for guarantee. It is the responsibility of the Contractor to get the installation certified/documentated from Approved Vendor. No separate cost shall be paid by the Owner for getting the installation certified/documentated and approved from Approved Vendor				
244	Supplying & installing UTP networking Cat-6 cable suitable for LAN / WAN Computer net-working as per specification No. WG-COC/NC of PWD Specification.	R.M	245.00		
245	Supplying, installing & testing UTP Connector (RJ-45) as per specification No. WG-NAS/UTPC of PWD Specification.	No.	41.00		
246	Supplying and fixing 24 port Patch Panel with tool-less keystone jacks in provided U Rack complete as per specification no. WGNAS/PP of PWD Specification.	No.	2.00		
247	Supplying and fixing 6U Wall Mount Rack (Dimension-DxWXH - 450X550X367 mm) as per specification in approved manner.	No.	1.00		
248	Supplying and fixing 3 meter length, UTP Patch cord of Cat 6 type in position as per specification No. WG-COC/PC of PWD Specification.	No.	2.00		
249	Supplying and fixing 1 meter length, UTP Patch cord of Cat 6 type in position as per specification No. WG-COC/PC of PWD Specification.	No.	41.00		
250	Supplying and erecting FR grade, PVC armoured multimode armoured multimode Optical Fibre Cable with 6 fibres, with core dia 50/125 µm (OM3) suitable for 1 GBps ethernet distance at 850 nm of wavelength, on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC LSZH of PWD Specification.	R.M.	1.00		
251	Supplying & erecting I.S.I. mark Rigid P.V.C. conduit 20 mm. dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC, para no. 1.2.1 of PWD Specification.	R.M.	25.00		
<b>G</b>	<b>INVERTER SYSTEM</b>				

252	Supplying, installing, testing & commissioning of 600 VA Digital pure sine wave inverter based on IGBT technology single phase 230V,50 Hz complete as per specification no. AP-INV (Without batteries)	No.	1.00		
253	Supplying and erecting 12 V/100AH TUBULAR Battery with battery terminal wire, duly charged complete with 36 months warranty complete.	No.	1.00		
254	Supplying and erecting of suitable size battery rack required for 12V / 100AH TUBULAR BATTERY.	No.	1.00		
<b>VI</b>	<b>Electrical Works for 6th Floor</b>				
<b>A</b>	<b>LIGHTING FIXTURES &amp; FANS</b>				
	<p><b>Note for item No 255 to 264:</b>  The rates for lighting fixtures and fans shall include all accessories and supply of all materials that may be required to make the fixture complete in all respects:  a) All the fixtures shall be suitable for single phase, 50 cycles, 240 Volts, AC supply system.  b) All light fixtures shall be provided with Electronic ballast having THD&lt;20% as described in the schedule.  c) All fixtures shall be factory wired with flexible FR copper conductor wires.  d) All fixtures shall be supplied with LED's of CCT as per architect approval and as called for in the item.  e) All the fixtures shall be quoted of approved make only.  f) All Indoor lights shall be of IP43.</p> <p>Supplying, Installation, Testing &amp; Commissioning at site, taking approval prior to procurement, fixing in position, testing and commissioning of following light fixtures with all accessories such as spring loaded side holders, Electronic ballast, CRCA housing etc. all complete with supply of approved Colour lamps/tubes/LED's of approved make all complete as required and as per final direction and approval of Consultant.</p>				
255	Supplying and erecting LED square / circular 13 to 15W downlighter having pressure die-cast aluminum housing, opal translucent cover, mounting arrangement with board for surface type or spring loaded mounting clips for flush type complete.	No	26.00		
256	Approved make <b>24W LED DOWNLIGHTER</b> , recessed in ceiling / surface mounted as per site conditions, with a colour rendering index of >70, lumen output of minimum 1550 lumens, CCT as per architects approval, electronic driver with dimming facility having THD<30%, Die cast aluminium housing & Opal frost high transmission PMMA diffuser, Frame in ABS, all complete with accessories, as required & as per directions & approval of consultant. <b>(IP43)</b> .	No	13.00		
257	Supplying and erecting square shaped CRCA /die-cast aluminium powder coated housing LED Panel light (slim edge-lit) 600X600mm suitable for 36 W-40W with provision for plane front frame with translucent cover fixed to the housing complete.	No	1.00		
258	Supplying and erecting CRCA /die-cast aluminium powder coated housing LED Panel light (slim edge-lit) square / round shape suitable for 19 to 24 W with provision for plane front frame with translucent cover fixed to the housing complete.	No	27.00		

259	Supplying and erecting LED square / circular 9 to 12W downlighter having pressure die-cast aluminium housing, opal translucent cover, mounting arrangement with board for surface type or spring loaded mounting clips for flush type complete.	No	1.00		
260	SITC of motion sensors for light & AC control inside the closed cabin of approved make.	No.	5.00		
261	SITC of LED Strip cove light - 4.8 W Per Metre	Mtrs.	40.00		
262	Supplying and erecting cabin fan of A.C. 230 V. 50 cycles 250 mm. / 300 mm. sweep complete with necessary brackets for fixing cabin fans, wire etc and marking Sr. No. and date of erection.	Nos.	5.00		
263	SITC of battery operated call bell system with receiver unit with indicator & buzzing sound of approved make.	Nos.	6.00		
264	Providing and erecting air circulator 450 mm. sweep oscillating type, wall mounting 1440 RPM without speed regulator, overheat protection unit, totally enclosed, flame proof motor suitable for 230/250 Volts single phase, 50 cycles A.C. supply, with one metre of 3 core lead wire and with moisture proof treatment to winding and with 'E' class insulation and marking Sr. No. and date of erection.	Nos.	12.00		
<b>B</b>	<b>POINT WIRING &amp; CONDUITING WORK</b>				
	<p><b>Note for Item No 265 to 278:</b>  These notes shall apply to all the relevant wiring items described in the schedule of items given below :-  a) All points wiring, circuit wiring, sub mains wiring shall be done using rigid FR PVC CONDUITS as required, conduits of minimum 2 mm thickness and shall comply with IS 2509 of 1973 or amendments there of and FIA approval.  b) All switch boards under the point wiring shall be the standard boxes available and the same shall be suitable for concealed work/surface mounted work as per site. The boxes should be of Electro Zinc Plated/pvc as per the Manufactures standard practice as per site and should be suitable to accommodate number of control switches fan regulators, sockets, etc. as indicated in drawings.  c) The Sub Main wiring shall have continuous 2.5 sq.mm. wire of approved make. FR Copper conductor earth wire for earth continuity having Green colour in 660/1100 volts grade.  d) The point wiring shall comply to IS 732.  e) All materials under this schedule shall deemed to be included by the Contractor in his scope.  f) The entire work of the point wiring may be split into two parts i.e. partially to be laid on MS angle brackets ceiling supported or through existing floorings. It is understood that the bidder have included all the costs towards chasing the floors, removing the debris and redoing the flooring using cement mortar. All such costs shall be deemed to have been included.</p>				
265	Supplying & erecting mains with 2x2.5 sq.mm.and earth wire 1.5 sq.mm FR PVC copper wire, in rigid PVC conduit min.20mm dia, as per specification No: WG-MA/PC, para no. 1.4.1 of PWD Specification.	R.Mtr.	705.00		
266	Point wiring for <b>light/fan/bell</b> in 20 mm rigid PVC conduit with 1.0 sq.mm FR grade Copper wire with flush type switch and required accessories as per	Point	40.00		

	specification No: WG-PW/SW of PWD Specification.				
267	Supplying and drawing of 2x1.5 sq.mm. FR grade copper wires with 1.5 sqmm earthwire in provided concealed pipes and terminating on modular accessories in box for point wiring for independent plug as per specification No WG-PW/SW of PWD Specification.	R.Mtr.	50.00		
268	Supplying and erecting modular type switch 6A / 10A ISI mark approved make duly erected on provided plate and box with wiring connections complete.	Nos	31.00		
269	Supplying and erecting Modular type 5 pin socket with safety shutters 3 module socket 6A. 240V AC supply, ISI approved and marked make duly erected on provided plate and box with wiring connections complete duly erected in approved manner.	Nos	31.00		
270	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 4 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background in an approved manner.	Nos	31.00		
271	Supplying & erecting mains 2x1.5 sq.mm.and earth wire 1.5 sq.mm FR PVC copper wire, in rigid PVC conduit min.20mm dia, as per specification No: WG-MA/PC, para no. 1.4.1 of PWD Specification.	R.Mtr.	130.00		
272	Supplying and erecting ISI mark flush type shockproof plug socket 6 pin 6A and 16A with switch 16A combined unit erected on Filled polypropylene ISI marked (IS:14772-2000) board or double wooden block / 3mm thick hylam sheet / 4mm thickplywood pasted with 1.5 mm thick sunmica with S M screws and duly connected.	Nos	10.00		
273	SITC of 2 nos. 6 Amps.Multistandard type Socket outlet with 16 Amps.single pole modular type switch for Workstation and necessary face plate and GI back box with interconnections all complete as required and as per final approval of the Consultant/MDL.	Nos	52.00		
274	SITC of 6 Amps.Multistandard type Socket outlet with 6 Amps.single pole modular type switch and necessary face plate and GI back box with interconnections all complete as required and as per final approval of the Consultant/MDL.	Nos	70.00		
275	SITC of 3 nos. 6 Amps.Multistandard type Socket outlet with 16 Amps.single pole modular type switch for <b>TV point</b> and necessary face plate and GI back box with interconnections all complete as required and as per final approval of the Consultant/MDL.	Nos	4.00		
276	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 25 mm with accessories on wall/ceiling as per specification No: WG-MA/CON of PWD Specification.	R.Mtr.	85.00		
277	Supplying and erecting UPVC reinforced flexible conduit 20 mm in dia. conforming to I.S. and approved make with required number of couplings, PVC bushes, check nuts etc. complete.	R.Mtr.	45.00		
278	Supplying and erecting PVC box trunking of size 50x50 mm. with accessories on wall/ceiling as per specification No: WG-MA/BOX, para no. 1.1.2 of PWD Specification.	R.Mtr.	45.00		
<b>C</b>	<b>CABLES AND CABLE TRAYS</b>				

