NOTICE INVITING TENDER

Tender Ref. No.: 70(5)/2026-MMG **Dated: 11/11/2026**

Name of work: "Renovation of Toilets in Anusandhan Bhawan at Plot No. C-56/1, Sector-62, C-DAC, Noida - 201309 (U.P.)"

Centre for Development of Advanced Computing (C-DAC), Noida under the Ministry of Electronics and Information Technology, Govt. of India, invites Bidding on Central Public Procurement Portal (CPPP) website on https://eprocure.gov.in/eprocure/app in two bid system from reputed, experienced vendor for **"Renovation of Toilets in Anusandhan Bhawan at Plot No. C-56/1, Sector-62, C-DAC, Noida - 201309 (U.P.)"** as per the details given below-

Description	Location	Remarks
Renovation of Toilets, in Anusandhan Bhawan at Plot No. C-56/1, Sector- 62, C-DAC, Noida - 201309 (U.P.)"	Anusandhan Bhawan at Plot No. C-56/1, Sector-62, C -DAC, Noida	Scope of work, Terms conditions, BOQ, etc. as per Annexure-**A to J,** Layout Annexure-K.

The schedule dates of tender document are as below:

i. Issue of Tender Document: 11/11/2026

ii. Last date of receipt of Bids: By 15:00 HRS IST on 30/11/2026

iii. Technical Bid Opening: At 15:30 HRS IST on 1/12/2026

The agencies having adequate experience and have successfully executed similar type of work for a government department/ organization / reputed companies during past three years need to upload the work order or satisfactory completion certificates issued by the client clearly indicating the value of work along with necessary registrations like GST / PAN etc. in CPPP portal. Interested vendors are advised to inspect the above site during working days between 10.00 HRS to 17.00 HRS and then submit their offer through CPPP portal duly signed and stamped before the due date. The prospective bidders should complete the pre-bid inspection and satisfy themselves before submitting their quotes and site visit report in Annexure-D certified by C-DAC and must be uploaded with the bid document without fail.

The bidders need to submit EMD of Rs.2,50,000 /- for participation in the tender.

CDAC Noida bank details: -

Bank Name: Indian Overseas Bank
Branch Address: Sector-58, Noida
Bank Account Number 171901000007860
Account Type: Saving A/c
IFSC Code: IOBA0001719
MICR Code of Bank 110020082

In place of EMD, MSE and Startup bidders, upon submission of relevant certificates have the option to submit Bid Security Declaration letter duly signed & stamped by the authorized signatory of the bidding firm stating that “If we withdraw or modify our Bid submitted to C-DAC against the subject tender during the period of bid validity, or if we are awarded the contract and we fail to sign the contract, or to submit a performance security deposit before the deadline defined in the tender document, we hereby agree that CDAC has full rights to suspend/blacklist our firm/company for a period up to two years from participating in any of the tender to be invited by C-DAC henceforth. Further, C-DAC can circulate the suspended/blacklisted information of our firm to other government departments through concerned Ministry as a matter of precaution" (Annexure–E).

In case of any query, technical support, eligibility or scope of work, site visit etc. for the above site inspection, please contact the following Members:

1. Sh. Anil Kumar (PSS- In-charge Admin), Mob: 9811132515
2. Sh. Puneet Gurmukhani (Sr. Admin. Officer), Ph: 0120-2210800, Ext-141
3. Sh. N.C. Pahwa (Consultant Civil), Ph: 0120-2210800, Ext-104
4. Sh. Avinash Goel (Consultant Electrical) Ph: 9999483544

Email: headmmg-noida@cdac.in

GC (MMG)

Phone: - 0120-2210823/824/825

ANNEXURE- A

Name of work: "Renovation of Toilets in Anusandhan Bhawan at Plot No. C-56/1, Sector - 62, C-DAC, Noida - 201309 (U.P.)"

SCOPE OF WORK

1. Project Objective & Overview

The existing toilet facilities across the Anusandhan Bhawan Building spanning from the ground to the fifth floor require a comprehensive renovation. The initial building design no longer aligns with the current operational reality. A significant increase in occupant density has led to severe availability constraints and logistical bottlenecks, particularly during peak hours. Furthermore, the current layout restricts ladies' and gents' facilities to alternate floors. This segregated arrangement causes major operational inefficiencies and daily inconvenience for both staff and students. Compounding these spatial challenges, the plumbing systems and sanitary ware are deteriorating rapidly, requiring continuous, unsustainable, and costly maintenance. To resolve these issues, a complete structural overhaul and modernization project is required. This initiative will reconfigure the spatial layout to provide dual-gender facilities on every floor, optimize traffic flow for higher occupancy, and replace obsolete fixtures with durable, modern, and low-maintenance solutions.

The objective of this project is the complete renovation, modernization, and structural refurbishment of the ladies and gent's toilet blocks from the Ground Floor to the Fifth Floor (total 12 toilet blocks). The project aims to replace aging infrastructure with modern, water-efficient, hygienic, and aesthetically premium facilities using latest sensor-based technologies and high-end finishes, **without disrupting the daily operations of the running office**.

2. Detailed Scope of Work

a) Dismantling and Demolition Works (All Floors)

- Carefully demolish and dismantle existing brickwork laid in cement mortar, dry brick pitching, and internal partition walls.
- **Fixtures & Fittings:** Careful dismantling and removal of all existing old sanitary wares (water closets, urinals, washbasins), water supply fittings (taps, valves, mixers), and drainage fixtures.
- **Plumbing Strip-Out:** Disconnect and remove obsolete plumbing lines, including Cast Iron (C.I.) / rainwater pipes, and Galvanized Iron (G.I.) pipes of existing sizes and diameters.
- **Finishes:** Chipping and removal of existing old wall tiles, floor finishes, under-bed mortar, and waterproofing layers down to the structural slab.
- **Services:** Removal of old electrical wiring, switchgears, light fixtures, exhaust fans, Electrical MCC Panel Boxs.
- **Joinery:** Dismantling of old doors, window frames, ventilators, and toilet partition walls.
- **Disposal:** Safe accumulation, lowered transit, and environment-compliant disposal of all generated debris outside the office campus premises at designated municipal dumping grounds.

b) Civil, Structural, Electrical and Architectural Modernization

- **Brick Masonry:** Construct new full-brick and half-brick masonry walls using approved bricks and cement mortar to reconfigure the restroom layouts.
- **Scaffolding:** Provide, erect, and maintain stable double scaffolding systems to safely facilitate masonry, plastering, and high-level installation works.

- **Waterproofing:** Application of high-performance, multi-layered chemical waterproofing treatment (e.g., polyurethane or elastomeric acrylic based) on floors and up to 300 mm height on walls, followed by pressure testing for water-tightness.

- **Sunken Floor Treatment:** Supply, lay, and level approved quality lightweight cinder filling within the sunken floor slabs and other designated locations. The process must include systematic watering, light ramming, and thorough compaction as per engineering drawings.

- **Flooring & Walls:** Supply and laying of premium-grade, anti-skid granite floor tiles, and designer vitrified wall cladding tiles up to false ceiling height with matching grouting.

- **Granite Vanity Counters:** Provide and fix mirror-polished granite stone slabs laid over a 20mm thick cement mortar bed (1:4 mix ratio).

- **Sink Cut outs:** Make precise machine cut outs within the granite slabs to accommodate under-counter washbasins and sinks.

- **Jointing and Finishing:** Joint all stone segments seamlessly using specialized epoxy adhesives, matching white cement with pigments, and executing fine epoxy touch-ups, rubbing, curing, and polishing to achieve a uniform, high-gloss finish.

- **Sanitary Ware:** Installation of premium, Floor-Mounted European Water Closets (WCs) with dual-flush tanks, integrated health faucets, and designer counter sunk washbasins.

- **Smart Automation:** Installation of sensor-operated automatic taps for washbasins, sensor-driven touchless flush valves for urinals, and automatic hand dryers.

- **Carpentry & Joinery:** Installation of heavy-duty, moisture-resistant solid acrylic/compact laminate (HPL) toilet cubicle partitions, modern water-resistant flush doors, and UPVC/powder-coated aluminum window frames with frosted glass.

- **Ceiling & Aesthetics:** Installation of moisture-resistant grid false ceilings with integrated trap doors for maintenance access. High-quality mirrors over washbasins.

c) Plumbing Works

- **Plumbing (Internal):** Installation of new internal water supply distribution lines using high-density composite or CPVC pipes, and internal drainage networks using sound-dampening SWR (Soil, Waste, Rainwater) pipes. The bidder shall provide all necessary labor, tools, tackles, ladders, testing equipment, Consumables, fixing accessories, and safety equipment required for proper execution of the work. Any item, material, accessory, or activity not specifically mentioned in the

- Bill of Quantities (BOQ) but required for successful completion, safe operation, testing, and commissioning of the system shall be deemed to be included within the bidder's scope without any additional financial implication to the C-DAC.

- The bidder shall coordinate closely with the C-DAC's representatives, consultants, civil agencies, electrical agencies, and other contractors working at site to ensure smooth and uninterrupted execution of the project without affecting existing operations.

- All installation works shall be executed in a neat, professional, and aesthetically acceptable manner. The bidder shall ensure proper cable routing, dressing, clamping, segregation, and identification throughout the installation.

- The bidder shall maintain proper housekeeping during execution and shall remove all debris, scrap material, unused consumables, and waste generated during the course of work on a regular basis.

- Upon completion of the work, the bidder shall submit detailed as-built drawings, cable schedules, test reports, labelling records, warranty certificates, and all associated documentation for C-DAC approval.

d) Renovation of Main Vertical Shaft Lines

- **Dismantling Shafts:** Complete removal of all aged, rusted, or leaking vertical water supply headers, down-take pipes, soil stacks, waste stacks, and vent pipes inside the structural shafts.

- **New Piping Networks:** Supply, installation, testing, and commissioning of new vertical shaft lines of appropriate, hydraulically calculated sizes using heavy-duty UV-stabilized UPVC/PP-R pipes (for water supply) and heavy-duty SWR pipes (for drainage).

- **Structural Support:** Securing all shaft lines with heavy-duty, rust-resistant MS/GI brackets, clamps, and structural anchors at regular vertical intervals. Proper fire-stopping sealing at all floor slab penetrations.

3. Execution Methodology for Running Office Operations

To ensure zero downtime for the office staff and maintain continuous operational capability, the work shall be executed strictly under a **Phased Floor-Wise Execution Model**:

1. **Consecutive Floor Strategy:** Only **one floor's toilet block** (or one set of lady's/gents toilets on a single floor) shall be taken up for renovation at any given time.

2. **Signage & Diversion:** Before closing a toilet block, prominent directional signage must be placed at lift lobbies and corridors directing employees to the operational toilets on the immediate floors above and below.

3. **Dust & Noise Isolation:** The active work zone must be completely sealed using floor-to-ceiling dust barrier sheets (heavy-gauge PVC/tarpaulin) to prevent dust, debris, and odour migration into office workspaces.

4. **Core Drilling & Noise Windows:** High-noise operations (e.g., heavy concrete chipping, core drilling through slabs) must be restricted to non-office hours (evenings post 6:00 PM, night shifts, or weekends).

Material Category	Approved Brand Makes	Specific Functional Requirements
Sanitary Ware *(WCs, Urinals, Washbasins)*	**Toto / Kohler / Jaquar (Premium Range) / Hindwares**	Wall-hung layouts, rimless technology for easy cleaning, and anti-bacterial glaze coatings to prevent stains and germs.
Sensor Faucets & Flush Valves	**Toto / Kohler / Euronics / Jaquar / Hindwares**	Infrared sensor-operated, heavy-duty chrome finish, battery/mains operated with water-saving aerators.
Premium Wall & Floor Tiles	**Johnson / Kajaria / Somany / Nitco**	Large format designer vitrified tiles for walls; Matte-finish, heavy-duty anti-skid vitrified/granite tiles for flooring.
CP Fittings *(Health Faucets, Diverters)*	**Jaquar / Kohler / Grohe**	High-durability brass bodies with premium chrome plating resistant to scaling and corrosion.
Toilet Cubicle Partitions	**Euronics / Merino / Greenlam**	12mm thick Solid Compact Laminate (HPL) or acrylic panels; completely water, moisture, and scratch-resistant with stainless steel (SS 304) hardware.
Exhaust Fans & Ventilation	**Panasonic / Havells / Orient**	Low-noise, high-CFM continuous-duty inline exhaust fans with backdraft dampers.

