

HLL LIFECARE LIMITED
A Government of India Enterprise

TENDER DOCUMENT

For
Construction of Urban Health Centre
At
Kurusikuppam for JIPMER,
Puducherry

PART-III
Special Conditions of Contract & Price Bid

TENDER NO. HLL/ID /JIPMER/UHC-02/15/36

Dated: 08th January 2016

INFRASTRUCTURE DEVELOPMENT DIVISION

SECTION I

SPECIAL CONDITIONS OF CONTRACT

1.0 Scope of Work

1.1 The construction works shall, inter-alia, include the following, as specified or as directed.

A) Building Works:

- a) Site clearance, removal of trees and stumps and dismantling and removal of obstructions etc. before commencement of the Works;
- b) True and proper setting-out and layout of the Works, setting of bench marks, preparation of working drawings for temporary works and provisions of all necessary labour, equipments, appliances and materials in connection therewith;
- c) Civil works including Earthwork, Concrete Work, Structural Work, Steel Work, Brick Work, Wood Work, Aluminium work, Flooring and Stone work, Roofing and Waterproofing Work, Finishing, Miscellaneous and Site Development Work etc.; and as detailed in documents.
- d) Drainage and water supply, plumbing and sanitary installation, pumping system and water treatment system etc.;
- a) Any other item of works as may be required to be carried out for proper execution and completion of works in all respect in accordance with provisions of the Contract

B) Other Works - General

- a) All aspects of quality assurance of various components of the Works;
- b) Cleaning of site and handing over of the Works;

- c) Rectification of the defects in the completed works and comprehensive maintenance of equipment/plants as per manufacturer's instruction during the Defects Liability Period;
 - d) The defects liability period shall be 1 year for the building work (except water proofing treatment) and 3 years for the service equipment -DG set, HVAC, lift, medical gas, BMS, UPS etc.The defects liability period for water proofing treatment shall be for 10 years.
 - e) Submission of 'Shop Drawings' as required during the execution of work;
 - f) Submission of 'As-Built Drawings' of Works and operation and service manual including list of spares of equipments/plants on completion of the Works;
 - g) Provision and maintenance of fully furnished and equipped site office accommodation for the Employer's Representative and the Employer and laboratory for testing with and including supply of testing equipments and consumable, all as described in the relevant specifications;
- 1.3 The successful tenderer will be expected to complete the Works within 12 calendar months from the 15th date from the date of issue of letter of acceptance or date of handing over of site whichever is later.
- 1.4 Throughout these tender documents, the terms "tender" and "bid" and derivatives tenderer/bidder, tender/bid and tendering/bidding etc. are synonymous and "day" means calendar day.

2.0 Location of Site

The site is located in S V Patel Salai,Puducherry - 12.

3.0 Deleted.

4.0 Dimensions and Levels

All dimensions and levels shown on the Drawings shall be verified by the Contractor on the Site and he will be held responsible for the accuracy and maintenance of all the dimensions and the levels.

5.0 Recorded Survey

As early as practicable after receipt of the work order, the Contractor shall carry out complete survey of the developed site including taking spot levels covering the whole

of site. The spot levels shall be recorded on a drawing to be prepared by the Contractor and agreed by the Employer's Representative and the drawing shall be duly signed by the Contractor and the Employer's Representative and be maintained carefully for future reference.

6.0 Notice of Operation

The Contractor shall not carry out any important operation without the consent in writing of the Employer's Representative.

7.0 Assistance for Employer/Employer's Representative

The Contractor shall provide for the Employer/ Employer's Representative at all times during the Contract including Maintenance Period, a competent chainman and/or all such other men as he may require to assist him in carrying out or checking any measurements, levels, setting out or measuring up or inspection of work. The Contractor shall also provide ladders, gangways, etc., and the necessary attendance to move and adopt as required and directed for inspection or measurement of the works by the Employer/ Employer's Representative.

8.0 Drinking Water

The Contractor shall provide and maintain at his cost and expense adequate drinking water complying in every respect with the regulations of local authorities for his workmen, sub-contractors and other contractors workmen working in the project and the Employer's Representative.

9.0 Construction Record

The Contractor shall keep and provide to the Employer's Representative and accurate records of the dimensions levels and positions of all new work and any other information necessary for the Employer's Representative to be able to prepare complete drawings, recording details of the works as constructed.

10.0 Safety of Adjacent Structures and Trees

The Contractor shall provide and erect to the approval of the Employer's Representative such supports as may be required to protect efficiently all structures and protective guards to trees which may be endangered by the execution of the works

or otherwise take such permanent measures as may be required by the Employer's Representative to protect the structures and trees.

Trees if any, existing at the site except those which are essential to be removed as per direction of the Employer's Representative be protected and maintained carefully to retain its healthy life.

11.0 Ordering Material

It shall be the responsibility of the Contractor to procure and bring to site of works all materials including cement and steel required for fulfilling the contract.

The Bill of Quantities shall not be used as a basis for ordering materials and the Contractor shall be entirely responsible for assessing the quantities of materials to be ordered.

12.0 Temporary Services

The Contractor shall provide and maintain all temporary services on or about the site required for the execution of the works and shall remove them on completion.

13.0 Keep Site Clean

During the progress of the works and when directed by the Employer's Representative the Contractor shall keep the site clear of all rubbish and debris including that which may be deposited on the site by other sub- contractors until the date of issue of certificate of completion. The cost of keeping the site clean shall be deemed to have been included for in the rates.

On completion of the works, the Contractor shall at his own expense clear away and remove from the site not later than 7 days from the date of completion of works all constructional plant, surplus materials, rubbish and temporary works of every kind and leave the entire site and works clean and in a workmanlike condition to the satisfaction of the Employer's Representative.

14.0 (i) Office Accommodation for Contractor, Employer/ Employer's Representative and Visiting Officials

The Contractor shall provide and maintain all necessary office/s, workshops, stores, shelters, sanitary facilities, canteens and other temporary buildings for themselves and their staff at site to the approval of the Employer's Representative.

Within 30 days of the date of the work order/handling over of site the Contractor shall also provide without any extra cost office accommodation of approx. 30Sq.m. for the Employer's Representative, inspecting officials and Meeting Room with attached Toilets. The office spaces shall be well lighted and cooled and shall be provided with adequate number of electric lights, plug points, ceiling fans, water cooler and Air-conditioners and all required furniture and fittings including cabinets and drawing stands. The layout and detail plan of all temporary office accommodations to be built at the site shall be to the approval of the Employer/ Employer's Representative.

All layout and detail plan of all temporary office accommodation to be built at the site shall be to the approval of the Employer's Representative.

All such facilities shall be removed at the completion of project or shifted/removed at any later date as directed by the Employer's Representative. All expenses for maintenance of the above facilities as well as running expenses shall be borne by the Contractor at no extra cost.

(ii) Telephone

The Contractor shall maintain one telephone at site at his own and shall pay all bills for calls and maintenance. The Telephone shall be installed by the Contractor and the Contractor shall allow the use of the telephone to all other contractors/sub-contractors engaged on the works, and may recover proportionate call charges from them. He shall also allow free use of one telephone to the Employer's Representative and other visiting officials for phone calls in connection with the works.

(iii) Testing Facilities (Site Laboratory)

The Contractor shall allow for providing all tests as required by the Specification and/or as instructed by the Employer's Representative including providing all necessary materials or samples and cost for testing all such tests from outside laboratories as required and approved by the Employer's Representative.

The Contractor shall set up at the site for use of the Employer's Representative a laboratory complete with the necessary equipment for testing of construction materials and concrete, all of which will revert to the Contractor at the end of the Contract. The Contractor shall also provide such labour, Lab. Technician, materials, and transport as the Employer's Representative may require to assist him in carrying out normal tests and checks on materials and workmanship and setting out and measurement of the work. The Contractor shall provide but not limited to the following materials, equipment and facilities in the site laboratory. The layout of the laboratory shall be got approved by the Employer's Representative before installation :

- i) A set of I.S. sieves for sieve analysis
- ii) Weighing scales upto 2 kg. and upto 20 kg.
- iii) Graduated cylinder 500 c.c. and Thermometer for temperature tests
- iv) Slump cone, 18 Nos. Cube Moulds (15 cm size) with standard poking rods.
- v) Concrete cube testing machine
- vi) Adequate curing facilities under shade.

15.0 Lighting for Works

The Contractor shall at all times provide adequate and approved lighting as required for the proper execution and supervision and inspection of the works.

16.0 Site Instruction Book

The Employer's Representative shall maintain a site instruction book on the site in which he or his authorized representatives remarks, instructions, decisions and other

essential details, of the work shall be recorded. The Contractor shall regularly note the contents of this book and initial if signifying his having done so and take immediate action on the same. The book shall not be removed from the Employer's Representative office.

17.0 Progress Report

The Contractor shall submit monthly progress reports indicating status of each activity planned for the period under consideration and summary of each completed and planned activity and the anticipated starting dates for activities planned but not in progress, schedule of materials including the details of materials received and Expected Time of Arrival (ETA) of other materials as ordered and such other details affecting the programme and progress of work to the Employer's Representative in a form as required by him which shall also include reasonable number of progress photographs of the works.

18.0 Site Meetings

Progress and quality evaluation meetings will be held at the site every week. The Contractor's senior representative in charge of the project alongwith his site-in-charge and other staff including of approved Sub-Contractors and suppliers as required shall participate in these progress review meetings and ensure all follow up actions.

19.0 Return of Plant

The Contractor shall supply to the Employer's Representative a monthly return showing full particulars on a form, to be approved by him of the items of plant including location and state of each and the sections of the works on which they are employed. This return is to be presented before the 10th day of each month.

20.0 Contractor to Verify Site Measurements

The Contractor shall check and verify all site measurements whenever requested by other Specialists Contractors or by nominated or other Sub-Contractors to enable them to prepare their own shop drawings and pass on the information with sufficient promptness as will not in any way delay the work. A copy of all such information passed on shall be given to the Employer's Representative.