	<p><b>Notes for Item No 279 to 283 :-</b>  The rates for all item of work shall include :  a) Effecting proper and adequate connections at terminations.  b) Ensuring that provision is left in building components and trenches as the work proceeds for incorporation of cable supports at a later date.  c) Providing all fixing accessories such as clamping devices, nuts and bolts, screws where laid in trenches.  d) Providing proper supports for cable terminal boxes as called for.  e) Providing heavy duty copper lugs, insulation tape etc. at joints and terminations as called for.  f) All fixing accessories such as GI saddles, screws, rawal plugs, suitable size Anchor Fasteners etc.  g) Jointing by crimping type lugs.  h) Cutting chases, holes and making good the same wherever required.  i) Providing GI angle iron supports in the wherever required and fabricated using 50 x 50 x 6 mm GI Angle iron frame work along with 25 x 6 mm GI flats along with anti rust painting and final coats of painting.  j) All items listed in the BOQ shall be of approved make only as per tender. Any unspecified item shall be as per approval of consultant.  k) Vendor to verify actual quantity as per site conditions before procurement.</p>				
279	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 300 mm width & 75 mm height complete with necessary coupler plates & hardware in approved manner.	R. Mtr	25.00		
280	Supply, Installation, Testing & Commissioning with suitable angle iron supports GI perforated cable trays bolted type and fabricated using minimum 14 gauge CRCA sheet and maximum width of <b>450 mm</b> & height of 75 mm. Further the rate shall also include supporting of these trays from ceiling/ground using minimum 10mm fully threaded GI Rods/MS angles painted using 2 coats of red oxide and 2 coats of primer, all complete as required and as per final directions and final approval of the Consultant/MDL.	R. Mtr	10.00		
281	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 200 mm width & 75 mm height complete with necessary coupler plates & hardware in approved manner.	R. Mtr	35.00		
282	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 150 mm width & 75 mm height complete with necessary coupler plates & hardware in approved manner.	R. Mtr	180.00		
283	Suppling & laying Rigid PVC conduit 25 mm Dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC, para no. 1.2.1 of PWD Specification.	R. Mtr	1450.00		
<b>D</b>	<b>EARTHING</b>				
	<p><b>Note for Item No 284:</b>  a) All earth pits installation &amp; testing shall be as per IS 3043 with latest amendments.</p>				



	<p>b) Earthing stations should contain relevant grade of charcoal/coke and salt packed around the earth plate/ earth pipe as called for in the item.</p> <p>c) Earthing shall be done at indicated location by the Consultants. The minimum distance between the two earth station shall be 3 meters and that from the building is 2500 mm.</p> <p>d) An earth ring with relevant earth test terminal boxes shall to be provided at regular intervals.</p> <p>e) Adequate number of earth strips with proper sized holes shall be provided for extending earthing/looping earth connections at various floors shall be provided and executed as per the requirement.</p> <p>f) The Contractor has to provide heavy duty Cover of size 450 x 450 x 8 mm thick to the Earthing Chamber. The cover is to be sand blasted and then Powder coated using Matt Jet Black Colour. The Cover is to be fabricated using 8 mm thick Chequered Plate.</p> <p>g) As per IS 3043, The value for earth resistance shall be 5 Ohms.</p>				
284	<p>Supply, Installation, Testing &amp; Commissioning, the following sizes of earthing strips or wires including providing all fixing accessories and effecting proper connections and as per final directions and approval of the Consultant/MDL.</p> <p>--Supplying and erecting Annealed bare copper wire of high purity of different sizes used for earthing on wall with necessary copper clamps fixed on wall/cable/conduit with screws in an approved manner.</p>	Kg	92.09		
<b>E</b>	<b>TELEPHONE NETWORKING</b>				
	<p><b>Note for Item No 285 to 290:</b></p> <p>a) The telephone conduiting shall be done through floors/chasing of walls on cable racks / GI supports, the cost of which shall not be paid separately.</p> <p>b) The telephone wiring shall conform to the manufacturer's requirements of wiring for Electronic Exchanges.</p> <p>c) All telephone wiring shall have end ferruling, numbering with proper tags at regular intervals of proper identifications.</p> <p>d) The work has to be carried out, after obtaining Prior approvals of all schemes.</p> <p>e) All materials to be used under the item rates shall be of approved brands/ makes only.</p> <p>f) The telephone point wiring shall include wiring from floor tag block outlet in existing floor race ways or using minimum 25 mm dia PVC Conduit of 1.8 mm wall thickness of any length. The positions shown presently are tentative and may change during actual execution. No claim on account of change in location of the tag block will be entertained by the owner. The Bidder is therefore advised to built in the rates such contingencies for meeting these eventualities.</p> <p>g) The entire work of the Telephone Point wiring may be split into two parts i.e. partially to be laid on GI angle brackets ceiling supported or through existing floor trunking. It is understood that the bidder while quoting the rates shall have included all the costs of chasing the floors, removing the debris and redoing the flooring using cement mortar. All such</p>				

	costs shall not be separately paid and shall be deemed to have been included in the costs of the point wiring items. h) The number of telephone wires to be provided in 25 mm conduit shall be restricted to not more than 7 pairs and those in 37.5 mm GI pipes shall be restricted to not more than 12 pairs. If any higher size of GI conduits are used then the same shall be permitted after permission is granted to do so by the Architects. No separate rates shall be paid for use of higher diameter conduits and it will be deemed to have been included in the rate under telephone point wiring item.				
285	Supply, Installation, Testing & Commissioning in G.I. powder coated enclosure, Telephone Tag Block KRONE Type only of the following number of ways including supply of 1 No., punching tool complete with interconnections for incoming and outgoing telephone cables including ferruling, testing the joints, including all frame works for mounting the tag block systems. --Supplying, erecting & commissioning Junction box suitable for 30 pairs as per specification No. WG-TW of PWD Specification.	No.	3.00		
286	Supply, Installation, Testing & Commissioning in G.I. powder coated enclosure, Telephone Tag Block KRONE Type only of the following number of ways including supply of 1 No., punching tool complete with interconnections for incoming and outgoing telephone cables including ferruling, testing the joints, including all frame works for mounting the tag block systems. --Supplying, erecting & commissioning Junction box suitable for 20 pairs as per specification No. WG-TW of PWD Specification.	No.	1.00		
287	Supply, Installation, Testing & Commissioning in surface PVC insulated, PVC sheathed, armoured Jelly filled telephone armoured cables having minimum conductor cable size 0.51 dia tinned copper conductor of the following pairs complete with all fixing accessories such as G.I. saddles, G.I. screws, G.I. spacers /G.I. clamps etc. complete to above mentioned Krone Box. --Supplying & erecting telephone cable 20 pair with 0.5 mm dia. laid in provided PVC casing / conduit as per specification No. WG-TW of PWD Specification.	R.M	65.00		
288	Supply, Installation, Testing & Commissioning in surface PVC insulated, PVC sheathed, armoured Jelly filled telephone armoured cables having minimum conductor cable size 0.51 dia tinned copper conductor of the following pairs complete with all fixing accessories such as G.I. saddles, G.I. screws, G.I. spacers /G.I. clamps etc. complete to above mentioned Krone Box. --Supplying & erecting telephone cable 2 pair with 0.5 mm dia. laid in provided PVC casing / conduit as per specification No. WG-TW of PWD Specification.	R.M	250.00		
289	Supply, Installation, Testing & Commissioning in surface PVC insulated, PVC sheathed, armoured Jelly filled telephone armoured cables having minimum	R.M	65.00		

	conductor cable size 0.51 dia tinned copper conductor of the following pairs complete with all fixing accessories such as G.I. saddles, G.I. screws, G.I. spacers /G.I. clamps etc. complete to above mentioned Krone Box. --30 Pair, PVC sheathed armoured telephone cables.				
290	Supply, Installation, Testing & Commissioning of RJ11 outlet containing faceplate with gangbox as required and as per final direction and approval of the Consultant.	No.	105.00		
<b>F</b>	<b>COMPUTER DATA CABLING</b>				
	<b>Note for item no 291 to 298:</b> a) The Computer data cabling shall be done through existing floor trunking. wherever the laying of the cables through the existing trunking is not possible the PVC conduits of minimum 25 mm dia and having 1.8 mm wall thickness are to be laid from the nearest trunking. b) The Computer data wiring shall confirm to the hardware supplier. c) All Computer data wiring shall have end ferruling, numbering with proper tags at regular intervals of proper identifications. d) The work has to be carried out, after obtaining Prior approvals of schemes. e) All materials to be used under the item rates shall be of approved brands/ makes only. f) The entire installation is to be certified/documentated by the Approved Vendor for guarantee. It is the responsibility of the Contractor to get the installation certified/documentated from Approved Vendor. No separate cost shall be paid by the Owner for getting the installation certified/documentated and approved from Approved Vendor				
291	Supplying & installing UTP networking Cat-6 cable suitable for LAN / WAN Computer net-working as per specification No. WG-COC/NC of PWD Specification.	R.M	320.00		
292	Supplying, installing & testing UTP Connector (RJ-45) as per specification No. WG-NAS/UTPC of PWD Specification.	No.	60.00		
293	Supplying and fixing 24 port Patch Panel with tool-less keystone jacks in provided U Rack complete as per specification no. WGNAS/PP of PWD Specification.	No.	3.00		
294	Supplying and fixing 6U Wall Mount Rack (Dimension-DxWXH - 450X550X367 mm) as per specification in approved manner.	No.	1.00		
295	Supplying and fixing 3 meter length, UTP Patch cord of Cat 6 type in position as per specification No. WG-COC/PC of PWD Specification.	No.	3.00		
296	Supplying and fixing 1 meter length, UTP Patch cord of Cat 6 type in position as per specification No. WG-COC/PC of PWD Specification.	No.	60.00		
297	Supplying and erecting FR grade, PVC armoured multimode armoured multimode Optical Fibre Cable with 6 fibres, with core dia 50/125 µm (OM3) suitable for 1 GBps ethernet distance at 850 nm of wavelength, on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC LSZH of PWD Specification.	R.M.	1.00		
298	Supplying & erecting I.S.I. mark Rigid P.V.C. conduit	R.M.	50.00		