Water Supply & Drainage Pipes	**Supreme / Astral / Ashirvad**	Lead-free CPVC/Composite pipes for hot & cold water; Ring-fit SWR PVC pipes for noise-dampening drainage systems.
Electrical Wires & Switches	**Finolex / Havells / Legrand**	Fire-Retardant Low-Smoke (FRLS) copper wiring; sleek modular switches with anti-bacterial surfaces.

5. **Intermittent Shaft Management:** Connection of new internal plumbing to the vertical shaft lines must be pre-fabricated and executed during weekend shutdown windows to avoid water supply interruptions to operational floors during regular working weekdays.

4. Quality Assurance, Safety, and Terms

- **Material Approvals:** All material samples (tiles, sanitary ware, sensor fixtures, pipes, cables) must be approved by the Engineer-in-Charge before procurement and bulk supply.
- **Testing:** Hydraulic pressure testing for water lines and smoke/water testing for drainage lines must be conducted and documented prior to closing wall chases and laying floor tiles.
- **Housekeeping:** Daily cleaning of common corridors, transit passages, and lifts used for material

ANNEXURE: APPROVED MAKES OF MATERIALS

To maintain a premium aesthetic appeal, long-term durability, and maximum hygiene, all materials and fixtures used in the renovation must strictly conform to the following approved brands or equivalent market leaders approved by the competent authority:

To renovate the toilets without disrupting the other floors, it is necessary to decouple the vertical shaft work from the internal floor finishes by installing the new shaft lines parallel to the old ones first.

The Optimal Execution Strategy may be adopted as under-

[Step 1: Install New Shaft Lines Parallel]
↓
[Step 2: Floor-by-Floor Internal Renovation]
↓
[Step 3: Tie-in/Switchover to New Shaft (Floor-by-Floor)]
↓
[Step 4: Final Decommission & Dismantling of Old Shaft]

B.ELECTRICAL WORKS:

The scope of work includes supply, installation, testing, commissioning, and documentation of electrical power point works and associated modifications for the toilets in the Anusandhan Bhawan Building, complete in all respects as per approved drawings, site requirements, and relevant standards.

SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTRICAL WORKS AT TOILETS OF ANUSANDHAN BHAWAN, INCLUDING REPLACEMENT OF MCC PANELS AND CONNECTION OF MOTORS FOR AIR HANDLING UNITS, C-DAC, NOIDA

1**. SCOPE OF CONTRACT**

1.1 The scope of this tender comprises the Supply, Installation, Testing and Commissioning of electrical works for the toilets and associated electrical installations at Anusandhan Bhawan, C-DAC, Noida, including dismantling and removal of the existing MCC panels, supply, installation, testing and commissioning of new MCC panels, and provision of complete power and control connections for the motors of Air Handling Units, along with all associated electrical works. The work shall be complete in all respects, including all necessary accessories, wiring, cabling, cable termination, earthing, protection, control and interlocking arrangements, testing and

commissioning, as applicable, in accordance with the BOQ, Scope of Work, Technical Specifications, approved drawings, actual site requirements, applicable standards and codes, and instructions of the Engineer-in-Charge.
1.2 The work shall include supply of all required materials, equipment, accessories, consumables, labour, tools and tackles, transportation, loading/unloading, shifting, installation, fixing, wiring, cable laying, termination, testing, commissioning and all incidental works necessary for completion of the installation.
1.3 The Contractor shall be responsible for delivering a complete, safe, tested, commissioned, functional and operational electrical installation covered under the BOQ.
1.4 The quoted rates shall be deemed to include all minor accessories, consumables, hardware, supports, fasteners and incidental requirements necessary for satisfactory completion of the respective BOQ items, unless specifically excluded in the tender documents.

PART-A: GENERAL ELECTRICAL WORKS

2. **SITE VISIT AND VERIFICATION**
2.1 The Bidder is advised to inspect the site and assess the existing conditions, available electrical infrastructure, routes, locations of electrical points, existing DBs/MCC panels, motor locations, cable routes, access conditions and other site-related requirements before submitting the bid.
2.2 The Bidder shall be deemed to have satisfied itself regarding the site conditions and the nature and extent of work involved before submission of the bid.
2.3 No claim for additional cost or extension of time arising from ignorance of site conditions shall ordinarily be entertained after award of the contract, except where specifically approved by C-DAC in accordance with the applicable Tender Contract conditions.

3. **ELECTRICAL POINT WIRING**
3.1 The Contractor shall provide complete wiring for the electrical points indicated in the BOQ/approved drawings, including light points, exhaust fan points and other specified electrical points.
3.2 The work shall include wiring from the respective controlling point/circuit up to the electrical outlet/equipment, including phase, neutral and earth conductors.
3.3 The Contractor shall provide all necessary conduits, junction boxes, connectors, lugs, ferrules, thimbles, fixing accessories and other incidental materials required for complete installation.
3.4 All wiring shall be properly terminated, dressed, identified and tested before commissioning.

4. **CIRCUIT AND SUB-CIRCUIT WIRING**
4.1 The Contractor shall provide complete circuit/sub-circuit wiring from the respective Distribution Board to the designated electrical points as specified in the BOQ.
4.2 Wiring shall be carried out using the cable sizes and types specified in the approved BOQ/Technical Specifications.
4.3 The scope shall include routing, pulling, dressing, termination and connection of cables, including all necessary accessories.
4.4 Circuit wiring shall be properly segregated and identified to facilitate operation and maintenance.

5. **PVC CONDUIT INSTALLATION**
5.1 The Contractor shall supply and install PVC conduits of the sizes specified in the BOQ, complete with all necessary bends, couplers, junction boxes, saddles, clamps, supports and accessories.
5.2 Conduits shall be installed neatly and securely, either surface-mounted or recessed, as approved by the Engineer-in-Charge.
5.3 All conduit runs shall be properly aligned and adequately supported.
5.4 Wiring shall not be left exposed without suitable mechanical protection.
5.5 The Contractor shall coordinate conduit routes with existing electrical, plumbing, HVAC, fire protection and other services.
5.6 Chasing, embedding and fixing of conduits in walls/ceilings, wherever required, shall include

complete restoration of affected surfaces.

6. **MODULAR SWITCHES AND SOCKET OUTLETS**

6.1 The Contractor shall supply and install modular switches and socket outlets of the ratings and quantities specified in the BOQ.

6.2 The scope shall include modular switches, 5/6A socket outlets, combined 5/6A/15/16A socket outlets with switches and associated modular plates and accessories, as applicable.

6.3 All socket outlets shall be properly earthed and securely fixed.

6.4 Switches and sockets shall be installed at locations and heights approved by the Engineer-in-Charge and coordinated with toilet fixtures and services.

7. **MODULAR GI SWITCH BOXES**

7.1 The Contractor shall supply and install modular GI switch boxes of appropriate size and configuration as specified in the BOQ.

7.2 The boxes shall be securely fixed, properly aligned and suitable for accommodating the specified switches, sockets and modular accessories.

7.3 All modular plates shall be properly fitted and finished without gaps, looseness or misalignment.

8. **DISTRIBUTION BOARDS**

8.1 The Contractor shall supply, install, wire, test and commission the Distribution Boards specified in the BOQ.

8.2 Distribution Boards shall be complete with enclosure, doors, busbars, neutral link, earth bar, DIN rails, internal connections and all necessary accessories required for proper operation.

8.3 The Contractor shall provide and connect the specified incoming and outgoing protective devices.

8.4 All circuits shall be properly identified and labelled on completion.

8.5 DBs shall be installed at locations approved by the Engineer-in-Charge and shall be readily accessible for operation and maintenance.

9. **MINIATURE CIRCUIT BREAKERS (MCBs)**

9.1 The Contractor shall supply and install MCBs of the ratings and characteristics specified in the BOQ/Technical Specifications.

9.2 Each electrical circuit shall be protected by a suitably rated MCB.

9.3 MCBs shall be properly connected, securely mounted and clearly identified.

9.4 Operation of all MCBs shall be checked during testing and commissioning.

10. **RCCB**

10.1 The Contractor shall supply and install Double Pole RCCBs with **30 mA residual current sensitivity**, of the rating specified in the BOQ.

10.2 RCCBs shall be properly connected with the respective electrical circuits and shall provide earth-leakage protection.

10.3 The Contractor shall conduct functional/trip testing of each RCCB and submit the test results as part of the completion documentation.

11**. LED LIGHT FITTINGS**

11.1 The Contractor shall supply, install, test and commission LED light fittings of the type, wattage and quantity specified in the BOQ.

11.2 The fittings shall be complete with LED source/driver and all necessary mounting and connection accessories.

11.3 All light fittings shall be securely installed, properly aligned and connected to the designated circuits.

11.4 Each fitting shall be tested for proper illumination and satisfactory operation.

12**. EXHAUST FANS**

12.1 The Contractor shall supply, install, test and commission exhaust fans of the size, type and quantity specified in the BOQ.
12.2 Exhaust fans shall be complete with all required mounting/fixing accessories and electrical connections.
12.3 The Contractor shall ensure proper alignment, secure fixing and satisfactory operation of each exhaust fan.
12.4 Each exhaust fan shall be tested for proper rotation, operation, abnormal noise and vibration.

13. **EXHAUST FAN LOUVERS/SHUTTERS**
13.1 The Contractor shall supply and install exhaust fan louvers/shutters as specified in the BOQ.
13.2 Louvers/shutters shall be properly sized and securely fixed to provide effective ventilation.
13.3 All necessary frames, fasteners, supports and fixing accessories shall be included in the quoted rates.

PART-B: MCC PANEL REPLACEMENT AND MOTOR CONNECTIONS

14. **DISMANTLING AND REMOVAL OF EXISTING MCC PANEL**
14.1 The Contractor shall carry out complete dismantling and removal of the existing MCC panel in a safe and systematic manner.
14.2 Before commencement of work, the Contractor shall ensure safe shutdown of all connected equipment/loads and complete isolation of the electrical power supply.
14.3 All incoming and outgoing power and control cables connected to the existing MCC panel shall be identified, disconnected and properly tagged/marked for subsequent reconnection.
14.4 Dismantling shall include existing switchgear, busbars, meters, relays, internal wiring, contactors, starters and associated accessories, as applicable.
14.5 Associated conduits, cable glands, supports and other accessories shall be disconnected and removed wherever required.
14.6 Existing earthing connections shall be safely disconnected from the MCC panel.
14.7 The Contractor shall carefully remove the dismantled panel and associated materials without causing damage to the existing building, electrical installations or other services.
14.8 All dismantled materials shall be shifted to the designated scrap/storage area within the premises as directed by the Engineer-in-Charge.
14.9 The Contractor shall maintain proper housekeeping and stacking/disposal of dismantled materials after completion of the work.