21.0 Hoardings

The Contractor shall at his cost put up a suitable hoarding of approximate size 4 m x 3 m in English and Hindi to a design to be approved by the Employer's Representative before the Commencement of Work. The board shall include the name of the Project, Owner/Employer's Representative, Architect/Consultant & the Contractor as directed by the Employer and shall be installed at a location with adequate frames and supports as approved by the Employer's Representative.

22.0 Statutory Obligations, Notices, Fees and Charges

(1) (a) The Contractor shall comply with and give all notices required by any act, any instrument rule or order made under any Act, or any regulation or byelaw of any local authority or of any agency which has jurisdiction with regard to the Works or with whose systems the same are or will be connected (all requirements to be so complied with being referred to in these Conditions as the statutory requirements).

(b) If the Contractor shall find any divergence between the statutory requirements and all or any of the contract documents or any variation instruction issued in accordance with these Conditions. He shall immediately give to the Employer's Representative a written notice specifying the divergence.

(c) If the Contractor gives notice under paragraph (b) of this sub-clause or if Employer's Representative shall otherwise discover or receive notice of a divergence between the statutory requirements and all or any of the contract documents or any variation, instructions issued in accordance with these Conditions, the Employer's Representative shall within 7 days of discovery or on receipt of a notice, issue instructions in relation to the divergence, if and insofar as the instructions require the works to be varied, they shall be deemed to be Employer's Representative instructions issued in accordance with these conditions.

(d) (i) If in any emergency compliance with paragraph (a) of this sub-clause requires the Contractor to supply materials or execute work before receiving instructions under paragraph (c) of this sub-clause the Contractor shall supply such limited materials and execute such limited work as are reasonably necessary to secure the statutory requirements.

(ii) The Contractor shall forthwith inform the Employer's Representative of the emergency and of the steps that he is taking under this paragraph of these conditions.

(iii) Work executed and materials supplied by the Contractor shall be deemed to have been executed and supplied pursuant to an Employer's Representative instruction in accordance with these Conditions provided that the emergency arose because of a divergence between the statutory requirements and all or any of the documents referred to in these Conditions or any variation, instructions issued in accordance with these Conditions, and the Contractor has complied with sub-paragraph (ii).

(e) Provided that the Contractor complies with paragraph (b) of this sub-clause, the Contractor shall not be liable to the Employer under this Contract if the works do not comply with the statutory requirements from the Contractor having carried out work in accordance with the documents referred to these Conditions or any variation instruction issued in accordance with Clause (d)(i) of these Conditions.

(2) The Contractor shall pay and indemnify the Employer against liability in respect of any fees of charges (including any rates or taxes) legally demandable under any Act, any instrument, rule or order made under any Act, law or any regulation or byelaw of any local authority or of any statutory or agency in respect of works.

(3) It shall be the Contractor's responsibility to obtain all licences, permits, etc. from the local authorities as required in relation to the execution of work at the site.

Any assistance which the owner renders to the Contractor in terms hereof or otherwise relative to the above matters, shall not for any cause afford a basis or defense to the Contractor for any of his obligations under the contract nor ground for extension of time for completion.

23.0 Bar-bending Schedule for reinforcement Work

The Contractor shall prepare a detailed bar-bending schedule for all R.C.C. work and get them approved by the Employer's Representative well in advance of Construction and copies of such approved bar-bending schedules shall be submitted to the Employer's Representative for their use.

24.0 Specialist Sub-Contractor

The Contractor shall employ an Architect for the detailed design, structural design etc. and get all the specialist works such as the Sanitary Plumbing & Drainage works, Electrical works such as DGs et, UPS, Fire Protection Works, False Ceiling, Aluminium works, Doors, Waterproofing works, HVAC, Lift, Medical gas etc. executed through approved specialist sub-contractors having requisite experience as per the section IV in the technical bid in the particular trade. The list of such specialist sub-contractors the contractor proposes to use shall be submitted with his tender along

with details of their experience and on approval by the Employer's Representative the particular sub-contractor only shall be appointed for carrying out the work. The Employer/ Employer's Representative shall have the right to reject any specialist sub-contractor proposed in which case the contractor shall get the work executed by another specialist sub-contractor who meets with the approval of the Employer/ Employer's Representative and no claim by the Contractor regarding this aspect shall be entertained.

25.0 Shop Drawings

The Contractor and/or his approved sub-contractors shall prepare shop drawings for specialist trades such as Sanitary & Plumbing, Electrical & Mechanical works, Fire Protection Works, False Ceiling, Aluminium Doors & Windows, removable partitions and any other item as stipulated in the specifications in respect to the requirement under the contract. The shop drawings shall follow the design and detailing requirements as indicated in the Architect's drawings, specifications and Bill of Quantities and shall incorporate the fabrication details as proposed by the Contractor/Sub-Contractors, the features and exact conditions as available at the site of construction, any aspect related to coordination with other disciplines which might interfere with the proper installation of his work and any other details that the Employer's Representative might stipulate. Three copies of these shop drawings shall be submitted by the Contractor to the Employer's Representative. The Employer's Representative shall at his earliest convenience forward 2 copies of shop drawings to the Employer / Architect for their comments/approval. On receiving such comments/approval in general from the Employer's Representative, one copy of the approved shop drawing shall be forwarded to the contractor by the Employer's Representative. On receiving the final approval on the shop drawings, further work on the item shall be proceeded with by the Contractor. The Contractor shall submit these shop drawings to the Employer's Representative sufficiently early and well in advance to order for procurement of materials at site considering the overall time schedule to allow the Employer's Representative reasonable time to scrutinise the drawings and get it reviewed before further processing by the Contractor. Any plea of delay on this aspect by the Contractor shall not be entertained.

The Employer's Representative approval of fabrication working details and shop drawings, however, shall not relieve the contractor of his responsibility for errors and incorrect setting out and co-ordination between the trades or disciplines. The Architect's approval shall be in general and not intended to serve as a check and shall not relieve the contractor from furnishing the materials and performing the works as required by the Drawings and specifications.

Should the Contractor prove unable to produce satisfactory "Shop Drawings" or be unable to produce drawings to conform to the progress of the work, the Employer's Representative reserves the right to take whatever steps are necessary to have drawings undertaken by others and debit to the contractor's account.

Any decision taken by the Employer's Representative to have shop drawings produced elsewhere shall not relieve the Contractor of his contractual obligations and the contractor must provide to the Employer's Representative all necessary details, physical dimensions, descriptive literature of all equipment and materials to be incorporated on drawings within 10 days of a request from the Employer's Representative. No extension in contractual delivery time shall be allowed on account of the time consumed in submission and reviewing of defective drawings and resubmission of the drawings after being incorporated with the comments of the Architect.

26.0 As Built Drawing

The Contractor shall furnish 3 sets of drawings "as erected" and approved by different statutory authorities in accepting the work in its entirety and completion

(i) As built and Record Drawings

Before the works for any Section thereof are completed in accordance with clause 48 hereof, the Contractor shall furnish to the Employer all operating and maintenance instructions/manual/technical catalogues together with as-built drawings of the works as completed, in sufficient detail in the opinion of the Employer's Representative to enable the Employer to maintain, dismantle, reassemble and adjust all parts of the works. The Contractor shall submit the as-built drawings and record drawings for whole of the works including civil works, plumbing, drainage and water supply, electrical and all other services for approval of the Employer's Representative. Firstly, a set of draft drawing shall be submitted and on approval of which the final as built drawings shall be submitted and shall comprise each 3 prints and one reproducible of each drawing covering all essential information for proper and easy maintenance.

In addition to the above, the contractor shall also submit E & M and B& R inventories and warranty/ guarantee certificates for the electrical/ mechanical equipments.

The works shall not be considered to be completed until such approved instructions, manuals, drawings have been supplied to the Employer. Cost or charges for the purpose shall be included in the price for relevant work.

Operating & Maintenance instructions and list of Spares

The Contractor shall submit to the Employer's Representative for approval, as early as possible before dispatch of any equipments etc. general instructions namely operations and maintenance instruction manuals concerning the correct manner of assembling, operating and maintaining the work with special references to any recently developed features. This instruction manual shall be submitted, immediately following approval of the drawings together with the lists of spare parts separately. The contractor shall also quote for the Operation of utilities during the warranty period and rate for the Operation and maintenance of utilities installed in the building after the warranty period. This will not be considered for tender comparison purpose.

The manual shall be submitted for approval in the same manner as the drawings and when finally approved, copies shall be prepared and forwarded to the Employer's Representative. The Contractor shall ensure that the erection supervisor has a copy in his office at site.

The instruction manual shall describe in detail the erection procedure and the use of all erection equipment and measurement devices. The procedure for assembling, adjusting, operating and dismantling of each component, system and machine shall be described and illustrated. The maintenance of each component shall be described including the recommended frequency of inspections and lubrication.

The Contractor shall, in preparing the instruction manual, take into account the lack of experience and familiarity of the operating personnel with this type of equipment.

The Contractor shall be fully responsible for ensuring that all plant and materials supplied under this contract are suitable for use under local climatic conditions.

27.0 Photographs of Works Carried Out

The Contractor shall every month supply at his own cost a reasonable number of post card size clear coloured photographs of the works carried out from time to time as per the instructions of the Employer's Representative. In the event of any dispute or termination of the contract either by the Employer or the Contractor as provided, the Contractor shall arrange to obtain photographs of the works completed in A-4 size upon the date of such termination of contract.

28.0 Approved Makes

The specifications provide a list of approved makes of some materials specified. The Employer's Representative has the right to choose any of the approved makes from the list, which according to him is the best and most suitable for the purpose. The tender price quoted shall cover

for this aspect. Only when it is not possible to use any of the approved makes, either due to non-availability or due to technical reasons, the Contractor shall propose alternative materials and if found suitable these shall be approved by the Employer's Representative for construction but without any extra cost to the Employer.

Termination

If, the Contractor failing to complete the works within the stipulated period of completion, the Employer may, notwithstanding anything contained to the contrary in the contract, terminate at any time the contract, without being liable in any manner whatsoever to the contractor by 14 days' notice in writing to the contractor and proceed to complete or get completed the works which have remained incomplete/not done at the time of such termination, at the risk and cost of the Contractor.