	20 mm. dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC, para no. 1.2.1 of PWD Specification.				
<b>G</b>	<b>INVERTER SYSTEM</b>				
299	Supplying, installing, testing & commissioning of 600 VA Digital pure sine wave inverter based on IGBT technology single phase 230V,50 Hz complete as per specification no. AP-INV (Without batteries)	No.	1.00		
300	Supplying and erecting 12 V/100AH TUBULAR Battery with battery terminal wire, duly charged complete with 36 months warranty complete.	No.	1.00		
301	Supplying and erecting of suitable size battery rack required for 12V / 100AH TUBULAR BATTERY.	No.	1.00		
<b>VII</b>	<b>LV System Works for 3rd Floor</b>				
<b>A</b>	<b>FIRE ALARM SYSTEM</b>				
302	SITC of Microprocessor based 2 loop Standalone analogue addressable type fire repeater control panel with 80 (4 x 20) character Super Twist LCD display. The Loop capacity shall be able to take 198 analogue addressable devices in one loop with loop capacity of 99 detectors and 99 devices. The Fire Alarm Panel shall have sufficient numbers of programmable relay controls for controlling AHUs, pressurization fans, ventilation fans at fire pump room, monitoring of fire sprinkler and fire hydrant pump, 220 volts AC power supply, automatic battery charger 24 volts sealed lead acid batteries sufficient for 24 hours normal working and then be capable of operating the system for 2 hours during an emergency conditions as required.	Nos	1.00		
303	SITC of Analoge addressable type multi sensor detector with mounting based LED, Address Switch to programme the detectors from 01-99, with BASE complete as required .	Nos	1.00		
304	SITC of Analoge addressable type smoke detector with mounting based LED.	Nos	34.00		
305	SITC of Sounder with 90 db output at 1 metre distance cum Strobe Lights with 110 cd. The strobes shall be synchronized for better evacuation as per specification complete as required.	Nos	1.00		
306	Supplying, erecting and testing remote response indicators as per specification No. FF-FAAS/RRI of PWD Specification. .	Nos	11.00		
307	Supplying, erecting, testing and commissioning Manual Call Point (Pill box) with break glass push button in metal enclosure complete as per specification No. FF-FAAS/MCP of PWD Specification..	Nos	1.00		
308	Supplying, installing, testing and commissioning of shielded, Electron Beam Cross Link Mineral Insulated Fire Survival Cable 2 core of 0.8 sqmm to 1.5 sq. mm size cable through 25mm FR PVC conduit of approved make (as recommended by Consultant.) The cable shall be confirming to IS standards and specifications.	Rmt	180.00		
309	Suppling & laying Rigid PVC conduit 25 mm Dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC, para no. 1.2.1 of PWD Specification.	Mtrs.	355.00		
<b>B</b>	<b>PUBLIC ADDRESS SYSTEM</b>				
310	SITC of Point wiring for Music system from main music console to individual Speakers using approved make 1	Rmt	150.00		

	pair twisted 40/36 flexible multi stranded copper conductor wire of required length. The rate shall also include supply and fixing PVC conduit of minimum 25 mm dia and having 1.8 mm thickness concealed in wall, for Music Point wiring all complete as required and as per final direction and approval of the Architect/Consultant.				
311	SITC at site of approved make or 4 inches diameter speakers of 6 Watts with impedance of 8 ohm RMS with decorative grill with suitable line matching transformer to work with the stated amplifier along with mounting brackets all complete as required and as per final direction and approval of the Architect/ Consultant.	Nos	12.00		
312	Supply, Installation, Testing & Commissioning of Auto Message Generator with minimum 4 messages & necessary accessories	Nos	1.00		
313	Supply installation testing and commissioning of plena programme controller and router.	Nos	1.00		
314	Supply, installation, testing and commissioning of 4 zone microphone.The call station shall provide facilities to make calls to up to six selected zones in a PA system and also have single button all-call selection. Selected zones shall be indicated with amber LEDs on the call station, and two additional LEDs shall give visible feedback on the active state of the microphone and the system. A green LED shall indicate microphone on or chime active (flashing LED); amber shall indicate that the system is occupied by a source with a higher priority or operation error (flashing LED).	Nos	1.00		
315	Supply, installation, testing and commissioning of 80W Amplifier with 8 ohm impedance.The power amplifiers shall have adequate continuous (RMS) power output to meet the requirement of the configuration. The unit shall be capable of delivering the rated output watts with less than 0.05% harmonic distortion in the design bandwidth. The amplifier shall have a broad band frequency response of 20 Hz to 20 KHz. The output voltage and impedance shall meet with the system requirements.	Nos	1.00		
<b>C</b>	<b>TV SYSTEM &amp; PROJECTOR WIRING</b>				
316	Supply, Laying, connection, testing and commissioning of RG6 TV Cable from splitter to TV point.	Mtrs.	65.00		
317	Supply, connection, testing and commissioning of 4 Way splitter	Nos.	1.00		
318	Supply, connection, testing and commissioning of HDMI socket.	Nos.	8.00		
319	Supplying & installing UTP networking Cat-6 cable suitable for LAN / WAN Computer net-working as per specification No. WG-COC/NC of PWD Specification.(for projector wiring.)	Mtrs.	75.00		
320	Supply, connection, testing and commissioning of 60 inch LED TV. with Digital Screen Size 60 inches Display Type LED Smart Capable Device is able to run apps installed on the device when connected to the internet or data network. Number Of HDMI Inputs2	Nos.	4.00		
321	Supply, connection, testing and commissioning of Projectors.LCD ("Liquid Crystal Display") projectors have traditionally displayed rich color saturation and image sharpness. The term LCD projector encompasses all models using LCD technology.	Nos.	1.00		

<b>D</b>	<b>RODENT REPELLENT SYSTEM</b>				
322	Supplying & erecting mains with 2x1.5 sq.mm F.R copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW of PWD Specification.	Mtrs.	75.00		
323	Supply, Installation, Testing and commissioning of Rodent Repellent Controller which has capacity to connect min <b>13 transducers</b> .The cost shall include all the necessary accessories to complete the job.The controllers should have variable frequency selection VHFO. <b>(Make:Maser / Ultrasonic Electronic or equivalent)</b>	Nos.	1.00		
324	Supply, Installation, Testing and commissioning of Transducer. <b>(Make:Maser / Ultrasonic Electronic or equivalent)</b>	Nos.	13.00		
325	Supply, Installation of MS stand to mount controller.	Nos.	1.00		
<b>VIII</b>	<b>LV System Works for 4th Floor</b>				
<b>A</b>	<b>FIRE ALARM SYSTEM</b>				
326	SITC of Microprocessor based 2 loop Standalone analogue addressable type fire repeater control panel with 80 (4 x 20) character Super Twist LCD display. The Loop capacity shall be able to take 198 analogue addressable devices in one loop with loop capacity of 99 detectors and 99 devices. The Fire Alarm Panel shall have sufficient numbers of programmable relay controls for controlling AHUs, pressurization fans, ventilation fans at fire pump room, monitoring of fire sprinkler and fire hydrant pump, 220 volts AC power supply, automatic battery charger 24 volts sealed lead acid batteries sufficient for 24 hours normal working and then be capable of operating the system for 2 hours during an emergency conditions as required.	Nos	1.00		
327	SITC of Analoge addressable type smoke detector with mounting based LED.	Nos	21.00		
328	SITC of Sounder with 90 db output at 1 metre distance cum Strobe Lights with 110 cd. The strobes shall be synchronized for better evacuation as per specification complete as required.	Nos	1.00		
329	Supplying, erecting and testing remote response indicators as per specification No. FF-FAAS/RRI of PWD Specification.	Nos	10.00		
330	Supplying, erecting, testing and commissioning Manual Call Point (Pill box) with break glass push button in metal enclosure complete as per specification No. FF-FAAS/MCP of PWD Specification..	Nos	1.00		
331	Supplying, installing, testing and commissioning of shielded, Electron Beam Cross Link Mineral Insulated Fire Survival Cable 2 core of 0.8 sqmm to 1.5 sq. mm size cable through 25mm FR PVC conduit of approved make (as recommended by Consultant.) The cable shall be confirming to IS standards and specifications.	Rmt	180.00		
332	Suppling & laying Rigid PVC conduit 25 mm Dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC, para no. 1.2.1 of PWD Specification.	Mtrs.	360.00		
<b>B</b>	<b>PUBLIC ADDRESS SYSTEM</b>				
333	SITC of Point wiring for Music system from main music console to individual Speakers using approved make 1	Rmt	165.00		