15. **SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF NEW MCC PANELS**
15.1 The Contractor shall supply, install, test and commission new MCC panels complete in all respects as per approved drawings, technical specifications, site requirements and directions of the Engineer-in-Charge.
15.2 MCC panels shall be suitable for operation on **415 V, 3-Phase, 50 Hz AC supply** and shall be complete with required switchgear, motor starters, protective devices, meters, relays, contactors, overload relays, control components, indication lamps, selector switches, push buttons, interlocks, busbars, terminal blocks, internal wiring and accessories.
15.3 MCC panels shall be housed in suitably rated **powder-coated CRCA sheet steel enclosures**, complete with necessary compartments, gland plates, cable-entry arrangements and proper identification/labeling.
15.4 The scope shall include transportation, unloading, shifting, positioning, alignment, fixing and grouting of the MCC panels at the designated location.
15.5 The Contractor shall provide all necessary supports, frames, channels, hardware, foundation arrangements and other accessories required for proper installation of the MCC panels.
15.6 The Contractor shall provide concealed/heavy-duty PVC conduits wherever required, including bends, couplers, junction boxes and other accessories.
15.7 Chasing, embedding and fixing of conduits in walls/ceilings, wherever required, shall include complete restoration of affected surfaces.
15.8 The Contractor shall supply, lay, route, dress and terminate all required power and control

cables from the MCC panels to the respective motors/equipment.
15.9 Cable termination shall be carried out using suitable approved **cable glands, compression lugs, thimbles, ferrules, heat-shrink sleeves and identification tags**, complete in all respects.
15.10 The Contractor shall provide and install required earthing conductors/wires from the MCC panels to the existing earthing system, including proper termination using suitable hardware, nuts, bolts and washers.
15.11 Earth continuity shall be tested and earth resistance shall be measured after completion of the installation.
15.12 All switchgear, contactors, overload relays, protective devices, meters, control circuits, interlocks and indication circuits shall be tested.
15.13 Insulation resistance, continuity, phase-sequence and other applicable electrical tests shall be carried out for the complete installation.
15.14 Proper operation of all motor starters, control circuits, protection devices and interlocking arrangements shall be verified.
15.15 Complete testing and operational commissioning of the MCC panels and connected motors shall be carried out under actual operating conditions.
15.16 Any defect or deficiency observed during testing and commissioning shall be rectified by the Contractor at no additional cost to C-DAC.

16. **MCC PANEL DESIGN, DRAWINGS AND APPROVAL**
16.1 The Contractor shall prepare and submit the MCC panel **General Arrangement (GA) drawing, Single Line Diagram (SLD), control schematic, wiring diagram and component details** for approval of the Engineer-in-Charge before fabrication/supply of the MCC panels.
16.2 The Contractor shall incorporate all approved modifications/comments in the panel drawings before fabrication.
16.3 No fabrication or supply of the MCC panel shall be undertaken until the drawings/details requiring prior approval have been approved by C-DAC/Engineer-in-Charge.
16.4 Approval of drawings shall not relieve the Contractor of responsibility for correctness, adequacy, safety and performance of the MCC panels.

17. **MOTOR FEEDERS AND CONNECTED LOADS**
17.1 The new MCC panels shall be provided with suitable outgoing feeders/starters and protection arrangements for the following motors:

Sl. No.	**Motor Details**	**Quantity**
1	2 nos. Motors 2.2 kW 3-Phase, 415 V AC Motor + 2 nos. Motors 1.5 kW 3-Phase, 415 V AC Motor	1 Set
2	2 nos. Motors 1.5 kW 3-Phase, 415 V AC Motor	2 Nos.
3	4 nos. Motors 1.5 kW 3-Phase, 415 V AC Motor	3 Nos.

17.2 Each motor feeder shall be provided with suitably rated switchgear, motor starter/contactor, overload protection, short-circuit protection, isolating arrangement and required control components suitable for the motor rating.
17.3 The Contractor shall verify the actual motor nameplate ratings, full-load current and site conditions before final selection of protective devices and cable sizes.
17.4 Separate outgoing feeders shall be provided for each motor unless otherwise approved by the Engineer-in-Charge.
17.5 All motor power and control cables shall be properly routed, supported, dressed and terminated.
17.6 Motor terminals shall be checked for correct phase sequence and direction of rotation.
17.7 Any correction required for proper motor rotation shall be carried out by the Contractor without additional cost to C-DAC.

PART-C: EARTHING, CABLES AND PROTECTION

18**. EARTHING AND PROTECTIVE CONDUCTOR**

18.1 All electrical equipment, Distribution Boards, MCC panels, socket outlets, motors and exposed conductive parts covered under the contract shall be connected to the existing/provided earthing system, as applicable.

18.2 Protective earth conductors shall be provided along with respective circuits as specified in the BOQ.

18.3 All earth connections shall be mechanically secure and electrically continuous.

18.4 Earth continuity shall be verified during testing and commissioning.

18.5 Earthing conductors shall be suitably sized and installed in accordance with the approved drawings, BOQ and applicable standards.

19. **CABLE TERMINATION AND CONNECTION**

19.1 All cable and wire terminations shall be properly made using suitable lugs, thimbles, ferrules, connectors or other approved accessories.

19.2 No loose, twisted or open electrical joints shall be permitted.

19.3 Where joints are unavoidable, they shall be made only inside suitable junction/accessory boxes using approved connectors.

19.4 All connections inside DBs, MCC panels and switch boxes shall be properly dressed, secured and identified.

19.5 All cables shall be provided with suitable identification tags at both ends wherever required.

20. **MCBs, PROTECTIVE DEVICES AND MOTOR PROTECTION**

20.1 Protective devices shall be suitably rated according to the connected load and prospective operating conditions.

20.2 Motor feeders shall be provided with appropriate short-circuit and overload protection.

20.3 Overload relay settings shall be adjusted in accordance with the actual motor nameplate/full-load current and approved requirements.

20.4 All protective devices shall be tested for proper operation during commissioning.

PART-D: COORDINATION, SAFETY AND EXECUTION

21. **COORDINATION WITH EXISTING INSTALLATIONS**

21.1 The Contractor shall execute the work without causing damage to existing electrical installations, plumbing, sanitary fixtures, walls, ceilings, doors, flooring or other building services.

21.2 The Contractor shall coordinate the locations of electrical switches, sockets, light fittings, exhaust fans, DBs, MCC panels, motor connections and cable routes with existing and proposed services.

21.3 Any damage caused by the Contractor due to negligence or improper execution shall be rectified by the Contractor at his own cost to the satisfaction of C-DAC.

22. **TESTING AND COMMISSIONING**

22.1 The Contractor shall conduct complete testing and commissioning of the entire electrical installation after completion of the work.

22.2 Testing shall include, as applicable:

a) Continuity of conductors and circuits.

b) Insulation resistance of power and control circuits.

c) Earth continuity.

d) Earth resistance measurement.

e) Polarity verification.

f) Phase-sequence verification.

g) Functional testing of MCBs.

h) Functional/trip testing of RCCBs.

i) Socket outlet testing.
j) Testing of LED light fittings.
k) Testing of exhaust fans.
l) Verification of Distribution Board connections.
m) Testing of MCC panel incoming and outgoing feeders.
n) Testing of contactors and overload relays.
o) Testing of protective devices.
p) Verification of control and interlock circuits.
q) Individual no-load and load testing of connected motors.
r) Verification of motor operating current.
s) Verification of motor rotation and direction.
t) Trial operation of the complete MCC system.

22.3 The Contractor shall carry out any additional tests considered necessary by the Engineer-in-Charge to establish satisfactory performance and safety of the installation.

22.4 Any defect or deficiency detected during testing shall be rectified by the Contractor at no additional cost to C-DAC.

22.5 The installation shall be considered ready for acceptance only after satisfactory completion of testing, commissioning and demonstration of the complete system.

23. **SAFETY REQUIREMENTS**

23.1 The Contractor shall comply with all applicable electrical safety requirements, statutory provisions and safety instructions issued by C-DAC.

23.2 The Contractor shall provide appropriate PPE and safety equipment to all personnel engaged in the work.

23.3 Work on existing electrical circuits, DBs, MCC panels and connected equipment shall be carried out only after proper isolation, lock-out/tag-out wherever applicable, and ensuring safe working conditions.

23.4 The Contractor shall take all necessary precautions to prevent electrical shock, short circuit, fire and damage to existing installations.

23.5 Only qualified and experienced electrical personnel shall be deployed for electrical works.

23.6 The Contractor shall deploy competent supervision throughout the execution of the work.

24. **PROTECTION OF EXISTING PROPERTY**

24.1 The Contractor shall adequately protect existing building finishes, equipment and services during execution.

24.2 No cutting, drilling, chasing or modification of structural members shall be carried out without prior approval of the Engineer-in-Charge.

24.3 Any damage caused to the building or existing services shall be made good by the Contractor at no additional cost to C-DAC.

25. **HOUSEKEEPING AND RESTORATION**

25.1 The Contractor shall maintain proper housekeeping at the work site throughout the execution period.

25.2 Cable cuttings, packing material, debris and waste generated during the work shall be removed regularly.

25.3 Any minor chasing, opening or disturbance caused by the Contractor for execution of electrical work shall be properly closed and finished to the satisfaction of the Engineer-in-Charge.

25.4 On completion of the work, the Contractor shall clean the work area and hand over the premises in a clean and usable condition.

25.5 All dismantled MCC panel materials and other scrap shall be shifted to the location designated by C-DAC.

PART-E: MATERIALS, QUALITY AND DOCUMENTATION

26. **MATERIALS AND QUALITY**

26.1 All materials supplied under the contract shall be **new, unused and of approved/reputed make**, conforming to the requirements specified in the BOQ and Technical Specifications.
26.2 Materials shall comply with applicable **BIS/IS/IEC Standards**, wherever specified.
26.3 C-DAC reserves the right to inspect and reject any material that does not conform to the approved specifications or quality requirements.
26.4 Rejected materials shall be removed from the site by the Contractor and replaced with acceptable materials at no additional cost to C-DAC.
26.5 All MCC panel components, outgoing feeders, cables and control circuits shall be suitably identified and labelled.

27. **APPROVAL OF MATERIALS**
27.1 The Contractor shall submit product catalogues, technical datasheets, test certificates, type-test certificates, routine-test certificates and other relevant documents for materials/equipment wherever required by the Engineer-in-Charge.
27.2 Installation of major electrical materials/equipment shall be carried out only after approval, wherever such approval is stipulated by C-DAC.
27.3 Approval of any material shall not relieve the Contractor of responsibility for its quality, performance and compliance with the tender requirements.

28. **WARRANTY / DEFECT LIABILITY**
28.1 The Contractor shall provide warranty/guarantee for supplied materials and equipment as specified in the tender.
28.2 Any defect attributable to defective material or workmanship during the applicable warranty/defect liability period shall be rectified/replaced by the Contractor without any additional cost to C-DAC.
28.3 Warranty certificates/documents for applicable equipment shall be submitted at the time of handover.

29. **COMPLETION DOCUMENTS**
29.1 The Contractor shall submit the following documents, wherever applicable, on completion of the work:
a) Testing and commissioning reports.
b) RCCB/MCB test records.
c) MCC panel testing and commissioning reports.
d) Motor testing and commissioning reports.
e) Insulation resistance test reports.
f) Earth continuity and earth resistance test reports.
g) Warranty/guarantee certificates.
h) Product catalogues/datasheets of installed equipment.
i) Approved/as-built MCC panel GA drawings.
j) Updated Single Line Diagram.
k) Control and wiring schematics.
l) As-built electrical layouts, wherever applicable.
m) Cable schedules and feeder details, wherever applicable.
n) Any other document specifically required by C-DAC.
29.2 The Contractor shall prepare and submit all required documents in the format prescribed by C-DAC and shall provide **six (6) copies of each document**, unless otherwise specified by C-DAC.

PART-F: MEASUREMENT, PAYMENT AND COMPLETION

30**. MEASUREMENT AND PAYMENT**

30.1 Measurement and payment shall be made based on the **actual quantity of work executed and accepted**, subject to the provisions of the Tender conditions of Contract and approved BOQ.
30.2 The quoted rates shall be deemed to include all costs associated with supply, transportation, loading/unloading, storage, shifting, installation, fixing, wiring, cable laying, termination, testing, commissioning, labour, tools and tackles, consumables and incidental accessories required for completion of the respective BOQ items.
30.3 No separate payment shall ordinarily be made for minor accessories and consumables such as screws, clamps, connectors, lugs, ferrules, thimbles, supports, glands, fasteners, hardware and similar items required for completing the BOQ items, unless specifically included as separate BOQ items.
30.4 The rates for dismantling shall be deemed to include disconnection, dismantling, removal, shifting of dismantled materials to the designated location and housekeeping.
30.5 Payment shall be made only for work completed and accepted by the Engineer-in-Charge in accordance with the terms and conditions of Contract.