Issue of Extra Construction Drawings

Extra prints of drawing for construction shall be issued for client's record. This shall be in addition to the as-built drawings.

31.0 GENERAL

31.1 Unless provided otherwise the work shall be carried out as per printed CPWD Specifications for Works 2009 (for Civil) Volume I & II, CPWD Specifications for Heating Ventilation & Air Conditioning (2004), CPWD Specifications for Electrical Works Part I (Internal - 2005), Part II (External – 1994), Part III (Lifts & Escalators - 2003) Part IV (Sub Station - 2007), Part V (Wet Risers & Sprinkler System - 2006) & Part VII (DG Sets - 2006) with upto-date correction slips.

32.0 SPECIALIST AGENCIES

32.1 Agencies to be engaged by the main contractor shall have to fulfil the eligibility criteria laid down below and they shall be engaged only with the prior approval of the Engineer-in-Charge.

32.2. If the main contractor fails to associate with or engage specialist agencies for execution of works listed from serial number 3 onwards in clause 2 of NIT within prescribed time or furnishes incomplete details or furnished details of ineligible agencies even after the tenderer is given due opportunity, the entire scope of such component of works shall be withdrawn from the tender and the same shall be got executed by the Engineer-in-Charge at the risk and cost of the main contractor.

32.3. In case the main contractor intends to change any of the agencies so engaged during the operation of the contract, he shall obtain prior approval of Engineer-in-Charge. The new agency/agencies shall also have to satisfy the laid down eligibility criteria. In case engineer-in-charge is not satisfied with the performance of any agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.

32.4. Same milestones shall be applicable for all components of work. The agencies so engaged will ensure that their components of the work are executed in time without giving any chance for slippage of milestones of the project. The amount to be withheld under Clause 5 of the contract will be decided by the Engineer-in-Charge. In the event of not achieving the necessary milestones as assessed from milestone bar chart, specified percentage of the tendered value of work will be withheld for failure of each milestone.

32.5. Specialist Agencies for works listed from serial number 3 onwards in the NIT, shall meet the eligibility criteria laid down herein and shall be employed with the prior approval of the Engineer-in-Charge.

Architect

The Architect or one of the Directors in the case of an Architectural Firm shall be registered with the Council of Architecture and shall provide comprehensive architectural consultancy on the basis of the concept plans appended to this tender document.

Internal Electrical Installation:

The Specialist Agency should have satisfactorily completed under their own name at least two internal electrical installations for similar buildings each costing not less than 1.50 crores (at least one of them in Central Government/Central Government Autonomous Bodies/Central Government PSUs) during last five years ending last day of the month of May 2011. Certificate of satisfactory completion/commissioning and working of the plant with date of completion, value as per final bill paid duly certified by authorized official not below the rank of Executive Engineer/ Project Manager to be enclosed. They should have a valid electrical license of applicable class issued from the State Govt. of Puducherry.

Lifts:

The Specialist Agency should be a reputed manufacturer of Lifts having a longstanding experience of 5 years or more in the manufacture, supply and installation of lifts.

The Specialist Agency should have satisfactorily installed and commissioned under their own name at least Seven numbers of Hospital/Bed lifts during last three years in any of the leading hospitals, ending last day of the month of March 2015. Certificate of satisfactory completion/commissioning and working of the lifts with date of completion, value as per final bill paid duly certified by authorized official not below the rank of Executive Engineer/ Project Manager to be enclosed.

The firm should have an established service centre operating in Puducherry/Tamilnadu

SECTION II

LIST OF APPROVED MANUFACTURERS / AGENCIES

Services / Materials to be consumed in the work shall be of the following manufacturers / agencies. In case the required materials / services are not available or the materials / services available with the manufacturers / agencies mentioned below do not meet the specifications (decision of the E-in-C in this regard shall be final & binding), the contractor shall obtain materials / services from the manufacturers / agencies approved by the E-in-C in writing.

1. LIST OF APPROVED MAKES / AGENCIES FOR CIVIL & PLUMBING MATERIALS

S. No	Materials	Manufacturers / Agencies
1	Ready mixed Concrete	UltraTech, RMC, RAMCO, ACC, Birla
2	Ordinary Portland Cement (Minimum 43 Grade)	UltraTech, RAMCO, India Cements, Birla (Grasim), ACC
3	Reinforcement/Structural Steel (Each LOT shall accompany manufacturer's Test Certificate)	SAIL, TISCO, RINL or BIS approved manufacturers
4	Stainless Steel	Salem Steel or as approved by E-in-C
5	White Cement	JK Cement, Birla White
6	Sand	Only River sand after approval of the sample by E-in-C
7	Bricks, Stones slabs, Lime, Neeru Stone aggregate	Samples to be got approved by E-in-C before use
8	Vitrified Tiles	Nitco, Johnson, Naveen, Euro, Morbito,
9	Flush doors	Kutty Flush Doors, Mysore Boards, Indian Plywood

		Mfg, Co, 'KIT' Ply' brand or any BIS approved brand
10	Fire check steel doors	Godrej, Sukri, Pacific works controls
11	FRP Doors	Fibrevent, Techno skills or Equivalent (or as approved by E-in-C)
12	Aluminium Fittings	Everite, Garnish, Crown Classic
13	Hydraulic floor Spring	Everite, Garnish, Hardwyn
14	Aluminium Extruded Sections	Jindal, Hindalco, Indalco
15	Aluminium Doors/Windows	As approved by E-in-C
16	Paints, Distempers	Jenson & Nicholson, Asian, ICI, Nerolac
17	Glazing	Float Glass of Modiguard or Saint-Gobain
18	Water proofing Works	As approved by E-in-C
19	Hydraulic Door Closers	Hardwyn, Everite, Garnish
20	Water Proofing Cement Paint	Showcem India, ICI, Nerolac
21	Ceramic Glazed Floor Tiles	Nitco, Orient, Kajaria, Somany, Naveen
22	Super plasticizer	CICO, MC Bauchemie (India) Pvt Ltd, Roffes Construction Chemicals, Pedilite Industries
23	PVC Flooring	Armstrong
24	False Ceiling (a) Fibre (b) Galvanized Steel (c) Calcium Silicate	Armstrong, Gyproc (Saint-Gobain) Armstrong, Gyproc (Saint-Gobain) Aerolite, Gyproc (Saint-Gobain)
25	Cast Iron Pipe and Fittings (Soil Pipes)	BIC, HEP, NECO, Ajmera

26	RC Hume Pipes	Indian Hume Pipe Co, Spun Pipe Co., Sementia, CH Patel & Co or Equivalent
27	Stoneware Pipes & Fittings	Dalmia, Parry, TACEL or equivalent
28	Cast Iron Pressure Pipes & Fittings	Tisco, BRM, KESORM or Equivalent
29	GI Pipes (ISI marked)	TATA, Zenith, Jindal, Gujarat Steel, ITC
30	GI Fittings (ISI marked)	'R' Brand, UNIK or equivalent
31	Gunmetal Valves & Fittings	Premier, Leader, Zoloto, or ISI marked brand
32	CI Sluice Valves, Check valves	IVC (Calcutta) Kirloskar/ Upadyaya/or with ISI mark
33	CP Brass Sanitary and water supply Fittings	Jaguar/Essess/SOMA/BILMAT/ Dripless or equivalent approved by E-In-C
34	Vitreous China Sanitary ware	Hindustan, EID Parryware, Cera
35	WC Seats & Covers	Commander, Diplomat, Admiral
36	Polyethylene/Polypropylene CISTERN	EVERLAST, FLUSHFLO, ESYFLO, CHALLENGER, CHAMPION, COMMANDER, MARVEL, Slimline
37	CI Fixtures, CI Cover & Frame	Ashok Iron Works/Bombay Iron Works/A Husainji / Ismaelji, Neco, BIC, RIF
38	CPVC Pipes	Astral Polytechnik, Ashirvad, Ajay Industrial corp
39	Curtain/Wall/Structural Glazing	Specialist Agency to be employed with Prior Approval of E-In-C
40	Plywood Products, Parcticle Boards & Veneers	Duroply (Green Marked, BWR Century Plywood, Green Plywood Kitply, Mysore Boards
41	Adhesive	Pidilite, Araldite
42	Plastic Laminates	Formica, Greenlam, Bakelite HYLAM

43	Powder Coatings	Berger/Nerocoat/Jenson & Nicholson
44	Tile Joint Filler	Bal Adhesives & Grouts, "ROFFE" Rainbow Tile Mate, Silicon Sealnet of GE Bayer Silicon/"Zentrival FM" of MC-Bauchemie (India) P Ltd
45	Resin Bonded Glass Wool	Crown Fibre Glass/Rock lloyd or equivalent approved by E-in-C
46	MS Tubes	TATA or equivalent
47	Roof Water Proofing	India Water Proofing, CICO, SIKA
48	Silicon Sealant	GE Bayer Silicone, SIKA
49	Anchor Fastener	Hilti, Bosch
50	Formwork Release Agent	Fosroc, MBT, MC Baucheme CICO, ADO Conmat
51	EPOXY	FOSROC. SIKA Qualcrete, Aradlite MBT
52	Water proofing System	CICO, FOSROC, SIKA, Supreme Siltech Chemicals, ADO Conmat
53	Modular Operation Theatre	MGI India P Ltd, PES or Equivalent
54	Stainless Steel Sinks	Prestige/AMC/Jayna/Kingston/Neelkanth
55	CP Waste, Spreaders for Urinals	Jaguar / Essess
56	Sensor based Auto Flushing System for Urinals	AOS Systems/Angash
57	SFRC Manhole Covers	Southern Concrete Industries, Rajvaibav Enterprises or equivalent
58	UPVC Pipes/Fittings	Supreme/Prince/ Finolex
59	Mirror	Atul / Modifloat/Saint Gobain/Golden Fish