	pair twisted 40/36 flexible multi stranded copper conductor wire of required length. The rate shall also include supply and fixing PVC conduit of minimum 25 mm dia and having 1.8 mm thickness concealed in wall, for Music Point wiring all complete as required and as per final direction and approval of the Architect/Consultant.				
334	SITC at site of approved make or 4 inches diameter speakers of 6 Watts with impedance of 8 ohm RMS with decorative grill with suitable line matching transformer to work with the stated amplifier along with mounting brackets all complete as required and as per final direction and approval of the Architect/ Consultant.	Nos	15.00		
335	Supply, Installation, Testing & Commissioning of Auto Message Generator with minimum 4 messages & necessary accessories	Nos	1.00		
336	Supply installation testing and commissioning of plena programme controller and router.	Nos	1.00		
337	Supply, installation, testing and commissioning of 4 zone microphone.The call station shall provide facilities to make calls to up to six selected zones in a PA system and also have single button all-call selection. Selected zones shall be indicated with amber LEDs on the call station, and two additional LEDs shall give visible feedback on the active state of the microphone and the system. A green LED shall indicate microphone on or chime active (flashing LED); amber shall indicate that the system is occupied by a source with a higher priority or operation error (flashing LED).	Nos	1.00		
338	Supply, installation, testing and commissioning of 90W Amplifier with 8 ohm impedance.The power amplifiers shall have adequate continuous (RMS) power output to meet the requirement of the configuration. The unit shall be capable of delivering the rated output watts with less than 0.05% harmonic distortion in the design bandwidth. The amplifier shall have a broad band frequency response of 20 Hz to 20 KHz. The output voltage and impedance shall meet with the system requirements.	Nos	1.00		
<b>C</b>	<b>TV SYSTEM &amp; PROJECTOR WIRING</b>				
339	Supply, Laying, connection, testing and commissioning of RG6 TV Cable from splitter to TV point.	Mtrs.	65.00		
340	Supply, connection, testing and commissioning of 4 Way splitter.	Nos.	4.00		
341	Supply, connection, testing and commissioning of HDMI socket.	Nos.	8.00		
342	Supplying & installing UTP networking Cat-6 cable suitable for LAN / WAN Computer net-working as per specification No. WG-COC/NC of PWD Specification. (for projector wiring.)	Mtrs.	80.00		
343	Supply, connection, testing and commissioning of 60 inch LED TV. with Digital Screen Size 60 inches Display Type LED Smart Capable Device is able to run apps installed on the device when connected to the internet or data network. Number Of HDMI Inputs2	Nos.	4.00		
344	Supply, connection, testing and commissioning of Projectors.LCD ("Liquid Crystal Display") projectors have traditionally displayed rich color saturation and image sharpness. The term LCD projector encompasses all models using LCD technology.	Nos.	1.00		

<b>D</b>	<b>RODENT REPELLENT SYSTEM</b>				
345	Supplying & erecting mains with 2x1.5 sq.mm F.R copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW of PWD Specification.	Mtrs.	75.00		
346	Supply, Installation, Testing and commissioning of Rodent Repellent Controller which has capacity to connect min <b>13 transducers</b> .The cost shall include all the necessary accessories to complete the job.The controllers should have variable frequency selection VHFO. <b>(Make:Maser / Ultrasonic electronic or equivalent)</b>	Nos.	1.00		
347	Supply, Installation, Testing and commissioning of Transducer. <b>(Make:Maser / Ultrasonic electronic or equivalent)</b>	Nos.	13.00		
348	Supply, Installation of MS stand to mount controller.	Nos.	1.00		
<b>IX</b>	<b>LV System Works for 5th Floor</b>				
<b>A</b>	<b>FIRE ALARM SYSTEM</b>				
349	SITC of Microprocessor based 2 loop Standalone analogue addressable type fire repeater control panel with 80 (4 x 20) character Super Twist LCD display. The Loop capacity shall be able to take 198 analogue addressable devices in one loop with loop capacity of 99 detectors and 99 devices. The Fire Alarm Panel shall have sufficient numbers of programmable relay controls for controlling AHUs, pressurization fans, ventilation fans at fire pump room, monitoring of fire sprinkler and fire hydrant pump, 220 volts AC power supply, automatic battery charger 24 volts sealed lead acid batteries sufficient for 24 hours normal working and then be capable of operating the system for 2 hours during an emergency conditions as required.	Nos	1.00		
350	SITC of Analoge addressable type smoke detector with mounting based LED.	Nos	21.00		
351	SITC of Sounder with 90 db output at 1 metre distance cum Strobe Lights with 110 cd. The strobes shall be synchronized for better evacuation as per specification complete as required.	Nos	1.00		
352	Supplying, erecting and testing remote response indicators as per specification No. FF-FAAS/RRI of PWD Specification. .	Nos	10.00		
353	Supplying, erecting, testing and commissioning Manual Call Point (Pill box) with break glass push button in metal enclosure complete as per specification No. FF-FAAS/MCP of PWD Specification..	Nos	1.00		
354	Supplying, installing, testing and commissioning of shielded, Electron Beam Cross Link Mineral Insulated Fire Survival Cable 2 core of 0.8 sqmm to 1.5 sq. mm size cable through 25mm FR PVC conduit of approved make (as recommended by Consultant.) The cable shall be confirming to IS standards and specifications.	Rmt	180.00		
355	Suppling & laying Rigid PVC conduit 25 mm Dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC, para no. 1.2.1 of PWD Specification.	Mtrs.	360.00		
<b>B</b>	<b>PUBLIC ADDRESS SYSTEM</b>				
356	SITC of Point wiring for Music system from main music console to individual Speakers using approved make 1	Rmt	165.00		



	pair twisted 40/36 flexible multi stranded copper conductor wire of required length. The rate shall also include supply and fixing PVC conduit of minimum 25 mm dia and having 1.8 mm thickness concealed in wall, for Music Point wiring all complete as required and as per final direction and approval of the Architect/Consultant.				
357	SITC at site of approved make or 4 inches diameter speakers of 6 Watts with 8 ohm impedance RMS with decorative grill with suitable line matching transformer to work with the stated amplifier along with mounting brackets all complete as required and as per final direction and approval of the Architect/ Consultant.	Nos	15.00		
358	Supply, Installation, Testing & Commissioning of Auto Message Generator with minimum 4 messages & necessary accessories	Nos	1.00		
359	Supply installation testing and commissioning of plena programme controller and router.	Nos	1.00		
360	Supply, installation, testing and commissioning of 4 zone microphone.The call station shall provide facilities to make calls to up to six selected zones in a PA system and also have single button all-call selection. Selected zones shall be indicated with amber LEDs on the call station, and two additional LEDs shall give visible feedback on the active state of the microphone and the system. A green LED shall indicate microphone on or chime active (flashing LED); amber shall indicate that the system is occupied by a source with a higher priority or operation error (flashing LED).	Nos	1.00		
361	Supply, installation, testing and commissioning of 90W Amplifier with 8 ohm impedance.The power amplifiers shall have adequate continuous (RMS) power output to meet the requirement of the configuration. The unit shall be capable of delivering the rated output watts with less than 0.05% harmonic distortion in the design bandwidth. The amplifier shall have a broad band frequency response of 20 Hz to 20 KHz. The output voltage and impedance shall meet with the system requirements.	Nos	1.00		
<b>C</b>	<b>TV SYSTEM &amp; PROJECTOR WIRING</b>				
362	Supply, Laying, connection, testing and commissioning of RG6 TV Cable from splitter to TV point.	Mtrs.	65.00		
363	Supply, connection, testing and commissioning of 4 Way splitter.	Nos.	4.00		
364	Supply, connection, testing and commissioning of HDMI socket.	Nos.	8.00		
365	Supplying & installing UTP networking Cat-6 cable suitable for LAN / WAN Computer net-working as per specification No. WG-COC/NC of PWD Specification. (for projector wiring.)	Mtrs.	80.00		
366	Supply, connection, testing and commissioning of 60 inch LED TV. with Digital Screen Size 60 inches Display Type LED Smart Capable Device is able to run apps installed on the device when connected to the internet or data network. Number Of HDMI Inputs2	Nos.	4.00		
367	Supply, connection, testing and commissioning of Projectors.LCD ("Liquid Crystal Display") projectors have traditionally displayed rich color saturation and image sharpness. The term LCD projector encompasses all models using LCD technology.	Nos.	1.00		