31. **COMPLETION AND ACCEPTANCE**
31.1 The Contractor shall complete the entire work within the completion period specified in the Tender Document.
31.2 The Contractor shall notify C-DAC upon completion of the work for inspection and testing.
31.3 C-DAC shall inspect the installation and identify any defects, deficiencies or incomplete works, if any.
31.4 The Contractor shall rectify all such defects/deficiencies within the period specified by the Engineer-in-Charge.
31.5 The MCC system shall be handed over only after successful testing and satisfactory operation of all connected motors and associated electrical equipment.
31.6 Final acceptance shall be subject to satisfactory completion of the work, testing and commissioning, successful demonstration of the installation and submission of all required completion documents.

32. **DEVIATION FROM SCOPE**
32.1 The Contractor shall not make any deviation, substitution, addition or omission from the approved BOQ/Scope of Work without prior written approval of the competent authority of C-DAC.
32.2 Any additional work, if required, shall be dealt with strictly in accordance with the applicable terms and conditions of tender Contract / provisions and approval of the competent authority.

33. **CONTRACTOR'S RESPONSIBILITY**
33.1 The Contractor shall be fully responsible for the proper execution, quality, safety, testing and commissioning of all works included in the contract.
33.2 The Contractor shall deploy adequate skilled manpower and competent supervision for timely and satisfactory completion of the work.
33.3 The Contractor shall comply with the instructions of the Engineer-in-Charge regarding workmanship, sequence of work, safety, shutdown, testing and coordination.
33.4 The Contractor shall verify actual site conditions, motor nameplate ratings, cable routes, feeder requirements and existing electrical installations before final execution.
33.5 The Contractor shall rectify, at his own cost, any defect arising from poor workmanship, defective materials or non-compliance with the approved requirements.
33.6 The Contractor shall ensure that all works are executed in a manner that does not adversely affect the operation of other existing electrical installations and building services.

34. **GENERAL CONDITIONS**
34.1 The Scope of Work shall be read in conjunction with the **BOQ, Technical Specifications, General Terms and Conditions of the Contract and other tender documents**.

34.2 In case of any discrepancy between the Scope of Work, BOQ and Technical Specifications, the matter shall be referred to C-DAC for clarification before execution of the affected work.
34.3 The Contractor shall execute the work strictly as per the approved requirements and directions of the Engineer-in-Charge.
34.4 The Contractor shall be responsible for coordination of all activities associated with dismantling, installation, cable laying, motor connections, testing and commissioning.
34.5 The complete installation shall be handed over in a **safe, functional, tested and commissioned condition, ready for intended use**.
34.6 The Contractor's quoted rates shall be deemed to include all incidental requirements necessary for satisfactory completion of the respective BOQ items, unless specifically excluded in the tender documents.
34.7 The work shall be considered complete only after **successful installation, testing, commissioning and satisfactory demonstration of the complete electrical installation, including the MCC panels and connected motors, to the Engineer-in-Charge**.

TECHNICAL SPECIFICATIONS

GENERAL:

a. Technical specifications and mode of measurements for the work shall confirm to relevant items as laid down in CPWD specifications and relevant IS Codes.

b. All the personnel/ workers including their Supervisors shall maintain very good behavior and discipline while working within the office premises.

c. The Contractor shall remove all the debris resulting from the work and dispose it off outside the Complex area.

d. The contractor shall take utmost care to prevent any damage to building, air conditioners and all other installations on respective floors. In case of any damage, the contractor shall be strictly liable to make good the cost of such damages.

e. All items of work contracted for shall be executed strictly in accordance with the description of the item in the Bill of Material; specifications read in conjunction with the appropriate Indian Standard specifications and conditions of the contract and established Engineering practices.

SPECIFICATIONS FOR CIVIL WORKS

1. MATERIAL

Samples of all materials to be used on the work shall be got approved by the contractor from the Engineer- in- Charge well in time. The approved samples duly authenticated and sealed shall be kept in the custody of the Engineer-in-Charge till the completion of the work. All materials to be provided by the contractor shall be brand new and as per the samples approved by the Engineer-in-Charge.

2. DISMANTLING

The term Dismantling implies carefully separating the parts without damage and removing. This may consist of dismantling one or more parts of the building as specified or shown on the drawings. LIST OF BUREAU OF INDIAN STANDARDS CODES

1. IS 1200(Pt –XV III) Method of Measurements of Building and Civil Engineering Works (Part–XVIII) Demolition and Dismantling

2. IS4130 Demolition of Buildings–Code of Safety.

3. PRECAUTIONS:

a. All materials obtained from dismantling or demolition shall be the property of the Government unless otherwise specified and shall be kept in safe custody until they are handed over to the Engineer-in- Charge/ authorized representative.

b. Necessary safety of the adjoining work or property before dismantling shall be taken up and the work shall be carried out in such a way that no damage is caused to the adjoining work or property. Wherever specified, temporary enclosures or partitions and necessary scaffolding with suitable double scaffolding and proper cloth covering shall also be provided, as directed by the Engineer-in-Charge.

c. Necessary precautions shall be taken to keep noise and dust nuisance to the minimum. All work needs to be done under the direction of Engineer-in-Charge.

d. Any serviceable material, obtained during dismantling or demolition, shall be separated out and stacked properly as directed by the Engineer-in-Charge within a lead of 50 meters. All un-serviceable materials, rubbish etc. shall be disposed of as directed by the Engineer-in-Charge.

4 BRICK WORK

4.1 Classification

The brick work shall be classified according to the class designation of bricks used.

4.2 Mortar

The mortar for the brick work shall be as specified, and conform to accepted standards. Lime shall not be used where reinforcement is provided in brick work.

4.2.1 Soaking of Bricks

Bricks shall be soaked in water before use for a period for the water to just penetrate the whole depth of the bricks. Alternatively bricks may be adequately soaked in stacks by profusely spraying with clean water at regular intervals for a period not less than six hours. The bricks required for masonry work using mud mortar shall not be soaked. When the bricks are soaked they shall be removed from the tank sufficiently early so that at the time of laying they are skin -dry. Such soaked bricks shall be stacked on a clean place where they are not again spoiled by dirt earth etc.

Note I: The period of soaking may be easily found at site by a field test in which the bricks are soaked in water for different periods and then broken to find the extent of water penetration. The least period that corresponds to complete soaking will be the one to be allowed for in construction work.
Note II : If the bricks are soaked for the required time in water that is frequently changed the soluble salt in the bricks will be leached out, and subsequently efflorescence will be reduced.

4.2.2 Laying

Bricks shall be laid in English Bond unless otherwise specified. For brick work in half brick wall, bricks shall be laid in stretcher bond. Half or cut bricks shall not be used

except as closer where necessary to complete the bond. Closers in such cases, shall be cut to the required size and used near the ends of the wall. Header bond shall be used preferably in all courses in curved plan for ensuring better alignment.
Note: Header bond shall also be used in foundation footings unless thickness of walls (width of footing) makes the use of headers impracticable. Where thickness of footing is uniform for a number of courses, the top course of footing shall be headers.

4.2.2.1 All loose materials, dirt and set lumps of mortar which may be lying over the surface on which brick work is to be freshly started, shall be removed with a wire brush and surface wetted. Bricks shall be laid on a full bed of mortar, when laying, each brick shall, be properly bedded and set in position by gently pressing with the handle of a trowel. Its inside face shall be buttered with mortar before the next brick is laid and pressed against it. Joints shall be fully filled and packed with mortar such that no hollow space are left inside the joints.

4.2.2.2 The walls shall be taken up truly in plumb or true to the required batter where specified. All courses shall be laid truly horizontal and all vertical joints shall be truly vertical. Vertical joints in the alternate course shall come directly one over the other. Quoin, Jambs and other angles shall be pro-perly plumbed as the work proceeds. Care shall be taken to keep the perpends properly aligned within following maximum permissible tolerances:

a) Deviation from vertical within a story shall not exceed 6 mm per 3 m height.

b) Deviation in verticality in total height of any wall of building more than one story in height shall not exceed 12.5 mm.

c) Deviation from position shown on plan of any brick work shall not exceed 12.5 mm.

d) Relative displacement between loads bearing wall in adjacent story intended to be vertical alignments shall not exceed 6 mm.

e) A set of tools comprising of wooden straight edge, masonic spirit levels, square, 1-meter rule line and plumb shall be kept on the site of work for every 3 masons for proper check during the progress of work.

4.2.2.3 All quoins shall be accurately constructed and the height of brick courses shall be kept uniform. This will be checked using graduated wooden straight edge or story rod indicating height of each course including thickness of joints. The position of damp proof course, window sills, bottom of lintels, top of the wall etc. along the height of the wall shall be marked on the graduated straight edge or story rod. Acute and obtuse quoins shall be bonded, where practicable in the same way as square quoins. Obtuse quoins shall be formed with squint showing three quarters brick on one face and quarter brick on the other.

4.2.2.4 The brick work shall be built in uniform layers.
No part of the wall during its construction shall rise more than one meter above the general construction level. Parts of wall left at different levels shall be raked back at an angle of 45 degrees or less with the horizontal. Tooting shall not be permitted as an alternative to raking back. For half brick partition to be keyed into main walls, indents

shall be left in the main walls.

4.2.2.5 All pipe fittings and specials, spouts, hold fasts and other fixtures which are required to be built into the walls shall be embedded, as specified, in their correct position as the work proceeds unless otherwise directed by the Engineer-in-Charge.

4.2.2.6 Top courses of all plinths, parapets, steps and top of walls below floor and roof slabs shall be laid with brick on edge, unless specified otherwise. Brick on edge laid in the top courses at corner of walls shall be properly radiated and keyed into position to form cut corners. Where bricks cannot be cut to the required shape to form cut c o r n e r s, cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone Aggregate 20 mm nominal size) equal to thickness of course shall be provided in lieu of cut bricks.

4.2.2.7 Bricks shall be laid with frog (where provided) up. However, when top course is exposed, bricks shall be laid with frog down. For the bricks to be laid with frog down, the frog shall be filled with mortar before placing the brick in position.

4.2.2.8 In case of walls one brick thick and under, one face shall be kept even and in proper plane, while the other face may be slightly rough. In case of walls more than one brick thick, both the faces shall be kept even and in proper plane.

4.2.2.9 To facilitate taking service lines later without excessive cutting of completed work, sleeves (to be paid separately) shall be provided, where specified, while raising the brick work. Such sleeves in external walls shall be sloped down outward so as to avoid passage of water inside.

4.2.2.10 Top of the brickwork in coping and sills in external walls shall be slightly tilted. Where brick coping and sills are projecting beyond the face of the wall, drip course/throating (to be paid separately) shall be provided where indicated.

4.2.2.11 Care shall be taken during construction that edges of jambs, sills and projections are not damaged in case of rain. New built work shall be covered with gunny bags or tarpaulin so as to prevent the mortar from being washed away. Damage, if any, shall be made good to the satisfaction of the Engineer-in-Charge.

4.2.2.12 Vertical reinforcement in the form of bars (MS or high strength deformed bars or thermo-mechanically treated bars as per direction of Engineer-in- Charge)), considered necessary at the corners and junction of walls and jamb opening doors, windows etc. shall be encased with cement mortar not leaner than 1:4 (1 cement: 4 coarse sand), or cement concrete mix as specified. The reinforcement shall be suitably tied, properly embedded in the foundation and at roof level. The dia. of bars shall not be less than 8 mm and concrete grade shall be minimum 1:3:6 (1 cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size).

4.2.2.13 In retaining walls and the like, where water is likely to accumulate, weep holes, 50 to 75 mm square shall be provided at 2 m vertically and horizontally unless otherwise specified. The lowest weep hole shall be at about 30 cm above the ground level. All weep holes shall be surrounded by loose stones and shall have sufficient fall to drain out the water quickly.

Note: Work of providing loose stone will be payable extra.