4. LIST OF APPROVED MAKES FOR ELECTRICAL AND SUBSTATION ITEMS

S. No	Materials	Manufacturers / Agencies
1	H.T.Panel	Crompton/ABB/Alsthom/Siemens/Ashok Leyland
2	Transformer	Crompton/kirloskar/Voltamp/Alsthom/(DRY, Cast Resin) / BHEL/ Universal
3	Bus trunking/Rising mains	(Along with all accessories) L&T /Schneider/GE/Control &Switchgear)
4	LT Panels	GE/ABB/L&T/SIMENS/SCHNEIDER
5	ACBs	Same as in (4)
6	MCCBs	Same as in (4)
7	MCBs with DBs	Legrand/Hager/Alsthom/Merlin/Gerin/ Havells/Standard/Indo-asian
8	Accessories of HT/LT Panels	As per manufacturer's specified make
9	HT/LT UG cables	Cable corporation/Universal/Gloster/Havells/NICO /Polycab
10	Wiring cables	Polycab/Havells/RR Cables/Finolex
11	Switches (SFU)	GE/ABB/L&T/Siemens/Schneider
12	Modular Switches (SFU)	Legrand/Crabtree/EssEsskay(signature)MK/clipsal/Northwest
13	Piano Type switches and Boxes	Anchor/Leader
14	Cubicle Type Fuse Unit	Siemens /GE/L&T/Siemens/Schneider
15	SFUs/Isolators	Siemens/GE/L&T/ABB/ SCHNEIDER
16	Starters / Contractor/Bi	Siemens/L&T/ABB

	metal Relay	
17	Push Button/Indicating Lamps (LED type)	Siemens/L&T/ABB
18	CTs	Kappa
19	Control Fuse Base with HRC fuse	GEC / Alsthom
20	Selector Switch	Salezer
21	Measuring Instruments	AE/IMP/Rishab
22	MS Conduit	Supreme /BEC/NIL /or any Other ISI marked
23	PVC Conduit	Precision/Avon Plast/Clipsal
24	Accessories for PVC Conduit	Precision/Avon Plast
25	Capacitors	Universal / Siemens/L&T / GE
26	Relays	L&T/EE/GE
27	Digital Meters	Enercon/Alacrity/L&T
28	Jointing Kits	Rey Chem/3 Birla

5. LIST OF APPROVED MAKES FOR FIRE HYDRANT SYSEM

S. No	Materials	Manufacturers / Agencies
1	Diesel Engine	Kirloskar/Cummins
2	Fire Pumps	Kirloskar/Mather & Platt/Seimens
3	Electrical Motors	Kirloskar / Seimens
4	MS Pipes ('C' Class)	TATA / ZENITH
5	Butterfly Valves	Intervolve / Audco/ Leader

6	BALL VALVE (15-40 mm Dia)	RB/ITAP/Leader
7	Sluice Valves	Kirloskar/Kalpana/UNIK'R' Brand
8	Non-Return Valve (Flap Type C I)	Intervolve/Audco
9	Hydrant Valves	Newage/Minimax/Peter Autokit
10	Hose	Newage, Premier Extra, Padmini, Aqua Dura
11	Fire Extinguisher	Safex/Minimax/Peter Autokit
12	Pressure Guage	HD/Waree/H-GURU/Fiebig
13	Pressure Switch	Danfoss/Indfoss
14	Termination Lugs	Dowells/Usha
15	PVC insulated Copper Wires	FINOLEX/WINCAP/POLYCAB
16	Cables	Universal/CCI/Gloster
17	SFU's/FSU's	Ee/L&T/C&S
18	HRC Fuses	Havells/Ee
19	Over Load Relays	Ee/L&T
20	Single Phase Preventer	L&T/ Minilac
21	Indicating Lamps & Push Buttons	L&T /Technic
22	Air Break Contractors	Seimens/L&T/ABB
23	Sprinkler Head	HD/Tyco/Reliable/Fireasfe
24	Sprinkler lcv	HD/Tyco/Viking/Reliable/Fireasfe/Wormacd
25	Gunmetal Branch Pipe	Newage/Minimax/WINCO/Kailash
26	Threaded pipe fittings	R Brand/Unik

27	Air Release Valve	Rb/Tbs/Cimbrio
28	First Aid Hose Reel Drum	Minimax/Newage
29	First Aid Hose pipe	Padmini/Swastik/Usha Fire
30	Suction Strainer	Grandprix /Jaypee/Kirloskar/Leader
31	Battery	Exide/Amco
32	Pipe Protection	Pipe Kote (4mm Thick)
33	Pipe Support	Hi-Tech /Fabricated As per Site Conditions
34	Nozzle	Newage/Winco/Kailash
35	Foot valve (Gunmetal)	Neta/Leader
36	Foot Valve (Cast iron)	Kirloskar

6. LIST OF APPROVED MAKES FOR FIRE DETECTION SYSTEM

S. No	Materials	Manufacturers / Agencies
1	Addressable Smoke and Heat Detectors and Multi Criteria	Notifier/Edwards/Bosch
2	PVC Insulated Copper Cables	Finolex/Lapp/Belden
3	Addressable Panel	Edwards/Bosch Notifier
4	Duct Detectors/Manual Call Box/input Module/Control Module	Zicon, Firepro, Honeywell, Siemens, Schneider, Bosch
5	Strobe	System Sensor /UL listed
6	Conduit	BEC/Vimco

Price Bid format

Construction of Urban Health centre at Kurusikuppam for JIPMER, Pondicherry		
ABSTRACT		
SI.NO	DESCRIPTION OF WORK	AMOUNT
1	Part A - Pre construction activities	
2	Part B - Civil works	
3	Part C - Rerouting Drain	
4	Part D - Electrical & services	
	Grand total	

Construction of Urban Health centre at Kurusikuppam for JIPMER, Puducherry

Sl.no	Description of Item	Quantity	Unit	Rate in figures and words (Rs.)	Amount in figures and words (Rs.)
	Part A				
1	Preconstruction Activities, Preparation and Submission of Plan and approval	one job	Each job		
2	Preparation of working drawings	one job	Each job		
3	Preparation of Structural drawings	one job	Each job		
	PART - B CIVIL				
I	Earthwork				
1	Earthwork in excavation by mechanical means(Hydraulic Excavator)/Manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed.				
	All kinds of Soil	658.00	cum		
2	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.				
	All kinds of Soil	478.00	cum		

II	Trenches				
3	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	648.00	cum		
4	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials.				
	All kinds of soil.	606.00	cum		
5	Supplying and filling in plinth with Jamuna sand under floors, including watering, ramming, consolidating and dressing complete.	142.00	cum		
6	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm measured at a height of 1m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared.	450.00	100 sqm		
III	Concrete work				
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
A	1:1½:3 (1 Cement: 1½ coarse sand: 3 graded stone aggregate 20 mm nominal size)	5.00	cum		
B	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	132.00	cum		
8	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 :				
	1:1½:3 (1 cement:1½ coarse sand:3 graded stone aggregate 20 mm nominal size)	5.00	cum		

9	Providing and laying damp-proof course 40 mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size).	63.00	sqm		
10	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.	21.00	per 50 kg cement		
11	Making plinth protection 50 mm thick of cement concrete 1:3:6 (1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including finishing the top smooth.	59.00	sqm		
IV	Reinforced cement concrete				
12	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :				
	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	24.00	cum		
13	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. up to floor five level, excluding cost of centering, shuttering, finishing and reinforcement :				
	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	9.50	cum		
14	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement, with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	5.00	cum		
15	Centering and shuttering including strutting, propping etc. and removal of form for :				
A	Foundations, footings, bases of columns, etc. for mass concrete	300.00	sqm		

B	Suspended floors, roofs, landings, balconies and access platform	856.00	sqm		
C	Lintels, beams, plinth beams, girders, bressumers and cantilevers	1,975.00	sqm		
D	Columns, Pillars, Piers, Abutments, Posts and Struts	650.00	sqm		
E	Stairs, (excluding landings) except spiral-Staircases	240.00	sqm		
F	Vertical and horizontal fins individually or forming box louvers band, facias and eaves boards	13.00	sqm		
G	Weather shade, Chajjas, corbels etc., including edges	121.00	sqm		
16	Providing, hoisting and fixing up to floor five level precast reinforced cement concrete in vertical & horizontal fins, individually or forming box louvers, setting in cement mortar 1:2 (1 cement : 2 coarse sand), including the cost of required centering, shuttering but excluding the cost of reinforcement, with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	0.30	cum		
17	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
	Thermo-Mechanically Treated bars	21,500.00	kg		
18	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
	Thermo-Mechanically Treated bars	35,500.00	kg		
19	Smooth finishing of the exposed surface of R.C.C. work with 6 mm thick cement mortar 1:3 (1 Cement : 3 fine sand).	2,890.00	sqm		
20	Extra for rendering smooth the top of suspended floors, landings and staircases (treads and risers) with cement mortar 1:2 (1 cement : 2 coarse sand), including a floating coat of neat cement and protecting the surface with a layer of 7.5 cm of earth laid over 15 mm of fine sand in case of suspended floor and bricks laid in mud mortar in case of landings and steps, including subsequent removal and cleaning of the same.	743.00	sqm		

21	Extra for providing richer mixes at all floor levels. Note:- Excess/less cement over the specified cement content used is payable /recoverable separately.				
	Providing M-30 grade concrete instead of M-25 grade BMC/ RMC. (Note:- Cement content considered in M-30 is @ 340 kg/cum)	101.00	cum		
22	Add for using extra cement in the items of design mix over and above the specified cement content therein.	10.10	quintal		
23	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge.				
A	All works upto plinth level	200.00	cum		
B	All works above plinth level upto floor V level	339.00	cum		
V	Brickwork				
24	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 5.0 in foundation and plinth in:				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	98.30	cum		
25	Brickwork in superstructure				
	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 5.0 in superstructure above plinth level up to floor V level in all shapes and sizes in :				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	286.00	cum		