<b>D</b>	<b>RODENT REPELLENT SYSTEM</b>				
368	Supplying & erecting mains with 2x1.5 sq.mm F.R copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW of PWD Specification.	Mtrs.	75.00		
369	Supply, Installation, Testing and commissioning of Rodent Repellent Controller which has capacity to connect min <b>13 transducers</b> .The cost shall include all the necessary accessories to complete the job.The controllers should have variable frequency selection VHFO. <b>(Make:Maser / Ultrasonic electronic or equivalent)</b>	Nos.	1.00		
370	Supply, Installation, Testing and commissioning of Transducer. <b>(Make:Maser / Ultrasonic electronic or equivalent)</b>	Nos.	13.00		
371	Supply, Installation of MS stand to mount controller.	Nos.	1.00		
<b>X</b>	<b>LV System Works for 6th Floor</b>				
<b>A</b>	<b>FIRE ALARM SYSTEM</b>				
372	SITC of Microprocessor based 2 loop Standalone analogue addressable type fire repeater control panel with 80 (4 x 20) character Super Twist LCD display. The Loop capacity shall be able to take 198 analogue addressable devices in one loop with loop capacity of 99 detectors and 99 devices. The Fire Alarm Panel shall have sufficient numbers of programmable relay controls for controlling AHUs, pressurization fans, ventilation fans at fire pump room, monitoring of fire sprinkler and fire hydrant pump, 220 volts AC power supply, automatic battery charger 24 volts sealed lead acid batteries sufficient for 24 hours normal working and then be capable of operating the system for 2 hours during an emergency conditions as required.	Nos	1.00		
373	SITC of Analoge addressable type multi sensor detector with mounting based LED.	Nos	1.00		
374	SITC of Analoge addressable type smoke detector with mounting based LED.	Nos	25.00		
375	SITC of Sounder with 90 db output at 1 metre distance cum Strobe Lights with 110 cd. The strobes shall be synchoronized for better evacuation as per specification complete as required.	Nos	1.00		
376	Supplying, erecting and testing remote response indicators as per specification No. FF-FAAS/RRI of PWD Specification.	Nos	12.00		
377	Supplying, erecting, testing and commissioning Manual Call Point (Pill box) with break glass push button in metal enclosure complete as per specification No. FF-FAAS/MCP of PWD Specification..	Nos	1.00		
378	Supplying, installing, testing and commissioning of shielded, Electron Beam Cross Link Mineral Insulated Fire Survival Cable 2 core of 0.8 sqmm to 1.5 sq. mm size cable through 25mm FR PVC conduit of approved make (as recommended by Consultant.) The cable shall be confirming to IS standards and specifications.	Rmt	185.00		
379	Suppling & laying Rigid PVC conduit 25 mm Dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC, para no. 1.2.1 of PWD Specification.	Mtrs.	365.00		
<b>B</b>	<b>PUBLIC ADDRESS SYSTEM</b>				

380	SITC of Point wiring for Music system from main music console to individual Speakers using approved make 1 pair twisted 40/36 flexible multi stranded copper conductor wire of required length. The rate shall also include supply and fixing PVC conduit of minimum 25 mm dia and having 1.8 mm thickness concealed in wall, for Music Point wiring all complete as required and as per final direction and approval of the Architect/Consultant.	Rmt	250.00		
381	SITC at site of approved make or 4 inches diameter speakers of 6 Watts with 8 ohm impedance RMS with decorative grill with suitable line matching transformer to work with the stated amplifier along with mounting brackets all complete as required and as per final direction and approval of the Architect/ Consultant.	Nos	13.00		
382	Supply, Installation, Testing & Commissioning of Auto Message Generator with minimum 4 messages & necessary accessories	Nos	1.00		
383	Supply installation testing and commissioning of plena programme controller and router.	Nos	1.00		
384	Supply, installation, testing and commissioning of 4 zone microphone.The call station shall provide facilities to make calls to up to six selected zones in a PA system and also have single button all-call selection. Selected zones shall be indicated with amber LEDs on the call station, and two additional LEDs shall give visible feedback on the active state of the microphone and the system. A green LED shall indicate microphone on or chime active (flashing LED); amber shall indicate that the system is occupied by a source with a higher priority or operation error (flashing LED).	Nos	1.00		
385	Supply, installation, testing and commissioning of 90W Amplifier with 8 ohm impedance.The power amplifiers shall have adequate continuous (RMS) power output to meet the requirement of the configuration. The unit shall be capable of delivering the rated output watts with less than 0.05% harmonic distortion in the design bandwidth. The amplifier shall have a broad band frequency response of 20 Hz to 20 KHz. The output voltage and impedance shall meet with the system requirements.	Nos	1.00		
<b>C</b>	<b>TV SYSTEM &amp; PROJECTOR WIRING</b>				
386	Supply, Laying. connection, testing and commissioning of RG6 TV Cable from splitter to TV point.	Mtrs.	65.00		
387	Supply, connection, testing and commissioning of 4 Way splitter.	Nos.	4.00		
388	Supply, connection, testing and commissioning of HDMI socket.	Nos.	8.00		
389	Supplying & installing UTP networking Cat-6 cable suitable for LAN / WAN Computer net-working as per specification No. WG-COC/NC of PWD Specification. (for projector wiring.)	Mtrs.	80.00		
390	Supply, connection, testing and commissioning of 60 inch LED TV. with Digital Screen Size 60 inches Display Type LED Smart Capable Device is able to run apps installed on the device when connected to the internet or data network. Number Of HDMI Inputs2	Nos.	4.00		
391	Supply, connection, testing and commissioning of Projectors.LCD ("Liquid Crystal Display") projectors have traditionally displayed rich color saturation and	Nos.	1.00		

	image sharpness. The term LCD projector encompasses all models using LCD technology.				
<b>D</b>	<b>RODENT REPELLENT SYSTEM</b>				
392.0	Supplying & erecting mains with 2x1.5 sq.mm F.R copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW of PWD Specification.	Mtrs.	80.00		
393	Supply, Installation, Testing and commissioning of Rodent Repellent Controller which has capacity to connect min <b>14 transducers</b> .The cost shall include all the necessary accessories to complete the job.The controllers should have variable frequency selection VHFO. <b>(Make:Maser / Ultrasonic electronic or equivalent)</b>	Nos.	1.00		
394	Supply, Installation, Testing and commissioning of Transducer. <b>(Make:Maser / Ultrasonic electronic or equivalent)</b>	Nos.	14.00		
395	Supply, Installation of MS stand to mount controller.	Nos.	1.00		
<b>XI</b>	<b>VRV OUTDOOR UNITS</b>				
	Note for Item No 396 to 399: Supply and delivery at MDL site of Modular outdoor units, with multi scroll compressors having Inverter Based Compressor based on Unit Configuration. The Unit should have Condenser fan, Electrical Accessories & Microprocessor Based Control panel, isolating valves and all the necessary accessories for proper functioning of the Condensing units and shall be suitable for outdoor application. The unit to be shipped with full charge of Eco- friendly Refrigerant gas (R410A / R407C) and oil, refrigeration-piping controls, first charge of refrigerant etc.The unit shall be compatible for BMS operation- Necessary relay card /soft integrator to be provided. Unit coil fins to have hydrophilic coating. The unit to provide the rated capacity at 35°C outdoor ambient conditions. Vendor to select unit standby capacity with configuration equivalent to the highest installed compressor capacity inside the unit or 30% of total unit HP; whichever is higher. The Supply scope of ODU also include supply of MS Stand duly powder quoted for the placement of ODU Preferred Make: Daikin, Mitsubishi Electric, Toshiba Outdoor units shall be suitable for delivering following cooling capacities at actual site condition NOTE:- Vendor to select ODU MODULES as per best Available Configuration. Below mentioned capacities are minimum cooling requirements. Standby capacity shall be over and above these capacities.				
396	Total Outdoor unit capacity requirement : 40.0 HP--3rd floor, Min. COP of 3.7	Nos.	1.00		
397	Total Outdoor unit capacity requirement : 56.0 HP--4th floor, Min. COP of 2.77	Nos.	1.00		
398	Total Outdoor unit capacity requirement : 56.0 HP--5th floor, Min. COP of 2.77	Nos.	1.00		
399	Total Outdoor unit capacity requirement : 52.0 HP--6th floor, Min. COP of 2.77	Nos.	1.00		
	<b>Note for Item No 400 to 418:</b> Supply and delivery at MDL site of Cassette Type Units & Treated Fresh Air unit as follows in VRF System suitable for functioning with above outdoor units:				

	Indoor Fan coil unit consisting of minimum 3 row-cooling coil blower with motor, filters, drain pan & casing. The indoor unit shall be complete with all necessary controls including air and refrigerant temperature sensors and electronic expansion valves thus giving individual, variable refrigerant flow. The electronic expansion valve shall be controlled by the 'fuzzy logic' microprocessor control system via a control board within the indoor unit that includes a unit address recognition system. Indoor cassette units shall have standard inbuilt condensate drain pump along with all the accessories as supplied by the manufacturer. The indoor units shall be suitable for a power supply of 240V/ 1 phase/ 50Hz OR 415V / 3 phase / 50Hz. <b>ALL INDOOR UNITS WITH CORDLESS REMOTE CONTROLLER AND STANDARD BATTERIES AND HOLDER</b>				
400	Indoor Units for 3rd Floor: Minimum 1.0 HP Ceiling Mounted One Way Cassette Unit	NOS.	3.00		
401	Indoor Units for 3rd Floor: Minimum 1.6 HP Ceiling Mounted One Way Cassette Unit	NOS.	1.00		
402	Indoor Units for 3rd Floor: Minimum 4.0 HP Ceiling Mounted Four Way Cassette Unit	NOS.	8.00		
403	Indoor Units for 3rd Floor: 600 CFM Treated Fresh Air Unit	NOS.	1.00		
404	Indoor Units for 4th Floor: Minimum 1.0 HP Ceiling Mounted One Way Cassette Unit	NOS.	2.00		
405	Indoor Units for 4th Floor: Minimum 1.6 HP Ceiling Mounted One Way Cassette Unit	NOS.	1.00		
406	Indoor Units for 4th Floor: Minimum 4.0 HP Ceiling Mounted Four Way Cassette Unit	NOS.	12.00		
407	Indoor Units for 4th Floor: 800 CFM Treated Fresh Air Unit	NOS.	1.00		
408	Indoor Units for 5th Floor: Minimum 1.0 HP Ceiling Mounted One Way Cassette Unit	NOS.	2.00		
409	Indoor Units for 5th Floor: Minimum 1.6 HP Ceiling Mounted One Way Cassette Unit	NOS.	1.00		
410	Indoor Units for 5th Floor: Minimum 4.0 HP Ceiling Mounted Four Way Cassette Unit	NOS.	12.00		
411	Indoor Units for 5th Floor: 800 CFM Treated Fresh Air Unit	NOS.	1.00		
412	Indoor Units for 6th Floor: Minimum 1.0 HP Ceiling Mounted One Way Cassette Unit	NOS.	2.00		
413	Indoor Units for 6th Floor: Minimum 1.6 HP Ceiling Mounted One Way Cassette Unit	NOS.	1.00		
414	Indoor Units for 6th Floor: Minimum 4.0 HP Ceiling Mounted Four Way Cassette Unit	NOS.	2.00		