4.2.2.14 Work of cutting chases, wherever required to be made in the walls for housing G.I. pipe, CI pipe or any other fixtures shall be carried out in various locations as per guidelines given below:

a) Cutting of chases in one brick thick and above load bearing walls.

i) As far as possible services should be planned with the help of vertical chases. Horizontal Chases should be avoided.

ii) The depths of vertical chases and horizontal chases shall not exceed one-third and one-sixth of the thickness of the masonry respectively.

iii) When narrow stretches of masonry (or short length of walls) such as between doors and windows, cannot be avoided they should not be pierced with openings for soil pipes or waste pipes or timber joints, etc. Where there is a possibility of load concentration such narrow lengths of walls shall be checked for stresses and high strength bricks in mortar or concrete walls provided, if required.

iv) Horizontal chases when unavoidable should be located in the upper or lower one-third of height of story and not more than three chases should be permitted in any stretch of a wall. No continuous horizontal chase shall exceed one meter in length. Where unavoidable, stresses in the affected area should be checked and kept within the permissible limits.

v) Masonry directly above a recess, if wider than 30 cm horizontal dimension) should be supported on lintel. Holes in masonry may be provided up to 30 cm width and 30 cm height without any lintel. In the case of circular holes in the masonry, no lintel need be provided for holes up to 40 cm in diameter.

b) Cutting of chases in half brick load bearing walls.

No chase shall be permitted in half brick load bearing walls and as such no recessed conduits and concealed pipes shall be provided with half brick thick load bearing walls.

c) Cutting of chases in half brick non-load bearing wall :

Services should be planned with the help of vertical chases. Horizontal chase should be provided only when unavoidable.

4.2.3 **Joints**

The thickness of all types of joints including brick wall joints and cross joints shall be such that four course and three joints taken consecutively shall measure as follows:

i) In case of modular bricks conforming to IS 1077 specification for common burnt clay buildings bricks, equal to 39 cm.

ii) In case of non-modular bricks, it shall be equal to 31 cm.

Note: Specified thickness of joints shall be of 1 cm. Deviation from the specified thickness of all joints shall not exceed one-fifth of specified thickness.

4.2.3.1 **Finishing of Joints:** The face of brick work may be finished flush or by pointing. In

flush finishing either the face joints of the mortar shall be worked out while still green to give a finished surface flush with the face of the brick work or the joints shall be squarely raked out to a depth of 1 cm while the mortar is still green for subsequently plastering. The faces of brick work shall be cleaned with wire brush so as to remove any splashes of mortar during the course of raising the brick work. In pointing, the joints shall be squarely raked out to a depth of 1.5 cm while the mortar is still green and raked joints shall be brushed to remove dust and loose particles and well wetted, and shall be later refilled with mortar to give ruled finish. Some such finishes are 'flush', 'weathered', ruled, etc.

4.2.4 **Curing**

The brick work shall be constantly kept moist on all faces for a minimum period of seven days. Brick work done during the day shall be suitably marked indicating the date on which the work is done so as to keep a watch on the curing period.

4.2.5 **HALF BRICK WORK**

Brick work in half brick walls shall be done in the same manner as described except that the bricks shall be laid in stretcher bond. When the half brick work is to be reinforced. M.S. bars of 6 mm dia., shall be embedded in every third course as given in the item (the dia of bars shall not exceed 8 mm). These shall be securely anchored at their end where the partitions end. The free ends of the reinforcement shall be keyed into the mortar of the main brick work to which the half brick work is joined. The mortar used for reinforced brick work shall be rich dense cement mortar of mix 1:4 (1 cement: 4 coarse sand). Lime mortar shall not be used. Over laps in reinforcement, if any shall not be less than 30 cm.

The mortar interposed between the reinforcement bars and the brick shall not be less than 5 mm. The mortar covering in the direction of joints shall not be less than 15 mm.

5.0 Granite Stone

It shall be of any color and size as directed by Engineer-in -Charge. Granite shall be plain Machine cut and mirror polished. The stone shall be smooth and of even surface without holes or pits.

5.1 SIZES AND TOLERANCES

The size of marble blocks, slabs and tiles shall be as mentioned in.

(1) All dimensions are in centimeter.

(2) The length and width, of the blocks shall be in multiple of 30 cm.

(3) Length and width of slab shall be in multiple of 10 cm. and thickness in multiple of 1 cm.

(4) Tiles shall be square cut and linear dimensions in multiple of 10 cm.

(5) Only slabs and tiles shall be machine cut and factory made.

(6) For 8 mm thick tiles, special precautions will be required for fixing them like using special adhesive as per manufacturer's specifications. Such tiles are not suitable for outside veneering work exposed to rains/sun if used in large areas in continuous stretches. For Tiles of thickness 20 mm and above cramps may be provided if approved by Engineer-in-Charge.

Type of stone	Maximum Water Absorption	Maximum Water Absorption

Note 1: Test for compressive strength shall be carried out as laid down in IS 1121 (Part I).

Note 2: Test for water absorption shall be carried out as laid down in IS 1124.

5.2 Size of Stones

The sizes other than those mentioned above may be provided as directed by the Engineer.

5.3 Approval of Sample

Before starting the work, the contractor shall get samples of marble approved by the Engineering- Charge. Approved samples shall be kept in the custody of the Engineer-in-Charge and the marble Supplied and used on the work shall conform to samples with regard to soundness, color, veining and general texture.

5.3.1 SAMPLING

In any consignment all the blocks/slabs/tiles of the same group, size and finish shall be grouped together to constitute a lot. Sample shall be selected and tested separately for each lot for determining its conformity or otherwise to the requirements of the specification. The number of blocks/slabs/tiles to be selected for the samples shall depend upon the size of the lot and shall be in accordance with the.

Note: The blocks/slabs/tiles in the sample shall be taken at random and in order to ensure to Randomness of selection, random tables may be used.

6.0 WOOD WORK

6.1 DOOR, WINDOW AND VENTILATOR FRAMES

Timber for door, window and ventilators frames shall be as specified. Timber shall be sawn in the direction of the grains. All members of a frame shall be of the same species of timber and shall be straight without any warp or bow. Frames shall have smooth, well-planed (wrought) surfaces except the surfaces touching the walls, lintels, sill etc., which may be left clean sawn. Rebates, rounding or molding shall be done before the members are jointed into frames. The depth of the rebate for housing the shutters shall be 15 mm, and the width of the rebates shall be equal to the thickness of the shutters. A tolerance of ± 2 mm shall be permitted in the specified finished dimensions of timber sections in frames.

6.1.1 Joints

The Jamb posts shall be through tanned in to the mortise of the transoms to the full thickness of the transoms and the thickness of the Tenon shall be not less than 2.5 cm. The tenon shall closely fit into the mortise without any wedging or filling. The contact surface of Tenon and mortise before putting together shall be glued with polyvinyl acetate dispersion based adhesive conforming to IS 4835 or adhesive conforming IS 851 and pinned with 10 mm dia hard wood dowels, or bamboo pins or star shaped metal pins. The joints shall be at right angles when checked from the inside surfaces of the respective members. The joints shall be pressed in position. Each assembled door frame shall be fitted with a temporary stretcher and a temporary diagonal brace on the rebated faces.

6.1.2 Fixing of Frames

The frames shall be got approved by the Engineer -in -Charge before being painted, oiled or otherwise treated and before fixing in position. The surface of the frames abutting masonry or concrete and the portions of the frames embedded in floors shall be given a coating of coal tar. Frames shall be fixed to the abutting masonry or concrete with holdfasts or metallic fasteners as specified. After fixing, the jamb posts of the frames shall be plugged suitably and finished neat. Vertical members of the door frames shall be embedded in the floor for the full thickness of the floor finish and shall be suitably strutted and wedged in order to prevent warping during construction. A minimum of three hold fasts shall be fixed on each side of door and window frames one at center point and other two at 30 cm from the top and bottom of the frames. In case of window and ventilator frames of less than 1 m in height two hold fasts shall be fixed on each side at quarter point of the frames. Hold fasts and metallic fasteners shall be measured and paid for separately.

6.1.3 Measurements

Wood work wrought, framed and fixed shall be measured for finished dimension without any allowance for the wastage or for dimensions beyond specified dimension. However, in case of members having moldings, rounding's or rebates and members of circular or varying sections, finished dimensions shall be taken as the sides of the smallest square or rectangle from which such a section can be cut. Length of each member shall be measured over all to the nearest cm so as to include projection for tenons. Width and thickness shall be measured to the nearest mm and the quantity shall be worked out in unit of up to three places of decimal.

6.1.4 Teak Wood Lipping

2nd class Teak Wood or as specified shall be sawn / cut in the direction of grains to required size of lipping. Sawing / cutting shall be truly straight and shape.

6.1.5 Fixing

The Lipping shall be fixed with head less nails to the base frame. No joint shall be permitted in one dimension of 2.5 meter or less. The joint shall be mitered in length as well as at corners.

6.1.6 Measurements

The length of the Lipping shall be measured along the side correct to a centimeter.

6.2 FLUSH DOOR SHUTTERS

6.2.1 Flush door shutters shall have a solid core and may be of the decorative or non-decorative (Paintable type as per IS 2202 (Part I). Nominal thickness of shutters may be 25, 30 or 35 mm. Thickness and type of shutters shall be as specified.

6.2.2 Width and height of the shutters shall be as shown in the drawings or as indicated by the Engineer in- Charge. All four edges of the shutters shall be square. The shutter shall be free from twist or warp in its plane. The moisture content in timbers used in the manufacture of flush door shutters shall be not more than 12 per cent when tested according to IS 1708.

6.2.3 Core

The core of the flush door shutters shall be a block board having wooden strips held in a frame Constructed of stiles and rails. Each stile and rail shall be a single piece without any joint. The width of the stiles and rails including lipping, where provided shall not be less than 45 mm and not more than 75 mm. The width of each wooden strip shall not exceed 30 mm. Stiles, rails and wooden strips forming the core of a shutter shall be of equal and uniform thickness. Wooden strips shall be parallel to the stiles.

End joints of the pieces of wooden strips of small lengths shall be staggered. In a shutter, stiles and rails shall be of one species of timber. Wooden strips shall also be of one species only but it may or may not be of the same species as that of the stiles and rails. Any species of timber may be used for core of flush door. However, any non-coniferous (Hard wood) timber shall be used for stiles, rails and lipping.

6.2.4 Face Panel

The face panel shall be formed by gluing, by the hot-press process on both faces of the core, either plywood or cross -bands and face veneers. The thickness of the cross bands as such or in the plywood shall be between 1.0 mm and 3.0 mm. The thickness of the face veneers as such or in the plywood shall be between 0.5 mm and 1.5 mm for commercial veneers and between 0.4 mm and 1.0 mm for decorative veneers, provided that the combined thickness of both is not less than 2.2 mm. The direction of the veneers adjacent to the core shall be at right angles to the direction of the wooden strips. Finished faces shall be sanded to smooth even texture. Commercial face veneers shall conform to marine grade plywood and decorative face veneers shall conform to type I decorative plywood in IS 1328.

6.2.5 Lipping

Lipping, where specified, shall be provided internally on all edges of the shutters. Lipping shall be done with battens of first class hardwood or as specified of depth not less than 25 mm. For double leaved shutters, depth of the lipping at meeting of stiles shall be not less than 35
mm. Joints shall not be permitted in the lipping.

6.2.6 Rebating

In the case of double leaves shutters the meeting of stiles shall be rebated by 8 mm to 10 Mm. The rebating shall be either splayed or square type as shown in drawing where lipping is provided. The depth of lipping at the meeting of stiles shall not be less than 30 mm.

7.0 Opening for Glazing

When required by the purchaser opening for glazing shall be provided and unless otherwise specified the opening for glazing shall be 250 mm in height and 150 mm or 200 mm in width unless directed otherwise. The bottom of the opening shall be at a height of 1.4 m from the bottom of the shutter. Opening for glazing shall be lipped internally with wooden batten of width not less than 25 mm. Opening for glazing shall be provided where specified or shown in the drawing.

7.1 Venetian Opening

Where specified the height of the Venetian opening shall be 350 mm from the bottom of the shutter. The width of the opening shall be as directed but shall provide for a clear space of 75 mm between the edge of the door and venetian opening but in no case the

opening shall extend beyond the stiles of the shutter. The top edge of the opening shall be lipped internally with wooden battens of width not less than 25 mm. Venetian opening shall be provided where specified or shown in the drawing.

7.1.1 Tolerance

Tolerance on width and height shall be + 3 mm and tolerance on nominal thickness shall be ± 1.2 mm. The thickness of the door shutter shall be uniform throughout with a permissible variation of not more than 0.8 mm when measured at any two points.