26	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 5.0 in superstructure above plinth level up to floor V level.				
	Cement mortar 1:4 (1 cement :4 coarse sand)	898.00	sqm		
27	Extra for providing and placing in position 2 Nos 6mm dia. M.S. bars at every third course of half brick masonry.	898.00	sqm		
VI	Granite work				
28	Marble work gang saw cut (polished and machine cut) of thickness 18 mm for wall lining (veneer work), backing filled with a grout of average 12 mm thick in cement mortar 1:3 (1 cement : 3 coarse sand), including pointing with white cement mortar 1:2 (1 white cement : 2 marble dust) with an admixture of pigment to match the marble shade (To be secured to the backing by means of cramps, which shall be paid for separately).				
	Raj Nagar Plain white marble/ Udaipur green marble/ Zebra black marble.				
	Area slab over 0.50sqm; Raj nagar plain white marble (table rubbed and polished) 18 mm thick (slab area more than 0.50 sqm); Granite of any colour, 18 mm thick (slab area above 0.50 sqm)	16.70	sqm		
29	Providing and fixing cramps of required size & shape in RCC/ CC / Brick masonry backing with cement mortar 1:2 (1 cement :2 coarse sand), including drilling necessary hole in stones and embedding the cramp in the hole (fastener to be paid separately).				
	Stainless steel cramps	3.40	kg		
VII	Wood works				
30	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia& length (hold fast lugs or dash fastener shall be paid for separately).				
	Second class teak wood	0.63	cum		

31	Providing and fixing panelled or panelled and glazed shutters for doors, windows and clerestory windows, including ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws, excluding panelling which will be paid for separately, all complete as per direction of Engineer-in-charge.				
	Second class teak wood				
	35mm thick shutters	29.40	sqm		
32	Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25 mm to 40 mm thick :	23.50	sqm		
33	Providing 50x50x50 mm 2nd class teak wood plugs including cutting brick work and fixing in cement mortar 1:3 (1 cement : 3 fine sand) and making good the walls etc.	96.00	each		
34	Providing and fixing expandable fasteners of specified size with necessary plastic sleeves and galvanised M.S. screws including drilling holes in masonry work /CC/ R.C.C. and making good etc. complete.				
	50mm long	96.00	each		
35	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 36 kg to 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete	13.00	each		
36	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete :				
A	300x16 mm	3.00	each		
B	250x16 mm		each		

		13.00			
37	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :				
A	250x10 mm	48.00	each		
B	150x10 mm	312.00	each		
C	100x10 mm	288.00	each		
38	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :				
A	100mm	272.00	each		
B	75 mm	246.00	each		
39	Providing and Fixing factory made PVC door frame made of PVC extruded sections of size 75 mm x 53 mm, having wall thickness 2.0 mm (± 0.2 mm). Both verticals sides of the frame reinforced with PVC profile of cross section size 28 mm x 30 mm x 2 mm thickness (± 0.2 mm) and 75 mm x 200 mm long, including reinforcing both ends of the top frame with PVC profile. PVC Door Frame and PVC reinforcement profile to be mitred cut, jointed and fusion welded together, including providing and fixing 3 nos of 125 mm long stainless steel hinges to frame, fixing the frame with jamb with required nos& sizes of anchor dash fastener, all complete as per manufacturer's specification and direction of engineer in- charge.	61.20	metre		

40	Providing and fixing 37 mm thick factory made PVC Door shutter, styles and rails made of PVC hollow extruded printed and laminated section having overall dimension 115 mm x 37 mm with wall thickness 2 mm (± 0.2 mm) with inbuilt beading on one side, the styles and rails mitred cut and joint at corners by inserting 2 nos PVC profile reinforcement of size 75 mm x 200 mm long with cross section size of 28 mm x 30 mm having wall thickness 2 mm (± 0.2 mm). Styles, rails and reinforcements to be fusion welded together. Only hinge side vertical style to be reinforced with PVC profile reinforcement in full length. Printed and laminated PVC lock rail of size 110 mm x 37 mm having wall thickness 2 mm (± 0.2 mm) to be welded horizontally with the vertical styles after inserting PVC profile reinforcement as in styles and rails, providing with PVC snap fit beading, panels of 100 x 20 mm printed & laminated and inserting 2 nos 6 mm dia bright steel rod horizontally with both side threaded and tightened with check nuts and washers complete, all as per manufacturer's specification and direction of engineer-in-charge.	22.70	sqm		
	Steel work				
41	Providing and fixing M.S. fan clamp type I or II of 16 mm dia M.S. Bar, bent to shape with hooked ends in R.C.C. slabs or beams during laying, including painting the exposed portion of loop, all as per standard design complete.	43.00	each		
42	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
A	In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete	2,610.00	kg		
B	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	1,205.00	kg		
43	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer.				

	M.S. Tube	92.00	kg		
VIII	Flooring				
44	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete.				
	40 mm thick with 20 mm nominal size stone aggregate	52.00	sqm		
45	Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement.				
	18 mm thick	6.00	sqm		
46	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :				
	25 mm thick	83.00	sqm		
47	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	3.40	sqm		
48	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	284.00	sqm		

49	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), including pointing the joints with white cement and matching pigment etc., complete.	27.50	sqm		
50	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS : 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), including grouting the joints with white cement and matching pigments etc., complete.				
	Size of Tile 600x600 mm	465.00	sqm		
51	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), including grouting the joint with white cement & matching pigments etc. complete.				
	Size of Tile 600x600 mm	286.00	sqm		
IX	Roofing				
52	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.				
	110 mm diameter	75.60	metre		
53	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.				
a	Coupler				

	110 mm	12.00	each		
b	Single tee with door				
	110x110x110 mm	6.00	each		
c	Bend 87.5°				
c1	110 mm bend	6.00	each		
c2	110 mm Shoe(plain)	6.00	each		
54	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.				
	110 mm	38.00	each		
X	Finishing				
55	12mm cement plaster of mix				
	1:6 (1 cement: 6 fine sand)	1,923.00	sqm		
56	15 mm cement plaster on the rough side of single or half brick wall of mix :				
	1:6 (1 cement: 6 fine sand)	1,733.00	sqm		
57	12 mm cement plaster finished with a floating coat of neat cement of mix :				
	1:3 (1 cement: 3 fine sand)	23.00	sqm		
58	White washing with lime to give even shade				
	New work (three or more coats)	412.00	sqm		
59	Finishing walls with water proof cement paint of required shade.				
	New work (Two or more coats applied @ 3.84 kg/10 sqm)	430.00	sqm		
60	Finishing walls with Acrylic Smooth exterior paint of required shade :				

	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm)	1,784.00	sqm		
61	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :				
a	Two or more coats applied on walls @ 1.25 ltr/10 sqm over and including one coat of Special primer applied @ 0.75 ltr / 10 sqm	4,370.00	sqm		
b	Painting wood work with Deluxe Multi Surface Paint of required shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @0.75 ltr/ 10 sqm of approved brand and manufacture.	90.00	sqm		
c	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/ 10 sqm over an under coat of primer applied @ 0.80 ltr/ 10 sqm of approved brand and manufacture.	56.00	sqm		
62	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :				
	Two or more coats on new work	20.00	sqm		
XI	Road work				
63	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth with lead upto 50 metres.	66.00	sqm		
64	Supplying and filling in plinth with Jamuna sand under floors, including watering, ramming, consolidating and dressing complete./Moorum/Sand zone V (Jamuna)	20.00	cum		
65	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 40 mm nominal size) in pavements, laid to required slope and camber in panels as required including consolidation finishing and tamping complete.	6.60	cum		

66	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	1.00	cum		
XII	Sanitary Installation				
67	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :				
	W.C. pan with ISI marked black solid plastic seat and lid	13.00	each		
68	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :				
	One urinal basin with 5 litre white P.V.C. automatic flushing cistern	6.00	each		
69	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. Brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require :				
	White Vitreous China Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar tap	10.00	each		

70	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P brass waste and 40mm C.P. brass trap with necessary C.P. brass unions complete, including painting of fittings and brackets, cutting and making good the wall wherever required :				
	Size 600x450x200 mm	6.00	each		
71	Providing and fixing draining board with C.I. brackets including painting of brackets, cutting and making good the walls wherever required :				
	White glazed fire clay draining board of size 600x450x25 mm	1.00	each		
72	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
	Flexible pipe of 40mm dia	16.00	each		
73	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	16.00	each		
74	Providing and fixing 600x120x5 mm glass shelf with edges round off, supported on anodisedaluminium angle frame with C.P. Brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	10.00	each		
75	Providing and fixing toilet paper holder				
	C.P brass	13.00	each		
76	Providing and fixing PTMT Waste Coupling for wash basin and sink, of approved quality and colour.				
a	Waste coupling 31 mm dia of 79 mm length and 62mm breadth weighing not less than 45 gms	16.00	each		
b	Waste coupling 38 mm dia of 83 mm length and 77mm breadth, weighing not less than 60 gms	6.00	each		
77	Providing and fixing PTMT bottle trap for wash basin and sink.				

a	Bottle trap 31mm 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 260 gms	16.00	each		
b	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	6.00	each		
78	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour.				
	600 mm long towel rail with total length of 645 mm, width 78 mm and effective height of 88 mm, weighing not less than 190 gms	13.00	each		
79	Providing and fixing PVC Soil, waste and vent pipe to IS: 13592 of SWR quality 4kg/sq.cm pressure rated upto 110mm dia and 6kg/sq.cm pressure rated agriculture series above 100mm, including all fittings, like EG: Bends, Tees, Elbows, Collars, junction, inspection doors, cowls, offsets, access pipes, jointing with rubber rin g/ solvent cement by application of leak proof adhesive like FRP including cutting holes in walss and floors and making good				
a)	40mm nominal dia pipes	120.00	metre		
b)	75mm nominal dia pipes	120.00	metre		
c)	110mm nominal dia pipes	120.00	metre		
XIII	Water supply				
80	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.				
a	15mm nominal outer dia pipes	42.00	metre		
b	20mm nominal outer dia pipes		metre		