415	Indoor Units for 6th Floor: Minimum 4.8 HP Ceiling Mounted Two Way Cassette Unit	NOS.	8.00		
416	Indoor Units for 6th Floor: 600 CFM Treated Fresh Air Unit	NOS.	1.00		
417	SITC of Refnet joint, Linear expansion valve with all necessary accessories.	NOS.	70.00		
418	SITC of Central Remote Control Basic type with batteries and holder.	NOS.	4.00		
	<b>Note for Item No 419 to 427:</b> Supply, Installation, Testing & Commissioning of following size Seamless heavy gauge Copper piping insulated with nitrile rubber. Refrigeration piping with Insulation to be laid inside the false ceiling taking supports from slab with necessary hangers & anchor fastners. Supports to be provided at a distance of 3 mtr for the entire length of the refrigeration piping. <b>Nitrogen Pressure Test of the Piping, and Vacuumizing before pre-charging is part of the piping installation scope.</b> <b>Preferred Make: Armacell/Superlon/ K Flex</b>				
419	Size : 6.5 mm dia with 12.5 mm thick nitrile Rubber Insulation	R.MTR	140.00		
420	Size : 9.5 mm dia with 12.5 mm thick nitrile Rubber Insulation	R.MTR	320.00		
421	Size : 12.7 mm dia with 12.5 mm thick nitrile Rubber Insulation	R.MTR	160.00		
422	Size : 15.9 mm dia with 25 mm thick nitrile Rubber Insulation	R.MTR	280.00		
423	Size : 19.1 mm dia with 25 mm thick nitrile Rubber Insulation	R.MTR	50.00		
424	Size : 22.2 mm dia with 25 mm thick nitrile Rubber Insulation	R.MTR	315.00		
425	Size : 28.6 mm dia with 25 mm thick nitrile Rubber Insulation	R.MTR	25.00		
426	Size : 34.9 mm dia with 25 mm thick nitrile Rubber Insulation	R.MTR	55.00		
427	Size : 41.3 mm dia with 25 mm thick nitrile Rubber Insulation	R.MTR	305.00		
	<b>Note for Item No 428 to 431:</b> Supply, fabrication, fixing in positions with suitable GI angle supports GI perforated cable trays bolted type with all necessary bends, connectors etc. and fabricated using minimum 14 gauge CRCA sheet. Further the rate shall also include supporting of these trays complete as required and as per final directions and final approval of the Consultant.				
428	Size : 150 mm Wide & 75 mm Deep	R.MTR	20.00		
429	Size : 200 mm Wide & 75 mm Deep	R.MTR	110.00		
430	Size : 300 mm Wide & 75 mm Deep	R.MTR	10.00		
431	Size : 450 mm Wide & 75 mm Deep	R.MTR	15.00		
432	Providing and fixing of Control Cabling between the indoor units & outdoor units. 4C x 2.5 Sq.mm 2XWY XLPE insulated, PVC inner sheathed, copper conductor, armoured , FRLS PVC outer sheathed cables	R.MTR	600.00		
	<b>Note for Item No 433 to 437:</b> Providing and fixing of Drain piping in UPVC with all fittings, bends, supports and clamps, including chasing				

	and drilling holes in walls. <b>Preferred Make: UPVC Pipe : Supreme / Astral / Finolex / Prince;</b> <b>Preferred Make: Insulation : Armacell/Superlon/ K Flex</b>				
433	25 mm dia. UPVC pipe with 6 mm thick nitrile rubber insulation.	R.MTR	140.00		
434	32 mm dia. UPVC pipe with 6 mm thick nitrile rubber insulation.	R.MTR	170.00		
435	40 mm dia. UPVC pipe with 6 mm thick nitrile rubber insulation.	R.MTR	90.00		
436	50 mm dia. UPVC pipe with 6 mm thick nitrile rubber insulation.	R.MTR	150.00		
437	100 mm dia. UPVC pipe with 6 mm thick nitrile rubber insulation.	R.MTR	45.00		
438	Supply, Installation, Testing, Commissioning of Galvanized Sheet Steel of 120 GSM Rectangular Ducting as per specification complete with Tie rod supports, nut-bolts, neoprene gaskets duly installed. Leak Testing of ducts at site shall be carried out as per SMACNA standard. (For Fresh Air Ducting) 24 G galvanized sheet steel	Sq. Mtr.	130.00		
439	Providing and Fixing of 19mm Closed Cell Elastomeric Nitrile Rubber Insulation over ducting having Density Between 40 to 60 Kg/m <sup>3</sup> . The Insulation Material to be FM Approved. The insulation shall have fire performance such that it passes Class 'O' and Class 1 for surface spread of flame. All insulation joints to be sealed with minimum 3" width 3mm Thk Self Adhesive tape of same material. The width of the sheet is 1000mm. <b>Vendor to provide the certificates of water permeability, Moisture Diffusion Resistance Factor or 'μ' value, Class O &amp; Class 1. Preferred Make of insulation : Armacell/Superlon/ K Flex</b>	Sq. Mtr.	160.00		
440	Providing and fixing of Fresh Air piping in SWR UPVC with all fittings, bends, supports and clamps necessary for the connection with GI Fresh Air Ducting & with Indoor Unit Machine. Preferred Make: SUPREME/ASTRAL/FINOLEX --100 mm dia SWR UPVC Fresh Air Pipe	R.MTR	300.00		
441	SITC of Air Flow Controller for Fresh Air distribution to Indoor Units with all necessary accessories. <b>Preferred Make: Troxs, Ruskin, Aldes</b> --Capacity : 100 CFM	Nos.	19.00		
	<b>Note for Item No 442 to 445:</b> Installation, Testing and Commissioning of VRF outdoor unit all complete alongwith all accessories, copper refrigerant piping, necessary electrical installation with cabling, drain piping with adequate charging of refrigerant gas same as that provided by factory pre charged gas for complete length of copper piping from each indoor to respective outdoor units etc. all complete as directed by MDL Engineers. <b>Installation also includes Cost of lifting, shifting, positioning at site as per drawing, the outdoor units to the terrace floor and necessary top up refrigerant gas.</b>				
442	Total Outdoor unit capacity requirement : 40.0 HP--3rd floor	Nos.	1.00		


443	Total Outdoor unit capacity requirement : 56.0 HP--4th floor	Nos.	1.00		
444	Total Outdoor unit capacity requirement : 56.0 HP--5th floor	Nos.	1.00		
445	Total Outdoor unit capacity requirement : 52.0 HP--6th floor	Nos.	1.00		
	<b>Note for Item No 446 to 462:</b> Installation, Testing and Commissioning of following type Indoor Units as follows in VRF System complete along with cordless remote controllers, accessories, copper refrigerant piping, necessary electrical installation with cabling, drain piping and drain pump kit , adequate charging of refrigerant gas same as that provided by factory pre charged gas for complete length of copper piping from each indoor to respective outdoor units etc. all complete as directed by MDL Engineers. <b>Installation also includes cost of lifting, shifting, positioning at site as per drawing, the Indoor Units to the respective locations on each floor as per drawing/as directed as MDL Engineers.</b>				
446	Indoor Units for 3rd Floor: Minimum 1.0 HP Ceiling Mounted One Way Cassette Unit	NOS.	3.00		
447	Indoor Units for 3rd Floor: Minimum 1.6 HP Ceiling Mounted One Way Cassette Unit	NOS.	1.00		
448	Indoor Units for 3rd Floor: Minimum 4.0 HP Ceiling Mounted Four Way Cassette Unit	NOS.	8.00		
449	Indoor Units for 3rd Floor: 600 CFM Treated Fresh Air Unit	NOS.	1.00		
450	Indoor Units for 4th Floor: Minimum 1.0 HP Ceiling Mounted One Way Cassette Unit	NOS.	2.00		
451	Indoor Units for 4th Floor: Minimum 1.6 HP Ceiling Mounted One Way Cassette Unit	NOS.	1.00		
452	Indoor Units for 4th Floor: Minimum 4.0 HP Ceiling Mounted Four Way Cassette Unit	NOS.	12.00		
453	Indoor Units for 4th Floor: 800 CFM Treated Fresh Air Unit	NOS.	1.00		
454	Indoor Units for 5th Floor: Minimum 1.0 HP Ceiling Mounted One Way Cassette Unit	NOS.	2.00		
455	Indoor Units for 5th Floor: Minimum 1.6 HP Ceiling Mounted One Way Cassette Unit	NOS.	1.00		
456	Indoor Units for 5th Floor: Minimum 4.0 HP Ceiling Mounted Four Way Cassette Unit	NOS.	12.00		
457	Indoor Units for 5th Floor: 800 CFM Treated Fresh Air Unit	NOS.	1.00		
458	Indoor Units for 6th Floor: Minimum 1.0 HP Ceiling Mounted One Way Cassette Unit	NOS.	2.00		
459	Indoor Units for 6th Floor: Minimum 1.6 HP Ceiling Mounted One Way Cassette Unit	NOS.	1.00		
460	Indoor Units for 6th Floor:	NOS.	2.00		