7.1.2 Adhesive

Adhesive used for bonding various components of flush door shutters namely, core, core frame, lipping, cross-bands, face veneers, plywood etc. and for bonding plywood shall conform to BWP type, phenol formaldehyde synthetic resin adhesive conforming to IS 848.

7.1.3 Tests

Samples of flush door shutters shall be subjected to the following tests:

(a) End Immersion Test
(b) Knife Test
(c) Glue Adhesion Test

One end of each sample shutter shall be tested for End Immersion Test. Two specimens of 150 x 150 mm size shall be cut from the two corners at the other end of each sample shutter for carrying out Glue Adhesion Test. Knife Test shall be done on the remaining portion of each sample shutter.

8. FLOORING & DADO

8.1 The process is often referred to as a “flamed” or “thermal” finish and can be best described as creating a textured look. While firing it, the surface becomes so hot it bursts and a layer flakes away to reveal a rough, even texture.
It is especially used at a location of high importance to have a great finish for designs requiring a modern aesthetic.

1. FINISHING

1.1 CEMENT PLASTER

The cement plaster shall be 12 mm, 15 mm or 20 mm thick as specified in the item.

1.2 Scaffolding

For all exposed brick work or tile work double scaffolding independent of the work having two sets of vertical supports shall be provided. The supports shall be sound and strong, tied together with horizontal pieces over which scaffolding planks shall be fixed.

For all other work in buildings, single scaffolding shall be permitted. In such cases the inner end of the horizontal scaffolding pole shall rest in a hole provided only in the header course for the purpose. Only one header for each pole shall be left out. Such holes for scaffolding shall, however, not be allowed in pillars/columns less than one meter in width or immediately near the skew backs of arches. The holes left in masonry works for scaffolding purposes shall be filled and made good before plastering.

Note: In case of special type of brick work, scaffolding shall be got approved from Engineer-in charge in advance.

1.3 **Preparation of Surface**

The joints shall be raked out properly. Dust and loose mortar shall be brushed out. Efflorescence if any shall be removed by brushing and scrapping. The surface shall then be thoroughly washed with water, cleaned and kept wet before plastering is commenced.

In case of concrete surface if a chemical retarder has been applied to the form work, the surface shall be roughened by wire brushing and all the resulting dust and loose particles cleaned off and care shall be taken that none of the retarders is left on the surface.

9.0 Mortar

The mortar of the specified mix using the type of sand described in the item shall be used. It shall be as specified. For external work and under coat work, the fine aggregate shall conform to grading IV. For finishing coat work the fine aggregate conforming to grading zone V shall be used.

9.1 Application of Plaster

9.1.1 Ceiling plaster shall be completed before commencement of wall plaster.

9.1.2 Plastering shall be started from the top and worked down towards the floor. All putlog holes shall be properly filled in advance of the plastering as the scaffolding is being taken down. To ensure even thickness and a true surface, plaster about 15 × 15 cm shall be first applied, horizontally and vertically, at not more than 2 meters intervals over the entire surface to serve as gauges. The surfaces of these gauged areas shall be truly in the plane of the finished plaster surface. The mortar shall then be laid on the wall, between the gauges with trowel. The mortar shall be applied in a uniform surface slightly more than the specified thickness. This shall be brought to a true surface, by working a wooden straight edge reaching across the gauges, with small upward and sideways movements at a time. Finally the surface shall be finished off true with trowel or wooden float according as a smooth or a sandy granular texture is required. Excessive troweling or over working the float shall be avoided.

9.1.3 All corners, arises, angles and junctions shall be truly vertical or horizontal as the case may be and shall be carefully finished. Rounding or chamfering corners, arises, provision of grooves at junctions etc. where required shall be done without any extra payment. Such rounding, chamfering or grooving shall be carried out with proper templates or battens to the sizes required.

9.1.4 When suspending work at the end of the day, the plaster shall be left, cut clean to line both horizontally and vertically. When recommencing the plastering, the edge of the old work shall be scrapped cleaned and wetted with cement slurry before plaster is applied to the adjacent areas, to enable the two to properly join together. Plastering work shall be closed at the end of the day on the body of wall and not nearer than 15 cm to any corners or arises. It shall not be closed on the body of the features such as plasters, bands and cornices, nor at the corners of arises. Horizontal joints in plaster

work shall not also occur on parapet tops and copings as these invariably lead to leakages. The plastering and finishing shall be completed within half an hour of adding water to the dry mortar.

No portion of the surface shall be left out initially to be patched up later on. The plastering and finishing shall be completed within half an hour of adding water to the dry mortar.

9.2 Thickness

Where the thickness required as per description of the item is 20 mm the average thickness of the plaster shall not be less than 20 mm whether the wall treated is of brick or stone. In the case of brick work, the minimum thickness over any portion of the surface shall be not less than 15 mm while in case of stone work the minimum thickness over the bushings shall be not less than 12 mm.

9 . 3 Curing

Curing shall be started as soon as the plaster has hardened sufficiently not to be damaged when watered. The plaster shall be kept wet for a period of at least 7 days. During this period, it shall be suitably protected from all damages at the contractor's expense by such means as the Engineer-in-Charge may approve. The dates on which the plastering is done shall be legibly marked on the various sections plastered so that curing for the specified period thereafter can be watched.

9.4 Finish

The plaster shall be finished to a true and plumb surface and to the proper degree of smoothness as required. The work shall be tested frequently as the work proceeds with a true straight edge not less than 2.5 m long and with plumb bobs. All horizontal lines and surfaces shall be tested with a level and all jambs and corners with a plumb bob as the work proceeds.

10.0 ALUMINIUM WORK

10.1 **Aluminium Sections**

Aluminium sections for partitions frame work & for fixed/open able windows, ventilators, doors etc. shall be suitable for use to meet architectural designs to relevant works and shall be subject to approval of the Engineer-in-Charge for technical, structural, functional and visual considerations. The aluminum extruded sections shall conform to IS 733 and IS 1285 for chemical composition and mechanical properties. The stainless steel screws shall be of grade AISI 304. The permissible dimensional tolerances of the extruded sections shall be as per IS 6477 and shall be such as not to impair the proper and smooth functioning/operation and appearance of door and Windows Aluminium glazed doors, windows etc. shall be of sizes, sections and details as shown in the drawings. The details shown in the drawings may be varied slightly to suit the standards adopted by the manufacturers of the aluminium work, with the approval of Engineer-in-Charge. Before proceeding with any fabrication work, the contractor shall prepare and submit, complete fabrication and installation drawings for each type of glazing doors, windows, ventilators and partition etc. for the approval of the Engineer-in-Charge. If the sections are varied, the contractor shall obtain prior approval of Engineer-in-Charge and nothing extra shall be paid on this account.

Note: The Aluminium frame work using dismantled Aluminum frames, Aluminum Windows and Aluminum Door with frame etc. for partitions in aluminum frame work

shall be cut to required sizes as per the site conditions.

Fixing of Aluminium Partitioning Frames

Partitions in Aluminum frame work using old / new sections shall be consisting of floor and ceiling standard Aluminum sections 2½" X 1½" of 16 gauge / or approved sections at the spacing of 610 mm center to center horizontal and vertically with suitable anchor dash fastener fixed flush to walls including Aluminum L Brackets etc.

10.2 **Anodizing**

New Standard aluminum extrusion sections are manufactured in various sizes and shapes in wide range of solid and hollow profiles with different functional shapes for architectural, structural glazing, curtain walls, doors, window & ventilators and various other purposes. The anodizing of these products is required to be done before the fabrication work by anodizing/electro coating plants which ensures uniform coating in uniform color and shades. The extrusions are anodized up to 30 micron in different colors. The anodized extrusions are tested regularly under strict quality control adhering to Indian Standard.

10 .3 **Powder Coating**

10.3.1 Material: The powder used for powder coating for new sections shall be Epoxy/polyester powder as per existing shade of old aluminum sections of make approved by the Engineer-in-Charge. The contractor shall give detailed program for powder coating in advance, to facilitate the inspection by Engineer-in-Charge or his authorized representative.

10.3.2 Pre-treatment: Each aluminum alloy extrusion or performed section shall be thoroughly cleaned by alkaline or acidic solutions under the conditions specified by chemical conversion coating supplier and then rinsed. A chemical conversion coating shall be applied by treatment with a solution containing essentially chromate ions or chromate and phosphate ions as the active components as applicable. The amount of the conversion coating deposited depends on the type used by the conversion coating chemical supplier. The conversion coating shall be thoroughly rinsed either with the solution specified by the conversion coating Chemical supplier or with de-mineralized water and then dried at the temperature for the time specified by the conversion coating chemical supplier. The contractor shall submit the detail specifications and application procedure for application of conversion coating for approval of Engineer-in-Charge. The metal surface after the conversion coating pretreatment and prior to the application of the coating shall be free from dust or powdery deposits.

10.3.3 Process: The polyester powder shall be applied by electrostatic powder spray method. Before start of powder coating the contractor shall submit detail specification for application of polyester powder from manufacturer of the polyester powder for approval of Engineer-in-Charge. The powder coating shall be applied as per the specification and approved shade by Engineer-in-Charge.

10.3.4 Thickness: The thickness of the finished polyester powder coating measured by micron meter shall not be less than 50 micron nor more than 120 micron at any point.

10.3.5 **Performance Requirements for the Finish**

i) Surface appearance: The finish on significant surfaces shall show no scratches

when illuminated and is examined at an oblique angle, no blisters, craters; pinholes or scratches shall be visible from a distance of about 1 m. There shall not be any visible variation in the color of finished surfaces of different sections and between the colors of different surfaces of same section.

ii) Adhesion: When a coated test piece is tested using a spacing of 2 mm between each of the six parallel cuts (the cut is made through the full depth of powder coating so that metal surface is visible) and a piece of adhesive tape, approximately 25 mm x 150 mm approved by the Engineer-in-Charge is applied firmly to the cut area and then removed rapidly by pulling at right angles to the test area, no pieces of the finish other than debris from the cutting operation shall be removed from the surface of the finish.

10.3.6 Protection of Powder Coated / Anodizing Finish: It is mandatory that all aluminum members shall be wrapped with self-adhesive non-staining PVC tape, approved by Engineer-in-Charge.

10.4 Measurement:

All the aluminum sections including snap beading, Aluminum L- Brackets, cleats fixed in place shall be measured in running meter along the outer periphery of composite section correct to a millimeter. The weight calculated on the basis of actual average (average of five samples) weight of composite section in kilogram correct to the second place of decimal shall be taken for payment. (Weight shall be taken after anodizing). The weight of Aluminum L- Brackets, cleat shall be added for payment. Neither any deduction nor anything extra shall be paid for skew cuts.

11.0 WATER PROOFING

Integral cement based treatment for water proofing.

11.1 Water Proofing of Internal Surface

11.1.1 Preparation of Surface

The Water Proofing Treatment over the lean concrete/levelling course surface should adhere to the surface firmly, the surface of levelling course should be roughened properly when
The concrete is still green. In case the surface is not made rough before the concrete is set, the work of water proofing should not be executed till proper key is provided for the base layer of Cement Mortar 1:3.

11.1.2 Blending Cement/Water with Water Proofing Compound

The required quantity of cement bags to be used for a particular portion of work should be emptied on a dry platform. Water proofing compound bearing ISI mark and conforming to IS 2645 should then be mixed properly with the cement. The quantity of water proofing compound to be mixed should be as prescribed by the manufacturer but not exceeding 3% by weight of cement. The quantity of cement and water proofing compound thus mixed should be thoroughly blended and the blended cement should again be packed in bags.
For the water proofing compound in liquid form, the blending is to be done with water. This can be done by taking the just required quantity of water to be mixed in the particular batch of dry cement mortar.
The required quantity of water thus collected per batch of dry cement mortar to be

prepared should be mixed with liquid water proofing compound from sealed tins with ISI mark. The water thus mixed with water proofing compound shall be thoroughly stirred so that the water is blended with water proofing compound properly.

11.1.3 Preparation of Cement Slurry

Cement slurry shall be prepared by using 2.2 kg of blended cement per sq. Area. Each time only that much quantity shall be prepared which can be covered on the surface and the surface in turn would be covered with 25 mm thick cement mortar base within half an hour. Slurry prepared and remained unused for more than half an hour shall be totally rejected.