		42.00			
c	25mm nominal outer dia pipes	29.00	metre		
d	40mm nominal outer dia pipes	19.00	metre		
81	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement ,trenching ,refilling & testing of joints complete as per direction of Engineer in Charge.				
	40mm nominal outer dia pipes	60.00	metre		
82	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				
a	25mm nominal bore	3.00	each		
b	40mm nominal bore	1.00	each		
83	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :				
	25 mm nominal bore	1.00	each		
84	Providing and fixing gun metal non- return valve of approved quality (screwed end) :				
	40 mm nominal bore- horizontal	1.00	each		
85	Providing and fixing uplasticised PVC connection pipe with brass unions :				
	45cm length				
	15 mm nominal bore	26.00	each		
86	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	5,000.00	litres		
87	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 :				
	15 mm nominal bore	15.00	each		
88	Providing and fixing C.P. brass stop cock (concealed) of standard design and of				

	approved make conforming to IS:8931.				
	15 mm nominal bore	20.00	each		
89	Providing and fixing PTMT grating of approved quality and colour.				
	Rectangular type with openable circular lid				
	150 mm nominal size square 100 mm diameter of the inner hinged round grating	10.00	each		
90	Cutting holes up to 30x30 cm in walls including making good the same:				
	With common burnt clay F.P.S. (non modular) bricks	7.00	each		
91	Making hole up to 20x20 cm and embedding pipes up to 150 mm diameter in masonry and filling with cement concrete 1:3:6 (1 cement : 3 coarse sand 6 graded stone aggregate 20 mm nominal size) including disposal of malba.	7.00	each		
XIV	Drainage				
92	Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete :				
	100mm dia	6.00	metre		
93	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design :				
	100 mm diameter S.W. pipe	6.00	metre		
94	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design :				
	150 x 100 mm size P type				
	With common burnt clay F.P.S. (non modular) bricks of class designation 5.0	5.00	each		

95	Providing and laying non-pressure NP2 class (light duty) R.C.C. Pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :				
	150 mm dia. R.C.C. Pipe	25.00	metre		
96	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :				
	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :				
	With common burnt clay F.P.S. (non modular) bricks of class designation 5.0	6.00	each		
97	Extra for depth for manholes				
	Size 90x80 cm				
	With common burnt clay F.P.S. (non modular) bricks of class designation 5.0	2.00	metre		

98	Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement: 4 coarse sand), in side cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :				
	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :				
	With common burnt clay F.P.S. (non modular) bricks of class designation 5.0	2.00	each		
99	Making soak pit 2.5 m diameter 3.0 metre deep with 45 x 45 cm dry brick honey comb shaft with bricks and S.W. drain pipe 100 mm diameter, 1.8 m long complete as per standard design.				
	With common burnt clay F.P.S. (non modular) bricks of class designation 5.0	3.00	each		
XV	Aluminium works				

100	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :				
	For fixed position				
	Anodisedaluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	1,250.00	kg		
101	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)				
	Anodisedaluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	1,942.00	kg		
102	Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.				
	Pre-laminated particle board with decorative lamination on both sides	47.00	sqm		

103	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):				
	With float glass panes of 5.50 mm thickness	209.00	sqm		
104	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight C227 upto 125 kg, for doors, including cost of cutting+C250 floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge.				
	With brass cover plate minimum 1.25 mm thickness	33.00	each		
105	Providing and fixing stainless steel (SS 304 grade) adjustable friction windows stays of approved quality with necessary stainless steel screws etc. to the side hung windows as per direction of Engineerin- charge complete.				
	255 X 19 mm	300.00	each		
106	Filling the gap in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete.				
	Upto 5mm depth and 5 mm width	550.00	metre		
107	Providing and fixing 100mm brass locks (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	29.00	each		
108	Providing and fixing aluminium round shape handle of outer dia 100mm with SS screws etc. complete as per direction of Engineerin-charge				
	Anodized (AC 15) aluminium	29.00	each		

109	Providing and fixing anodisedaluminium grill (anodised transparent or dyed to required shade according to IS: 1868 with minimum anodic coating of grade AC 15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P. brass/ stainless steel screws @ 200 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodisedaluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment).	226.00	kg		
XVI	Water proofing				
110	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of :	133.00	sqm		
111	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approvedby Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment. b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating imilarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs c)				

	After two days of proper curing applying a second coat of cement slurry using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep. e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Charge :				
	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	306.00	sqm		
	Part C - Rerouting Drain				
	Earthwork				
1	Earthwork in excavation by mechanical means(Hydraulic Excavator)/ Manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10cm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed.				
	All kinds of Soil	257.52	cum		
	Trench				
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5m,	28.86	cum		
3	Supplying and filling in plinth with Jamuna sand under floors, including watering, ramming, consolidating and dressing complete.	8.88	cum		
	Concrete work				
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				

	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	21.09	cum		
	Reinforced cement concrete				
6	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level : 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	26.64	cum		
7	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. up to floor five level, excluding cost of centering, shuttering, finishing and reinforcement :				
	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	58.83	cum		
8	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement, with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	19.43	cum		
9	Centering and shuttering including strutting, propping etc. and removal of form for :				
9.a.	Fondations, footings, bases of columns, etc. for mass concrete	23.46	sqm		
9.b.	Suspended floors, roofs, landings, balconies and access platform	74.00	sqm		
9.c.	Lintels, beams, plinth beams, griders, bressumers and cantilever	210.00	sqm		
9.d.	Columns, Pillars, Piers, Abutments, Posts and Struts	392.00	sqm		
10	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. Thermo-Mechanically Treated bars	17,861.00	kg		

11	Smooth finishing of the exposed surface of R.C.C. work with 6 mm thick cement mortar 1:3	251.60	sqm		
	Flooring				
12	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete. 40 mm thick with 20 mm nominal size stone aggregate.	55.50	sqm		
	PART D - Electrical & services				
	WIRING				
1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required.				
1a	Group A	15.00	Point		
1b	Group B	189.00	Point		
1c	Group C	5.00	Point		
2	Wiring for twin control light point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required.	4.00	Point		
3	Wiring for light/ power plug with 2X4 sq. mm FR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit alongwith 1 No 4 sq. mm FR PVC insulated copper conductor single core cable for loop earthing as required.	2,940.00	Metre		
4	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FR PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC				

	conduit as required				
4b	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	1,220.00	Metre		
4c	2 X 4 sq. mm + 1 X 4 sq. mm earth wire	2,940.00	Metre		
4d	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	1,800.00	Metre		
4e	4 X 2.5 sq. mm + 2 X 2.5 sq. mm earth wire	50.00	Metre		
4f	4 X 6 sq. mm + 2 X 6 sq. mm earth wire	50.00	Metre		
4g	4 X 10 sq. mm + 2 X 10 sq. mm earth wire	100.00	Metre		
4h	4 X 16 sq. mm + 2 X 16 sq. mm earth wire	100.00	Metre		
5	Supplying and drawing following pair 0.5 sq mm FR PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required.				
5a	2 Pair	1,080.00	Metre		
6	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	60.00	Metre		
7	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
7a	20 mm	1,080.00	Metre		
7b	25 mm	840.00	Metre		
8	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
8a	Telephone socket outlet	28.00	Each		
8b	TV antenna socket outlet		Each		

		1.00			
8c	Bell push	2.00	Each		
9	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	59.00	Each		
10	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	30.00	Each		
11	Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular switches in recess etc as required.				
11a	1 or 2 Module (75mmX75mm)	31.00	Each		
12	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection etc. as required. (For light plugs to be used in non residential buildings).	113.00	Each		
13	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc. as required.	57.00	Each		
14	Supplying and fixing call bell/ buzzer suitable for single phase, 230 volts, complete as required.	2.00	Each		
15	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube etc. directly on ceiling/ wall, including connection with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required.	84.00	Each		
16	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (upto 30 cm) with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable etc. as required.	59.00	Each		
17	Installation of exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required.				
17a	Upto 450 mm sweep	8.00	Each		

18	Extra for fixing the louvers/ shutters complete with frame for a exhaust fan of all sizes.	8.00	Each		
	MCCB, MCB & DB'S				
19	Providing and fixing following rating and breaking capacity MCCB in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required.				
20a	100 Amp, 16 KA	3.00	Each		
21	Supplying and fixing following way prewired TP&N MCB distribution board of steel sheet for 415 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FR PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required.(But without MCB/ RCCB/ Isolator)				
21a	4 way (4 + 12), Single door	7.00	Each		
21c	12 way (4 + 36), Double door	2.00	Each		
22	Supplying and fixing following ways surface/ recess mounting, vertical type, 415 volts, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 amps tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's, with provision of 100 amps TP 16 KA MCCB as incomer, interconnection between incomer MCCB and bus bars (but without MCB's/ MCCB) as required . (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)				
22a	4 Way TP	3.00	Each		
23	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
23a	Single pole	170.00	Each		
23b	Single pole and neutral	10.00	Each		
23c	Double pole		Each		

		10.00			
23d	Triple pole	10.00	Each		
23e	Triple pole and neutral	10.00	Each		
24	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	30.00	Each		
25	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
25a	40 amps	7.00	Each		
25b	63 amps	2.00	Each		
26	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
26a	40 amps	7.00	Each		
26b	63 amps	2.00	Each		
27	Supplying and fixing TP sheet steel enclosure on surface/ recess along with 16/25/32amps 415 volts "C" curve TP MCB complete with connections, testing and commissioning etc. as required.	6.00	each		
28	Supplying and fixing 30 amps, 415 volts, TPN industrial type, socket outlet, with 4 pole and earth, metal enclosed plug top alongwith 30 amps "C" curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	19.00	Each		
29	Providing and fixing M.V. danger notice plate of 200 mm X 150 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	6.00	Each		
	CABLE TRAYS				