	Minimum 4.0 HP Ceiling Mounted Four Way Cassette Unit				
461	Indoor Units for 6th Floor: Minimum 4.8 HP Ceiling Mounted Two Way Cassette Unit	NOS.	8.00		
462	Indoor Units for 6th Floor: 600 CFM Treated Fresh Air Unit	NOS.	1.00		
463	M. S. hot dip galvanized structural work fabricated as per the site requirement/design for HVAC works.	Kg	1500.00		
	<b>Note for Item No 464 to 466:</b> Comprehensive, <b>all inclusive</b> Annual Maintenance Charges for entire VRF System after end of 1 year of Defects Liability Period (Inclusive of 1 Year Warranty period). The VRF System shall include all items covered in Electrical, Electronic and Mechanical devices as per installation.				
464	AMC charges for First Year after completion of Defect Liability Period	<b>LS</b>	<b>1.00</b>		
465	AMC charges for Second Year after completion of Defect Liability Period	<b>LS</b>	<b>1.00</b>		
466	AMC charges for Third Year after completion of Defect Liability Period	<b>LS</b>	<b>1.00</b>		
<b>XII</b>	<b>FIRE SPRINKLER SYSTEM</b>				
	<b>Note for Item No 467 to 473:</b> Providing, fabricating, fixing, testing and commissioning of G.I. pipes ( IS : 1239 Part-I) Heavy class including cutting, screwing, welding etc. and providing all fittings viz. flanges, bends, tees, elbows, reducers, clamps, hangers etc. complete including painting with one coat of zinc phosphate epoxy primer (DFT = 40 - 50 microns) and two more coats of synthetic enamel paint of approved shade for above ground use etc. complete as required, refer technical specification of tender.				
467	100 mm dia.	R. Mtr.	25.00		
468	80 mm dia.	R. Mtr.	70.00		
469	65 mm dia.	R. Mtr.	35.00		
470	50 mm dia.	R. Mtr.	25.00		
471	40 mm dia.	R. Mtr.	65.00		
472	32 mm dia.	R. Mtr.	55.00		
473	25 mm dia.	R. Mtr.	500.00		
474	Providing, fixing, testing and commissioning of Quartzoid Bulb Sprinkler Head with Temperature Rating of 68 Deg. Celcius with Universal Deflector Size:- 15 mm dia. etc. complete as required Pendent Type	Nos.	155.00		
475	Providing, fixing, testing and commissioning of special barrel nipple and 25 mm dia dropper flexible braided pipes from ceiling with necessary reducer coupling etc. complete as required ( Max Dropper length upto 1500 mm ).	Nos.	155.00		
476	Providing & fixing of Dry chemical powder (A.B.C.) type fire extinguisher of 6 kgs. capacity having ISI certification mark a(ISI : 2171) or as per latest IS Code etc. complete as required	Nos.	12.00		
<b>XIII</b>	<b>FURNITURE WORKS (CUSTOM MADE/MODULAR FURNITURE)</b>				
	<b>Note for Item No 477 to 500:</b>				

	<p><b>All Furniture and Assembly should comply with</b>  (A) The Business and Institutional Furniture Manufacturers Association (BIFMA)  (B) GREENGUARD Certification for Low Emitting Products and Materials</p>				
477	<p>Providing and fixing table made up of 19mm thick marine plywood, 4mm thick veneer finished top with imported PU coating &amp; bottom finished with 1mm thick laminate, Side credenza 19+19mm thick marine plywoode with hinged shutter, 4mm thick veneer finished top with imported PU coating &amp; bottom finished with 1mm thick laminate, including supports,drawers, etc. complete as directed of approved shape &amp; design as per drawing, all as directed. Sizes are following.(Basic Rate of Laminate of Rs. 647/-Sq.mt)(<b>Basic rate of Veneer of Rs. 2000/-Sq.mt</b>)  --Conference room table of size :  a)3500 X 1500 X 750 mm High, 12mm thick back painted glass, with 3nos flip top cable manager as attached dwg no. JB16/108-TD-3308 SHEET 5 of 7 R0</p>	nos	2.00		
478	<p>Providing and fixing table made up of 19mm thick marine plywood, 4mm thick veneer finished top with imported PU coating &amp; bottom finished with 1mm thick laminate, Side credenza 19+19mm thick marine plywoode with hinged shutter, 4mm thick veneer finished top with imported PU coating &amp; bottom finished with 1mm thick laminate, including supports,drawers, etc. complete as directed of approved shape &amp; design as per drawing, all as directed. Sizes are following.(Basic Rate of Laminate of Rs. 647/-Sq.mt)(<b>Basic rate of Veneer of Rs. 2000/-Sq.mt</b>)  --Conference room table of size :  b) 4200 X 1500 X 750mm High, with 3nos flip top cable manageras attached dwg no. JB16/108-TD-3308 SHEET 6 of 7 R0</p>	nos	2.00		
479	<p>Providing and fixing table made up of 19mm thick marine plywood, 4mm thick veneer finished top with imported PU coating &amp; bottom finished with 1mm thick laminate, Side credenza 19+19mm thick marine plywoode with hinged shutter, 4mm thick veneer finished top with imported PU coating &amp; bottom finished with 1mm thick laminate, including supports,drawers, etc. complete as directed of approved shape &amp; design as per drawing, all as directed. Sizes are following.(Basic Rate of Laminate of Rs. 647/-Sq.mt)(<b>Basic rate of Veneer of Rs. 2000/-Sq.mt</b>)  --600mm deep Display Counter made up of 25X40X1.5mm aluminium section with 9mm thick marine plywood @ top &amp; bottom finished with 4mm thick veneer with melamine polish etc. complete as per drawing.</p>	rmt	8.00		
480	<p>Providing and fixing table made up of 19mm thick marine plywood, 4mm thick veneer finished top with imported PU coating &amp; bottom finished with 1mm thick laminate, Side credenza 19+19mm thick marine plywoode with hinged shutter, 4mm thick veneer finished top with imported PU coating &amp; bottom</p>	nos	4.00		

	finished with 1mm thick laminate, including supports, drawers, etc. complete as directed of approved shape & design as per drawing, all as directed. Sizes are following. (Basic Rate of Laminate of Rs. 647/-Sq.mt) <b>(Basic rate of Veneer of Rs. 2000/-Sq.mt)</b> --GM table - 2100 X 900 X 750mm high, Side credenza 1050 X 450mm, back unit 4930 X 450mm. as attache dwg no. JB16/108-TD-3308 SHEET 1 of 7 R0				
481	Providing and fixing table made up of 19mm thick marine plywood, 4mm thick veneer finished top with imported PU coating & bottom finished with 1mm thick laminate, Side credenza 19+19mm thick marine plywoode with hinged shutter, 4mm thick veneer finished top with imported PU coating & bottom finished with 1mm thick laminate, including supports, drawers, etc. complete as directed of approved shape & design as per drawing, all as directed. Sizes are following. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)(Basic rate of Veneer of Rs. 2000/-Sq.mt)</b> --Head of CSR table - 1800 X 750 X 750mm high, Side credenza 1050 X 450mm, back unit 2932 X 450mm. as attached dwg no. JB16/108-TD-3308 SHEET 3 of 7 R0	nos	1.00		
482	Providing and fixing table made up of 19mm thick marine plywood, 4mm thick veneer finished top with imported PU coating & bottom finished with 1mm thick laminate, Side credenza 19+19mm thick marine plywoode with hinged shutter, 4mm thick veneer finished top with imported PU coating & bottom finished with 1mm thick laminate, including supports, drawers, etc. complete as directed of approved shape & design as per drawing, all as directed. Sizes are following. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)(Basic rate of Veneer of Rs. 2000/-Sq.mt)</b> --AGM table - 1800 X 750 X 750mm high, Side credenza 1050 X 450mm, back unit 2400 X 450mm. as attached dwg no. JB16/108-TD-3308 SHEET 2 of 7 R0	nos	3.00		
483	Providing and fixing table made up of 19mm thick marine plywood, 4mm thick veneer finished top with imported PU coating & bottom finished with 1mm thick laminate, Side credenza 19+19mm thick marine plywoode with hinged shutter, 4mm thick veneer finished top with imported PU coating & bottom finished with 1mm thick laminate, including supports, drawers, etc. complete as directed of approved shape & design as per drawing, all as directed. Sizes are following. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)(Basic rate of Veneer of Rs. 2000/-Sq.mt)</b> --DGM table - 1500 X 750 X 750mm high, Side credenza 1050 X 450mm, back unit 2400 X 450mm. as attached dwg no. JB16/108-TD-3308 SHEET 4 of 7 R0	no	5.00		
484	Providing and fixing table made up of 19mm thick marine plywood, 4mm thick veneer finished top with imported PU coating & bottom finished with 1mm thick laminate, Side credenza 19+19mm thick marine plywoode with hinged shutter, 4mm thick veneer finished top with imported PU coating & bottom finished with 1mm thick laminate, including	no	1.00		