11.1.4 Preparation of Cement Mortar

Cement mortar 1:3 (1 blended cement: 3 coarse sand) shall be prepared with cement/ water duly blended (ii). Only that much quantity of cement mortar which can be consumed within half an hour, shall be prepared. Any cement mortar that is prepared and remains unused for more than half an hour shall not be used in the work and shall be rejected.

11.2 Laying Water Proofing Course

Before laying the base course of cement mortar 1:3, the lean concrete surface shall be cleaned neatly with water. Cement slurry prepared as per clause 22.1.1 (ii), shall be applied only on the area of the concrete surface that can be covered with the cement mortar (1:3) base course within half an hour. The cement slurry should cover every spot of the surface and no place shall remain uncovered. Just after the application of cement slurry on the surface, the cement mortar prepared as per clause 22.1.1 (v) should be used for laying the base course. Base Course should be laid to a perfect level with wooden/aluminum straight edge of at least 2 meter. Long. The top surface of cement mortar should be finished neatly and later scratched when green with a suitable instrument before the base course dries and gets hard that is just before the base course takes up initial set.

When the 25 mm thick base course is just getting set the cement slurry prepared should be spread over the base course up to the area that shall be covered with just two to three stone slabs. The cement slurry shall be spread in such a way that the area of base course to be covered immediately shall be covered with slurry without any gap or dry spots.
Immediately on applying cement slurry on the base course the Rough Kota Stone slab shall be laid over the base course and pressed gently so that the air gapCan be removed. The slurry applied on the surface which gets spread when the stone slab is pressed shall get accumulated in the joints of adjacent stone slabs and if any gap still remains between the stone slabs the same should also be filled with additional quantity of cement slurry. For laying the stone slabs in perfect level, two stone slabs at adjacent Concerns/ends shall be fixed firmly to the required level and a string stretched over the two slabs, the intermediate slabs shall then be set to the level of the string.

After filling all the joints of the Rough Kota stone Slabs with cement slurry the area of stone slab shall be laid with cement mortar 1:3. The surface of stone slabs shall be cleaned and lightly watered. Cement mortar 1: 3 shall be used for laying this course. For

laying this course 25 mm high wooden strips shall be used and the top surface shall be finished smooth without using additional cement or slurry.

After laying 3rd course and before the mortar layer takes the initial set, Stone aggregate of 10 mm to 12 mm nominal size shall be uniformly spread and lightly pressed into the finished surface @ 8 cub. /Square Meter. The aggregates shall not be embedded totally inside the mortar and shall be visible on the top surface.

In cases where slope is to be provided for the water proofing layer, grading with additional cement concrete/cement mortar shall be provided and then the water proofing layer shall be laid on the graded surface. Extra payment shall however be made for the grading course.

11.3 Curing

Immediately after completing the fourth layer, arrangements shall be made for the top RCC slab as quickly as possible and in the meantime till the top slab is casted the water proofing treatment shall be kept wet continuously. In case the concreting of slab gets delayed for more than 2 weeks the curing can be stopped after 14 days.

11.4 Measurement

Length and breadth shall be measured along the finished surface correct to a cm and the area shall be worked out to nearest 0.01 Square Meter

12.0 DISMANTLING AND DEMOLISHING

12.1 Precautions

All materials obtained from dismantling or demolition shall be the property of the Government unless otherwise specified and shall be kept in safe custody until they are handed over to the Engineer-in- Charge/ authorized representative.

The demolition shall always be well planned before hand and shall generally be done in reverse Order of the one in which the structure was constructed. The operations shall be got approved from the Engineer-in-Charge before starting the work.
Due care shall be taken to maintain the safety measures prescribed in IS 4130 and construction and demolition waste management rules 2016 shall be followed.

Necessary propping, shoring and or under pinning shall be provided to ensure the safety of the Adjoining work or property before dismantling and demolishing is taken up and the work shall be carried out in such a way that no damage is caused to the adjoining work or property. Wherever specified, temporary enclosures or partitions and necessary scaffolding with suitable double scaffolding and proper cloth covering shall also be provided, as directed by the Engineer-in-Charge. It shall be ensured that no dust is generated while demolishing. Demolition Rules – 2016 shall be followed.

12.2 RECOMMENDATIONS FOR DEMOLITION OF CERTAIN SPECIAL TYPES AND ELEMENTS OF STRUCTURES

Roof coverings generally including battens boarding, mats, bamboo or other subsidiary Supports shall be measured in square meters except lead sheet roof covering which

shall be measured in quintals and stone slab roof covering which shall be measured in Cubic meters.

(ii) Ridges, hips and valleys shall be girthed and included with the roof area. Corrugated or Semi corrugated surfaces shall be measured flat and not girthed.

(iii) Mud phuska on roofs shall be measured in cubic meters.

(iv) Lead sheets in roofs shall be measured in quintals and hips, valleys, flashings, lining to Gutter etc. shall be included in this weight.

(v) R.B. or R.C.C. roofs shall be measured as specified

(vi) Supporting members, such as rafters, purlins, beams joists, trusses etc. of wood shall be Measured in cubic meters and steel or iron sections, in quintals.

PLUMBING WORKS SPECIFICATIONS

1. INSTALLATION OF SQUATTING PAN the installation shall consist of squatting pan, flushing cistern, flush pipe and a pair of foot rests. Fixing The pan shall be sunk into the floor and embedded in a cushion of average 15 cm thick cement concrete 1:5:10 (1 Cement : 5 fine sand : 10 graded brick ballast 40 mm nominal size). The concrete shall be left 115 mm below the top level of the pan so as to allow flooring and its bed concrete. The pan shall be provided with a 100 mm S.C.I., P or S type trap with an approximately 50 mm seal and 50 mm dia vent horn, where required by the Engineer-in-Charge. The joint between the pan and the trap shall be made leak proof with cement mortar 1:1 (1 cement: 1 fine sand). Measurements The squatting pans shall be measured in numbers.

Rate shall include the cost of all the materials and labor involved in all the operations described above. Cost of concrete shall be paid separately.

2.0 INSTALLATION OF WATER CLOSET

Installation shall consist of water closet with seat and cover, flushing cistern and flush bend. Fixing The closet shall be fixed to the floor by means of 75 mm long 6.5 mm diameter counter-sunk bolts and nuts embedded in floor concrete.

Measurements Water closets shall be measured in numbers.

Rate shall include the cost of all the materials and labor involved in all the operations described above.

2.1 INSTALLATION OF FOOT RESTS

After laying the floor around squatting pan as specified a pair of foot rests shall be fixed in cement mortar 1 : 3 (1 cement : 3 coarse sand). The position of foot rests with respect to pan shall be as per

Measurements Pair of foot rests shall be measured in numbers. Rate shall include the cost of all the materials and labor involved in all the operations described above.

INSTALLATION OF SQUATTING PLATE (SINGLE OR RANGE)

The installation shall consist of an assembly of squatting plates (single or range), vitreous China channel, automatic flushing cistern, flush pipe with fittings spreader and

C.I. trap. The capacity. Fixing 20 mm the floor slab shall be suitably sunk to receive the squatting plate. Where the floor slab is not sunk, the plates shall be provided over a platform. The top edge of the squatting plate shall be flush with the finished floor level adjacent to it. It shall be embedded on a layer of 25 mm thick cement mortar 1:8 (1 cement: 8 fine sand) laid over a bed of cement concrete 1:5:10 (1 cement: 5 fine sand: 10 graded brick aggregate 20 mm nominal size) of flushing cistern and relevant size of flush pipes shall be as specified in Table. There shall be 100 mm dia, white glazed vitreous China channels with stop and outlet pieces suitably fixed in the floor in cement mortar 1:3 (1 cement :3 coarse sand) and joint finished with white cement. The squatting plate shall have 1200 high and half brick thick wall in front and on either side of the squatting plate. The brick work for the walls shall be paid separately. The exposed surface of walls shall be lined with white glazed tiles with proper corners and angles set in neat cement mortar, the face of the joints shall be gone over with whiting so as to match with the color of the tiles. The tiles shall be 15 mm square. Space if any, left between the side walls and squatting plate shall be finished white to match the color of the squatting plate. The trap and fittings shall be fixed as directed by the Engineer-in-Charge. The vitreous China channel shall discharge into 65 mm diameter standard urinals, C.I. trap with vent arm having 65 mm C.P. brass outlet grating.

2.2 INSTALLATION OF FLOOR MOUNTED WATER CLOSET (WC)

Water closets shall be of white vitreous china conforming to IS 2556 (Part-1) and 2556 (Part-2), as specified and shall be of “Wash down type”. The closets shall be either of the two patterns. The closets shall be of one-piece construction. Each water closet shall have not less than two holes having a minimum diameter of 6.5 mm for fixing to floor and shall have an integral flushing rim of suitable type. It shall also have an inlet or supply horn for connecting the flushing pipe of dimensions as shown in table in the flushing rim may be boxed or open type. In the case of box rims adequate number of holes, on each side together with a slot opposite the inlet shall be provided. The flushing rim and inlet shall be of the self-draining type. The water closet shall have a weep hole at the flushing inlet. Each water closet shall have an integral trap with either ‘S’ or ‘P’ outlet with at least 50 mm water seal. For P trap, the slope of the outlet shall be 14 deg. below the horizontal.

Where required the water closet shall have an anti-siphon 50 mm dia vent horn on the outlet side of the trap with dimension conforming to those given in and on either right or left hand or center as specified set at an angle of 45 deg. and invert of vent hole not below the central line of the outlet. The inside surface of water closets and traps shall be uniform and smooth in order to enable an efficient flush. The serrated part of the outlet shall not be glazed externally. The water closet, when sealed at the bottom of the trap in line with the back plate, shall be capable of holding not less than 15 liters of water between the normal water level and the highest possible water level of the water closet as installed.

3.0 INTERNAL DRAINAGE INSTALLATIONS

General requirements any damage caused to the building, or to electric, sanitary water supply or other installations etc. therein either due to negligence on the part of the contractor, or due to actual requirements of the work, shall be made good and the building or the installations shall be restored to its original condition by the contractor. Nothing extra shall be paid for it, except where otherwise specified. All water supply installation work shall be carried out through licensed plumbers. It is most important to ensure that wholesome water supply

provided for drinking and culinary purposes, is in no way liable to contamination from any less satisfactory water. There shall, therefore, be no cross connection whatsoever between a pipe or fitting for conveying or containing wholesome water and a pipe or fitting for conveying or containing impure water or water liable to contamination or of uncertain quality of water which has been used for any purpose. The provision of reflux or non-Return valves or closed and sealed valves shall not be construed a permissible substitute for complete absence of cross-connection.

Where a supply of wholesome water is required as an alternative or standby to supply of less satisfactory water or is required to be mixed with the latter, it shall be delivered only into a cistern, and by a pipe or fitting discharging into the air gap at a height above the top edge of the cistern equal to twice its nominal bore, and in no case less than 15 cm.

No piping shall be laid or fixed so as to pass into, through or adjoining any sewer, scour outlet or drain or any manhole connected therewith nor through any ash pit or manure-pit or any material of such nature that can cause undue deterioration of the pipe.

Where the laying of any pipe through fouled soil or previous material is unavoidable, the piping shall be properly protected from contact with such soil or material by being carried through an exterior cast iron tube or by some other suitable means. Any piping or fitting laid or fixed which does not comply with the above requirements, shall be removed and re-laid in conformity with the above requirements.

The design of the pipe work shall be such that there is no possibility of backflow towards the source of supply from any cistern or appliance whether by siphonage or otherwise, and reflux or non-return valves shall not be relied upon to prevent such back flow.

All pipe work shall be so designed, laid or fixed, and maintained so that it remains completely watertight, thereby avoiding wastage of water, damage to property and the risk of contamination of the water conveyed.

In designing and planning the layout of the pipe work, due attention shall be given to the maximum rate of discharge, required economy in labor and materials, protection against damage and corrosion, protection from frost, if required, and to avoidance of airlocks, noise transmission and unsightly arrangement.

To reduce frictional losses, piping shall be as smooth as possible inside. Methods of jointing shall be such as to avoid internal roughness and projection at the joints, whether of the jointing materials or otherwise.