30	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
30a	100 mm width X 50 mm depth X 1.6 mm thickness	50.00	Metre		
31	Supplying and installing following size of perforated pre-painted M.S. cable trays bends with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
31a	100 mm width X 50 mm depth X 1.6 mm thickness	50.00	Each		
32	Supplying and installing following size of perforated pre-painted M.S. cable trays reducers with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
32a	100 mm width X 50 mm depth X 1.6 mm thickness	20.00	Each		
34	Supplying and installing following size of perforated pre-painted M.S. cable trays Tee's with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
34a	100 mm width X 50 mm depth X 1.6 mm thickness	20.00	Each		
35	Supplying and installing following size of perforated pre-painted M.S. cable trays cross members with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
35a	100 mm width X 50 mm depth X 1.6 mm thickness	20.00	Each		
	E A R T H I N G				

36	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	3.00	Each		
37	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	8.00	Set		
38	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	8.00	Set		
39	Supplying and laying 6 SWG G.I. wire at 0.50 metre below ground level for conductor earth electrode, including connection/ termination with GI thimble etc. as required.	200.00	Metre		
40	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	420.00	Metre		
41	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	340.00	Metre		
	LIGHTNING CONDUCTOR				
42	Providing and fixing of lightning conductor finial, made of 25 mm dia 300 mm long, G.I. tube, having single prong at top, with 85 mm dia 6 mm thick G.I. base plate including holes etc. complete as required.	8.00	Each		
43	Fixing of lightning conductor finial (single prong) with base plate including holes etc. complete as required.	8.00	Each		
44	Jointing copper / G.I. tape (with another copper/ G I tape, base of the finial or any other metallic object) by riveting / nut bolting/ sweating and soldering etc as required.	20.00	Each		
45	Providing and fixing copper tape 20 mm X 3 mm thick on parapet or surface of wall for	200.00	Metre		

	lightning conductor complete as required.(For horizontal run)				
46	Providing and fixing copper tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For vertical run)	240.00	Metre		
47	Providing and fixing testing joint, made of 20 mm X 3 mm thick copper strip, 125 mm long, with 4 nos. of tinned brass bolts, nuts, chuck nuts and spring washers etc. complete as required.	60.00	Each		
48	Providing and fixing testing joint, made of 20 mm X 3 mm thick G.I. strip, 125 mm long, with 4 nos. of G.I. bolts, nuts, chuck nuts and spring washers etc. complete as required.	60.00	Each		
49	Providing and laying copper tape 32 mm X 6 mm from earth electrode directly in ground as required.	200.00	Metre		
	MV CABLE LAYING				
50	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
50a	Upto 35 sq. mm	90.00	Metre		
50b	Above 35 sq. mm and upto 95 sq. mm	170.00	Metre		
51	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
51a	Upto 35 sq. mm (clamped with 1mm thick saddle)	20.00	Metre		
51b	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	40.00	Metre		
52	Supplying and making cable route marker with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) of size 60 cm X 60 cm at the bottom and 50 cm X 50 cm at the top with a thickness of 10cm including inscription duly engraved as required.	90.00	each		
	MV CABLE JOINTING & END TERMINATION				
53	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC				

	sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
53a.	3½ X 95 sq. mm (45mm)	2.00	Each		
53b	3½ X 70 sq. mm (38mm)	2.00	Each		
53c	4 X 25 sq. mm (28mm)	8.00	Each		
	NETWORKING				
54	Supplying and fixing following rating, 415 volts, C curve MCB in the existing MCB DB, enclosure complete with connections, testing and commissioning etc. as required.				
54c	63A TP MCB	3.00	Nos		
55	Supplying and fixing TP sheet steel enclosure on surface/ recess along with 63 amps 415 volts "C" curve TP MCB complete with connections, testing and commissioning etc. as required.	6.00	each		
56	Supply & drawing Cat 6E cable in the existing surface / recessed steel / PVC conduit including connection to outlet as required.	780.00	mts		
	Supply installation testing and commissioning of 36u rack with cabinet with all accessories etc complete.(Including termination with jcak and module).	1.00	Set		
57	Supplying and fixing modular RJ 45 computer socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.	24.00	Each		
58	Supplying and fixing following Telephone krone module in box made of plastic including hinged door, krone module with connection etc. as required.				
58a	50 pair krone module	1.00	Each		
	CABLES				
59	Supply of following size 1.1 KV grade XLPE insulated, PVC sheathed, armouredAluminium conductor power cable conforming to IS 7098 (Part 1) amended upto date.				
59a	3.5C x 95 sqmm	100.00	m		
59b.	3.5C x 70 sqmm	70.00	m		

59c	4C x 25 sqmm	90.00	m		
	LIGHT FITTING & FANS				
60	Supply of 2x28W, indoor surface mountable fluorescent CRCA sheet steel power coated body light fixture, 28W T5 lamp, electronic HPF ballast, lamp holder, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required (Wipro WIF 20228 SG or equivalent)	84.00	Each		
61	Supply of 1x28W, indoor surface mountable fluorescent CRCA sheet steel power coated body light fixture, 28W T5 lamp, electronic HPF ballast, lamp holder, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required (Wipro WIF 20128 SG or equivalent)	14.00	Each		
62.	Supply of 1200 mm sweep min three star rated ceiling fan complete with motor, double ball bearing, blades, canopy, 30 cm down rod and without speed regulator suitable for 230 V 50 HZ, AC supply confirms to IS 374/1979 as required complete. (Make UshaTechnix or equivalent).	59.00	Each		
63	Supply of 300mm sweep, metal blades with safety guard suitable for single phase 230 volt, 50Hz AC supply complete with motor, capacitor and all accessories as required complete. (Make : Usha Turbo or equivalent)	8.00	Each		
64	Supply and fixing of telephone instrument of normal type	30.00	Each		
	TRANSFORMER				

65a	Supply, installation, testing and commissioning of Indoor Unitised substation comprising of 250 KVA, 11000 / 433 V, 3 phase AN cooled, vector group Dyn11, Dry type, class F insulated Cast Resin transformer with off load tap change having tapping range of $\pm 5\%$ in steps of 2.5%, provided with LV cable box suitable for terminating 4 runs of 3.5 x 400 Sq mm AYFY/ XLPE cable. The HV terminals of the Transformer connected to 11kV, 400A, 250 MVA Load Break Switch switch with HT fuse, resin cast CT/PT units, provision for TOD Meter for HT metering, ammeter, voltmeter, epoxy encapsuled copper bus bar. 1 set OC & EF relay for the protection of the transformer shall be provided. Earth switch shall be provided with front operated spring charged mechanism.				
65b	The HV cable box shall be suitable for terminating 11kV, 3 core 150 sq mm XLPE cable , along with all standard accessories as per IS 11171 and in conformity with all required standards . Neutral CT of 175/5A, 5P10, 15VA shall be provided on the transformer neutral terminal. The The housing of the USS shall be made up of 2 mm thick CRCA sheet. Door interlock to prevent access to live terminal of HT breaker shall be provided. The enclosure shall be compartmentalised. The enclosure shall also house 1 no. emergency trip push button.	1.00	SET		
66	Supply of 11kV, 3C 95sqmm (E) grade XLPE insulated, PVC sheathed compact circular armouredaluminium conductor HT power cable, insulation screened with extruded semi conducting compound in combination with copper tape suitable for 11kV earthed system confirming to relavent standard.	120.00	mts		
	DG SET				

67a	Supply, Installation, Testing and Commissioning of 125KVA water cooled, radiator type, four stroke, electric start D.G Set with acoustic enclosure and control panel. The DG shall be suitable for AMF operation. The alternator shall be brushless, self excited, self regulated, brushless, suitable for continuous operation at 1500 rpm, generating 415 V +/- 5% at 0.8 p.f, 50Hz, 3 phase, 4 wire system generally conforming to BS: 2613 & IS: 4722. The control panel shall be provided with 1 no. 250A FP 30kA MCCB with O/C & SC protection, ammeter, voltmeter, energy meter, frequency meter, power factor meter, low set earth fault relay using 140/5A 5P10 10VA CT in the neutral earthing conductor .				
67b	Both Engine and Alternator shall be mounted on common channel iron base frame, and with standard accessories such as antivibration pad, lead acid batteries (as specified by engine manufacturer) and engine driven battery charger along with leads, battery stand, fuel piping from fuel tank to Engine, electronic governor, Residential silencer, GI exhaust pipe insulated and clad with aluminium shall be taken above the building with cowl at top, suitable size cable termination box etc as required. Rate shall be inclusive of all lift, lead charges. The work should be as per Electrical Inspectorate / Pollution control board norms.	1.00	set		
	LT Panels				
68	Supply, Installation, Testing & Commissioning of Main panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system with busbars extendable on both sides, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	INCOMER				

2 No.400A, FP, 50kA, EDO, microprocessor based ACB with 3 OC, SC, EF release with shunt trip coil.				
1 No. 400A, FP, 50kA, EDO, microprocessor based ACB with 3 OC, SC, EF release with shunt trip coil.				
BUSBARS				
1 Set of 1000 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
INSTRUMENTS				
2 Nos 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
2 Nos 3 phase 4 wire CT operated energy meter, 5-10A, Acc. Class 1.				
2 Set of phase indicating lamps, LED type, RYB.				
2 Set of 2A 10kA C curve SP control MCB				
1 Set of 400/5A, Class 1.0, 15VA, Cast Resin CT for metering.				
1 Set of 400/5A, Class 1.0, 15VA, Cast Resin CT for metering.				
1 No. AMF relay with all requirement for the automatic operation of the DG set.				
2 set Analogue Voltmeter, Acc class 1, with voltmeter selector switch				
6 nos of Analogue Ammeter, Acc. Class 1				
2 set low set earth fault relay for the transformer and DG set.				
OUTGOING				
2 Nos. 125A, TPN, 35kA, MCCB with Thermal Magnetic release, lcs=lcu, having adjustable over load & short circuit protection.				
1 Nos. 100A, TPN, 25kA, MCCB with Thermal Magnetic release, lcs=lcu, having adjustable over load & short circuit protection.				
Provision for capacitor bank feeder				
Spare 2 nos				
1 Nos. 63A, TPN, 25kA, MCCB with Thermal Magnetic release, lcs=lcu, having adjustable over load & short circuit protection.	1.00	Job		
WATER PUMP				