	<p>supports, drawers, etc. complete as directed of approved shape &amp; design as per drawing, all as directed. Sizes are following. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)(Basic rate of Veneer of Rs. 2000/-Sq.mt)</b></p> <p>--GM's PA Table 1500 X 750 X 750mm high , side Credenza 900 X 450</p>				
485	<p>Providing and fixing table made up of 19mm thick marine plywood, 4mm thick veneer finished top with imported PU coating &amp; bottom finished with 1mm thick laminate, Side credenza 19+19mm thick marine plywoode with hinged shutter, 4mm thick veneer finished top with imported PU coating &amp; bottom finished with 1mm thick laminate, including supports, drawers, etc. complete as directed of approved shape &amp; design as per drawing, all as directed. Sizes are following. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)(Basic rate of Veneer of Rs. 2000/-Sq.mt)</b></p> <p>--Reception Table - 1200 X 750 X 750mm high, Side credenza 600 X 450mm</p>	nos	2.00		
486	<p>Providing and fixing Display table of size 1000X750X1200mm ht. made up of Top - 19mm thick marine plywood finished with external 4mm thick veneer with melamine polish &amp; Internal 1.5mm thick approved laminate Bottom - 12mm thick marine plywood finished with 4mm thick veneer with melamine polish from both sides</p> <p>Sides - 12mm thick marine plywood finished with 4mm thick veneer with melamine polish from both sides</p> <p>Open Shelf - 12mm thick marine plywood finished with 4mm thick veneer with melamine polish from both sides</p> <p>Castors - Lockable castors wheels</p> <p>Etc. Complete as per attached drawing no. JB16/108 - TD-3308 Sheet 07 of 07 - RO</p> <p><b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)(Basic rate of Veneer of Rs. 2000/-Sq.mt)</b></p>	nos	2.00		
					
487	<p>Providing and fixing Angular workstation - 1500X1500X750mm System : - 60 mm Partition x 1200 mm H, Aluminium Trims and Double Raceway Leg out of 16 gauge, dia- cast aluminium with approved finish and approved color / 2 mm thk M. S. Leg of approved style /design &amp; finish. 10-12 module Access flap in aluminium or laminate finish with brush for wire management, as per attached image and switches to be placed within the access flap, the switches to be provided by electrical contractor. 25 mm thk prelaminated particle board for top with edge banding as per approved by Architect. Pin up board + writing board to be accommodate with the 25 mm thk divider panel Accessories to be fixed by an pre approved</p>	nos	31.00		

	<p>system to the divider panel Accessories :- Pencil Holder, Cup Holder, Paper Tray, Book Shelf, Keyboard Tray, CPU Trolley Free standing pedestal - 450X450X650, prelam carcus (Box) Particle board with 3equal drawers. cable manager through cable risers &amp; cable trays below the table, separate for data &amp; IT. etc. complete. (Basic Rate of Laminate of Rs. 647/-Sq.mt)(Basic rate of Veneer of Rs. 2000/-Sq.mt)</p>				
488	<p>Providing @ fixing Linear workstation-1200X600X750mm System : - 60 mm Partition x 1200 mm H, Aluminium Trims and Double Raceway Leg out of 16 gauge, dia- cast aluminium with approved finish and approved color / 2 mm thk M. S. Leg of approved style /design &amp; finish. 10-12 module Access flap in aluminium or laminate finish with brush for wire management, as per attached image and switches to be placed within the access flap, the switches to be provided by electrical contractor. 25 mm thk prelaminated particle board for top with edge banding as per approved by Architect. Pin up board + writing board to be accommodate with the 25 mm thk divider panel Accessories to be fixed by an pre approved system to the divider panel Accessories :- Pencil Holder, Cup Holder, Paper Tray, Book Shelf, Keyboard Tray, CPU Trolley Free standing pedestal - 450X450X650, prelam carcus (Box) Particle board with 3equal drawers. cable manager through cable risers &amp; cable trays below the table, separate for data &amp; IT. etc. complete. (Basic Rate of Laminate of Rs. 647/-Sq.mt)(Basic rate of Veneer of Rs. 2000/-Sq.mt)</p>	nos	64.00		
					
489	<p>Providing and fixing Linear workstation - 1500X750X750mm System : - 60 mm Partition x 1200 mm H, Aluminium Trims and Double Raceway Leg out of 16 gauge, dia- cast aluminium with approved finish and approved color / 2 mm thk M. S. Leg of approved style /design &amp; finish. 10-12 module Access flap in aluminium or laminate finish with brush for wire management, as per attached image and switches to be placed within the access flap, the switches to be provided by electrical contractor. 25 mm thk prelaminated particle board for top with edge banding as per approved by Architect. Pin up board + writing board to be accommodate with the 25 mm thk divider panel Accessories to be fixed by an pre approved system to the divider panel Accessories :- Pencil Holder, Cup Holder, Paper Tray, Book Shelf, Keyboard Tray, CPU Trolley Free standing pedestal - 450X450X650, prelam carcus (Box) Particle board with 3equal drawers. cable manager through cable risers &amp; cable trays below the table, separate for data &amp; IT. etc. complete. (Basic Rate of Laminate of Rs. 647/-Sq.mt)(Basic rate of Veneer of Rs. 2000/-Sq.mt)</p>	nos	36.00		

490	Side credenza 900X450X600mm, Side Credenza with openable shutters. The top of credenza to be in 38 mm thk post-form top with bull nose edge. Etc. complete as per design. <b>(Basic Rate of Laminate of Rs. 647/-Sq.mt)(Basic rate of Veneer of Rs. 2000/-Sq.mt)</b>	nos	36.00		
491	Compactors: Providing and installing compactors with all fixtures, fittings, hinges, handles, ball catches and locks, Shelf, mechanical assisted drive arrangement, double/single faced mechanical unit, single faced fixed unit, shutter, with rust preventive treatment/powder coated finish etc complete as per drawing.as directed. Double faced Mechanical Unit - 1500X750X2130mm = 5nos Single Faced Mechanical Unit - 1500X400X2130mm = 2nos Single Faced Fixed Unit - 1500X400X2130mm = 2nos M. S. Shutter - 750X2030mm = 2nos	no	1.00		
492	Compactors: Providing and installing compactors with all fixtures, fittings, hinges, handles, ball catches and locks, Shelf, mechanical assisted drive arrangement, double/single faced mechanical unit, single faced fixed unit, MS shutter, with rust preventive treatment/powder coated finish etc complete as per drawing.as directed. Double Faced Mechanical Unit - 1500X750X2130mm = 3nos Single Faced Mechanical Unit - 1500X400X2130mm = 1nos	no	2.00		
493	Compactors: Providing and installing compactors with all fixtures, fittings, hinges, handles, ball catches and locks, Shelf, mechanical assisted drive arrangement, double/single faced mechanical unit, single faced fixed unit, MS shutter, with rust preventive treatment/powder coated finish etc complete as per drawing.as directed. Double Faced Mechanical Unit - 1180X750X2130mm = 3nos Single Faced Mechanical Unit - 1180X400X2130mm = 1nos Single Faced Fixed Unit - 1180X400X2130mm = 2nos M. S. Shutter - 1180X2030mm = 1nos	no	1.00		
494	Chairs: Supplying and fixing chairs with height adjustable armrest with side swivel, chrome legs with Nylon castor, adjustable lumbar support, Hydraulic adjustment height, tilt adjustment and tilt locking, adjustable thigh support, adjustable headrest with coat hanger arrangement, sliding seat with 12mm thick plywood base with leatherite/fabric and moulded PU foam infill etc. complete as per approved by Architect. (CH-1-GM Chairs)	nos	4.00		
495	Chairs: Supplying and fixing chairs with height adjustable armrest with side swivel, chrome legs with Nylon castor, adjustable lumbar support, Hydraulic adjustment height, tilt adjustment and tilt locking, adjustable thigh support, adjustable headrest, sliding seat with 12mm thick plywood base with leatherite/fabric and moulded PU foam infill etc. complete as per approved by Architect. (CH-2-PA, AGM, DGM, Head of CSR Chairs)	nos	10.00		
496	Chairs: Supplying and fixing chairs with height adjustable armrest with side swivel, chrome legs with	nos	129.00		

	Nylon castor, adjustable lumber support, Hydraulic adjustment height, tilt adjustment and tilt locking, thigh support, sliding seat with 12mm thick plywood base with leatherite/fabric and moulded PU foam infill etc. complete as per approved by Architect. (CH-3-Linear & angular workstations, reception Chairs)				
497	Chairs: Supplying and fixing chairs with height armrest with side swivel, chrome legs with Nylon castor, fixed lumber support, Hydraulic adjustment height, fixed handles, seat with 12mm thick plywood base with leatherite/fabric and moulded PU foam infill etc. complete as per approved by Architect. (CH-4-Visitors Chairs)	nos	111.00		
498	Chairs: Supplying and fixing chairs with height adjustable armrest with side swivel, chrome legs with Nylon castor, adjustable lumber support, Hydraulic adjustment height, tilt adjustment and tilt locking, thigh support, sliding seat with 12mm thick plywood base with leatherite/fabric and moulded PU foam infill etc. complete as per approved by Architect. (CH-5-Conference Chairs)	nos	44.00		
499	--Supplying and fixing Two seater wooden sofa set of size 1790X770X490/740mm high with elastic belt in seat & back, Steel legs, PU foam of 32 density in seat & back, PU leather with approved colour etc. complete as per drawing. (Make - Pitroda Furniture/Burosys/Meraj Marketing)	nos	13.00		
500	--Providing and fixing 600mm dia. & 600mm high Side table with SS Base & frame with 10mm thick toughened glass etc. complete.	nos	9.00		
	<b>TOTAL</b>				
	<b>WCT under VAT (in Percentage)</b>				
	<b>Service Tax including Swachh Bharat Cess and Kisan Kalyan Cess ( in Percentage)</b>				
	<b>GRAND TOTAL</b>				