69	Supply, Installation, testing & commissioning of Horizontal Monoblock pump set having CI casing & CI impeller, suitable rated 3 phase electric motor complete with all required accessories for discharge of 200 lpm and head 15m. The system shall have Pressure guage on delivery line with isolation cock, level controller. Pumps should be inclusive of vibration elimination pads, base frames etc. The motor shall be provided with suitable rating DOL starter with O/L relay, single phase preventer, over & under voltage relay.	1.00	No		
70	Providing and fixing 32mm NB PVC pipe conforming to IS Standards (pressure 10kg/cm ²) complete including all fittings, fixtures, cutting, chasing in walls and making good the walls, testing of joints, concealing the pipes wherever required complete with all required accessories.	140.00	Metre		
71	Providing and fixing 32mm NB gun metal gate valve with CI wheel of IS marked approved quality (Screwed End) with all required accessories.	100.00	No		
	YARD LIGHT				
72	Supply & installation of Hot dipped Galvanised tubular swaged pole of 90 micron zinc coating with tensile strength 410 Mpa of overall length 9 Mtrs long single arm swan neck as per IS 2713. The pole shall have outside dia & thickness as 140x5.40, 115x4.5, 89x3.25mm, & sectional length 5.00+2+2 Mtrs along with 300 x 300 x 10 mm MS base plate welded at bottom. The pole shall have planting depth of 1.5 mtr & erected in PCC 1:2:4. The pole shall be provided with suitable size polycarbonate loop in loop out box. The loop in loop out box shall have 3 phase power connector or bus bar of required current rating for loop in loop out of cable, 4A C curve SP MCB. Required dia GI pipe shall be provided in the foundation for taking cable in & out from the pole. The cost of the civil foundation shall be measured along with civil items.	5.00	Each		

73	Supply, installation, testing & commissioning of IP66,150W MH street lighting, with die cast aluminium housing, anodised aluminum reflector, toughened glass, stainless steel toggle, heavy duty copper ballast, pf capacitor, 1x150W MH lamp etc as required. The light fitting shall be suitably installed with all required accessories to poles. The item shall include 3C x 1.5 sqmm PVC insulated copper unarmoured cable for connecting between the luminaire and the loop in loop out box. (Similar to Wipro WSH 71150 or equivalent).	5.00	Nos		
74	Supply of 15" long rubber Hand gloves 15KV grade of approved make	2.00	Pair		
75	Supply and fixing anodised aluminum glass framed shock treatment chart.	1.00	Job		
76	Supply & laying ISI marked electrical grade chequered type rubber mat of size 2m x 1m x 6 mm suitable for 415V power supply.	4.00	Nos		
	SMOKE DETECTION & FIRE ALARM SYSTEM (ADDRESSABLE)				
79	Supply, Installation & Testing of GE / Morley/Honey well make addressable Photoelectric type Smoke detector for below false ceiling with base plate.	20.00	Nos		
80	Supply, Installation & Testing of GE / Morley/honeywell make addressable photoelectric type Heat detector with base plate	20.00	Nos		
81	Supply, Installation & Testing of Response Indicator	10.00	Nos		
82	Supply, Installation & Testing of Addressable type Electronic Hooter complete with line matching transformer & connected to the main control panel amplifier to produce alter / evacuation tone for public	3.00	Nos		
83	Supply, Installation & Testing of of Addressable type Manual Call Point with a glass cover marked " IN CASE OF FIRE BREAK GLASS"	3.00	Nos		
84	Supply, Installation, Testing & commissioning of Fault Isolator module	3.00	Nos		
85	Supply of Cable (2cx 1.5 Sq mm cu Ar Cable) (Red colour only) with necessary accessories and hardware etc.	600.00	Rmt		

86	Laying of Cable (2cx 1.5 Sq mm cu Ar Cable) on surface with necessary accessories and hardware etc. as required	600.00	Rmt		
87	Supply, Installation, Testing & commissioning of Two Loop non - expandable addressable type Fire Alarm Panel with Battery backup with capacity for 99 addressable devices including event logging facility, printing facility, interface feature & including all necessary hardware & accessories, etc. complete as required. (GE / Morley)	1.00	Nos		
	LIFTS				
	LIFT				
89	Supply, installation, testing & commissioning of electric traction type elevator of following capacity and type suitable for operation on 415 V, 3 phase, 50 Hz AC supply, having AC variable voltage and variable frequency type traction control, with machine room, speed of 1.2Mtr/sec, electromagnetic brake system/equivalent, simple operations, operating control panel with luminous buttons, overload warning indicator, battery operated alarm bell, LED type emergency light, intercom suitable for hook up to EPABX, infrared ray sensing door protection for full height, reverse phase relay on controller, fireman's switch at ground floor, digital car positions indicator in car and at all positions indicator in car and at all floors with Up/DOWN direction, all signal fixtures in stainless steel faceplates, light fixtures, ventilation fan, etc complete with all accessories including automatic rescue device in the event of power failure etc., as required.				
	The traction motor placed directly above the hoistway in Machine Room and elevator shall be of gearless type with travel height of 12.mtrs. complete as per technical specification, simplex full collective operation with/without attendant. Car/Hoistway Entrance, protected by stainless steel hairline doors and clear side(telescopic) opening min 1200mm x 2000mm height. Complete with necessary scaffolding, electrical panel, logic control panel and shaft lighting etc required for the erection of the elevators				

	8 passengers capacity elevator, 3 stops & 3 openings car size dimensions suitable for 8 passenger entrance at front side on all the serving floors, provided with matt finish stainless steel panel on all four side, stainless steel mirror finish ceiling, stainless steel hand rail on three sides complete as per specifications.	1.00	each		
	CENTRALISED UPS SYSTEM (POWER BACK UP SYSTEM)				
90	Supply, Installation, Testing & Commissioning of 10 KVA Online UPS (3 i/p – 1 o/p) including :-				
	Double Conversion Technology with Static Bypass For 30 minute backup to the stated load complete with all necessary hardware & accessories, etc. complete as required.				
	Required number of SMF Battery - 12 V for Battery backup upto 30 minutes With Battery Rack and Cables along with necessary hardware & accessories, etc. complete as required.				
	Network management card (OC WAP Card) for the UPS to connect to the server. (If required.)				
	Delivery & Installation charges - Inclusive				
	Full set as above	2.00	Set		
	AIR CONDITIONING SYSTEM				
91	Supply of Air Cooled High Wall mounted Split Air Conditioner of following capacities consisting of high wall mounted type room unit (fan coil) with cordless remote control, outdoor condensing unit comprising of energy efficient suitable rotary compressor for operation on single phase, 230 V, 50Hz supply, upto 4 m distance refrigerant copper piping with 13mm nitrile rubber insulation, comprising of 1" dia drain PVC pipe with insulation 5m, canvas connections, full electrical cabling from power plug near indoor unit and to outdoor unit 4m distance, outdoor unit MS stand, suitable stabilizer etc complete as required. Approved makes, AC :- Carrier/Voltas/Bluestar/Panasonic Approved makes - Stabilizer :- V Guard/Everest/Voltas				
	2TR minimum 3 star rated as per BEE		No		

		9.00			
	1.5TR minimum 5 star rated as per BEE	6.00	No		
92	Installation, testing and commissioning of the above machines including fixing the outdoor unit on a raised platform/MS Stand as per manufacturers recommendation and fixing of room (fan coil) unit on wall, providing and making interconnection between room & condenser as per site conditions with first charge refrigerant gas.	15.00	No		
93	Supply, installation, testing and commissioning of suitable hard drawn copper refrigerant piping additional length for 1.5TR machines with 13 mm nitrile rubber insulation & suitable size electrical cabling interconnecting the condensing unit to evaporating unit for split units as per site condition. Approved makes :- Totaline/Piyush/Mandev	50.00	RM		
94	Supply & fixing of PVC drain pipe additional length of 25mm dia ISI marked, connecting the drain lines from the indoor units to floor sump, with 9mm nitrile rubber insulation as per specification	50.00	RM		
	Approved makes :- Any ISI marked				
95	APFC PANEL				
	Supply, Installation, Testing & Commissioning of 125kVAR APFC panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system with busbars extendable on both sides, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	INCOMER				
	1 No 315A, FP, 35kA, MCCB with Thermal Magnetic release, lcs=lcu, having adjustable over load & short circuit protection.				
	BUSBARS				

	1 Set of 400 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	INSTRUMENTS				
	1 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	1 Set of phase indicating lamps, LED type, RYB.				
	1 Set of 2A 10kA C curve SP control MCB				
	1 Set of 400/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	1 no. 6 stage APFC relay				
	5 set On, Off push button				
	5 set On, Off LED type indication lamp				
	OUTGOING				
	6 Nos. 63A, TPN, D curve, MCB				
	2 Nos. 50kVAR MPP heavy duty capacitor with capacitor duty contactor & 7% detuned harmonic filter.				
	SPARE for 1 Nos. 25kVAR MPP heavy duty capacitor with 7% detuned harmonic filter directly connected.	1.00	Job		
	PORTABLE CHEMICAL FIRE EXTINGUISHER				
96	Supply, installation, testing and commissioning of following types of extinguisher with provision of wall bracket (fixed with anchor fastner).				
	ISI marked (IS:940) portable chemical fire extinguisher, water (gas pressure) type capacity 9 litres with gun metal cap and nozzle and complete in all respects including initial fill and wall suspension brackets	5.00	Nos		
97	ISI marked (IS:2171) Co2 water type fire extinguishers Fire Extinguisher with Gun Metal cap and nozzle and complete in all respects including initial fill and wall suspension bracket - 2 Kg	5.00	Nos		
99	Providing and fixing in position ABC type fire extinguishers of 5 liters capacity each.	5.00	Nos		

100	Supplying and installing at approved location approved make fire buckets of 24 gauge galvanized steel sheet, standard 9 litre capacity and of round bottom shape, painted white inside and red outside and black on the bottom, inscribed with letters "FIRE" in black and gold. Cost shall be inclusive of providing MS stand duly painted over a coat of primer.	2.00	Nos		
	Total				