Change in diameter and in direction shall preferably be gradual rather than abrupt to avoid undue loss of head. No bend or curve in piping shall be made so as to materially reduce or alter the cross-section.

Underground piping shall be laid at such a depth that it is unlikely to be damaged by frost or traffic loads and vibrations. It shall not be laid in ground liable to subsidence, but where such ground cannot be avoided; special precautions shall be taken to avoid damage to the piping. Where piping has to be laid across recently disturbed ground, the ground shall be thoroughly consolidated so as to provide a continuous and even support.

Where the service pipe is of diameter less than 50 mm the stop valves shall be of the screw down type and shall have loose washer plates to act as non-return valves. Other stop valves in the service line may be of the gate type.

In flats and tenements supplied by a common service pipe a stop valve shall be fixed to control each branch separately. In large buildings a sufficient number of stop valves shall be fixed on branch pipes, and to control groups of ball valves and draw off taps, so as to minimize interruption of the supply during repairs, all such stop valves shall be fixed in accessible positions and properly protected from being tampered with, they may be of the gate type to minimize loss of head by friction.

3.1 **SUB HEAD**

Water supply for drinking or for culinary purposes as far as possible shall be on branch pipes connected directly to the service pipe.

Pumps shall not be allowed on the service pipe as they cause a drop of pressure on the suction side thereby affecting the supply to the adjoining properties. In cases where pumping is required, a properly protected storage tank of adequate capacity shall be provided to feed the pump.

Service pipes shall be so designed and constructed as to avoid air-locks, so that all piping and fittings above ground can be completely emptied of water to facilitate repairs. There shall be draining taps or draw-off taps (not underground) at the lowest points, from which the piping shall rise continuously to draw-off taps, ball valves, cisterns, or vents (where provided at the high points).

Service pipes shall be designed so as to reduce the production and transmission of noise as much as possible. Appliances which create noise shall be installed as far distant as possible from the living rooms of the house. High velocity of water in piping and fittings shall be avoided. Piping shall be confined, as far as possible, to rooms where appliances are fixed, it shall have easy bends, and where quietness is particularly desired, holder bats or clamps shall be insulated from the piping by suitable pads.

The rising pipe to the storage cistern, if any, or to any feed cistern shall be taken as directly as possible to the cistern and shall be fixed away from windows or ventilators.

All pipe work shall be planned so that the piping is accessible for inspection, replacement and repair. To avoid its being unsightly, it is usually possible to arrange it in or adjacent to cupboards, recesses, etc. provided there is sufficient space to work on the piping with the usual tools. Piping shall not be buried in walls or solid floors. Where unavoidable, piping may be buried for short distances provided that adequate protection is given against damage and that no joints are buried. If piping is laid in ducts or chases, these shall be roomy enough to facilitate repairs and shall be so constructed as to prevent the entry of vermin. To facilitate removal of pipe casing, floor boards covering piping shall be fixed with screws or bolts.

When it is necessary for a pipe to pass through a wall or floor, a sleeve shall be fixed therein for insertion of the pipe and to allow freedom for expansion, contraction and other movement. Piping laid in wood floors shall, where possible, be parallel with the joists.

Where storage tanks are provided to meet overall requirements of water connection of service pipe with any distributing pipe shall not be permitted except one direct connection for culinary or drinking requirements.

No service pipe shall be connected to any water closet or urinal. All such supplies shall be from flushing cisterns which shall have supply from storage tank. 18.2.24 No service or supply pipe shall be connected directly to any hot-water system or to any apparatus used for heating other than through a feed cistern thereof.

4.0 MATERIALS

The standard size of brass or gun metal fittings shall be designated by the nominal bore of the pipe outlet to which the fittings are attached. A sample of each kind of fittings shall be got approved from the Engineer-in-Charge and all supplies made according to the approved samples. All cast iron fittings shall be sound and free from laps, blow holes and pitting. Both internal and external surfaces shall be clean, smooth and free from sand etc. Burning, plugging, stopping or patching of the casting shall not be permissible. The bodies, bonnets, spindles and other parts shall be truly machined so that when assembled the parts shall be axial, parallel and cylindrical with surfaces smoothly finished. The area of the water way of the fittings shall not be less than area of the nominal bore, chromium plating wherever specified shall be of 0.3 micron. The chromium shall never be deposited on brass unless a heavy coating of nickel is interposed. In the case of iron a thick coat of copper shall first be applied, then one of nickel and finally the chromium. In finish and appearance the plated articles when inspected shall be free from plating defects such as blisters, pits roughness and un plated areas and shall not be stained or discolored. Before fitting is plated, the washer plate shall be removed from the fittings, the gland packing shall be protected from the plating solution.

Ball Valve (Brass) The ball valve shall be of Brass or Gunmetal as specified conforming to IS 1703

The ball valve shall be of following two classes: — (a) High Pressure: High pressure float valves are indicated by the abbreviation 'HP' and are designed for use on mains having pressure of 0.175 MPa or above.

(b) Low Pressure: Low Pressure float valves are indicated by the abbreviation 'LP' and are designed for use on mains having a pressure up to. 0.175 MPa. The ball valves shall be of following nominal sizes 15 mm, 20 mm, 25 mm, 32 mm, 40 mm and 50 mm. The nominal size shall correspond with the nominal bore of the inlet shanks. Polyethylene floats shall conform to IS 9762.

Bib Taps and Stop Valve Brass: A bib tap is a draw off tap with a horizontal inlet and free outlet and a stop valve is a valve with suitable means of connections for insertion in a pipe line for controlling or stopping the flow. They shall be of specified size and shall be of screw down type and shall conform to IS 781. The closing device shall work by means of disc carrying a renewable non-metallic washer which shuts against water pressure on a seating at right angles to the axis of the threaded spindle which operates it. The handle shall be either crutch or butterfly type securely fixed to the spindle. Valve shall be of the loose leather seated pattern. The cocks (taps) shall open in anti-clock wise direction.

The bib taps and stops valve shall be polished bright. The minimum finished weights of bib tap and stop valve shall be as specified

5.0 Ferrules

The ferrules for connection with C.I. main shall generally conform to IS 2692. It shall be of non-ferrous materials with a C.I. bell mouth cover and shall be of nominal bore as specified.

The ferrule shall be fitted with a screw and plug or valve capable of completely shutting off the water supply to the communication pipe, if and when required.

6.0 Pipes and Specials

May be of any of the following types as specified: (a) Cast iron centrifugally cast (spun) – IS 1536 (b) Galvanized steel – IS 1239 & IS 4736 (c) PE-AL-PE Pipes – IS 15450 (d) PP-R Pipes – IS 15801 (e) CPVC pipes – IS 15778 In choosing the material for piping and fittings, account shall be taken of the character of the water to be conveyed through it, the nature of the ground in which the pipes are to be laid and the relative economics.

7.0 LAYING AND JOINTING OF PIPES AND FITTINGS

7.1 Unloading

The pipes shall be unloaded where they are required.

Unloading (except where mechanical handling facilities are available):

Pipes weighing up to 60 kg shall be handled by two persons by hand passing. Heavier pipes shall be unloaded from the lorry or wagon by holding them in loops, formed with ropes and sliding over planks set not steeper than 45 degree. The planks shall be sufficiently rigid and two ropes shall always be used to roll the pipes down the planks. The ropes should be tied on the side opposite the unloading. Only one pipe shall be unloaded at a time.

7.2 LAYING AND JOINTING G.I. PIPES (INTERNAL WORK)

For internal work the galvanized iron pipes and fittings shall run on the surface of the walls or ceiling (not in chase) unless otherwise specified. The fixing shall be done by means of standard pattern holder bat clamps, keeping the pipes about 1.5 cm clear of the wall. When it is found necessary to conceal the pipes, chasing may be adopted or pipes fixed in the ducts or recess etc., provided there is sufficient space to work on the pipes with the usual tools. The pipes shall not ordinarily be buried in walls or solid floors. Where unavoidable, pipes may be buried for short distances provided adequate protection is given against damage and where so required joints are not buried. Where directed by the Engineer-in-Charge, a M.S. tube sleeve shall be fixed at a place the pipe is passing through a wall or floor for reception of the pipe and to allow freedom for expansion and contraction and other movements. In case the pipe is embedded in walls or floors it should be painted with anticorrosive bitumastic paints of approved quality. The pipe shall not come in contact with lime mortar or lime concrete as the pipe is affected by time. Under the floors the pipes shall be laid in layer of sand filling as done under concrete floors.

All pipes and fittings shall be fixed truly vertical and horizontal unless unavoidable. The pipes shall be fixed to walls with standard pattern holder bat clamps of required shape and size so as to fit tightly on the pipes when tightened with screwed bolts, these clamps shall be embedded in brick work in cement mortar 1:3 (1 cement: 3 coarse sand), and shall be spaced at regular intervals in straight lengths as shown.

The clamps shall be fixed at shorter lengths near the fittings as directed by the Engineer-in-Charge.

For G.I. pipes 15 mm diameter, the holes in the walls and floors shall be made by drilling with chisel or jumper and not by dismantling the brick work or concrete. However, for bigger dimension pipes the holes shall be carefully made of the smallest size as directed by the Engineer-in-Charge. After fixing the pipes the holes shall be made good with cement mortar 1:3 (1 cement: 3 coarse sand) and properly finished to match the adjacent surface.

Unions will be provided to facilitate connections additions and alterations as well as for maintenance and for change of pipes. The locations where unions are to be provided will be decided with prior written approval of the Engineer-in-Charge.

8.0 CHLORINATED POLYVINYL CHLORIDE (CPVC)

PIPES CPVC pipes & fittings used in hot & cold potable water distribution system shall conform to requirement of IS 15778.

The material from which the pipe is produced shall consist of chlorinated polyvinyl chlorides. The polymer from which the pipe compounds are to be manufactured shall have chlorine content not less than 66.5%. The internal and external surfaces of the pipe shall be smooth, clean and free from grooving and other defects. The pipes shall not have any detrimental effect on the composition of the water flowing through it. Diameter and wall thickness of CPVC pipes are as per

Notes 1. For CPVC pipes SDR is calculated by dividing the average outer diameter of the pipe in mm by the minimum wall thickness in mm. If the wall thickness calculated by this formula is less than 1.52 mm, it shall be increased to 1.52 mm. The SDR values shall be rounded to the nearest 0.5.

Dimensions of Pipes The outside diameter, outside diameter at any point and wall thickness shall be as given.

Diameter: The outside diameter and outside diameter at any point as given in Table 18.16 shall be measured according to the method given in IS 12235 Diameter at any point: The difference between the measured maximum outside diameter and measured minimum outside diameter in the same cross-section of pipe (also called tolerance on ovality) shall not exceed the greater of the following two values: (a) 0.5 mm, and

(b) 0.012 dn rounded off to the next higher 0.1 mm.

9.0 Wall Thickness:

Wall thickness shall be measured by any of the three methods given in IS 12235 (part 1). To check the conformity of the wall thickness of the pipe throughout its entire length, it is necessary to measure the wall thickness of the pipe at any point along its length. This shall be done by cutting the pipe at any point along its length and measuring the wall thickness as above. Alternatively, to avoid destruction of the pipe, non-destructive testing methods such as the use of ultrasonic wall thickness measurement gauges shall be used at any four points along the length of the pipe.

9.1 Effective Length (Le)

If the length of a pipe is specified, the effective length shall not be less than that specified. The preferred effective length of pipes shall be 3, 5 or 6 m. The pipes may be supplied in other lengths where so agreed upon between the manufacturer and the purchaser. Pipe ends the ends of the pipes meant for solvent cementing shall be cleanly cut and shall be reasonably square to the axis of the pipe or may be chamfered at the plain end. Physical and Chemical Characteristics Visual Appearance: The color of the pipes shall be off-white. Slight variations in the appearance of the color are permitted. The internal and external surface of the pipe shall be smooth, clean and free from grooving and other defects.

Opacity: The wall of the plain pipe shall not transmit more than 0.1 per cent of the visible light

falling on it when tested in accordance with IS 12235.

Effect on Water: The pipes shall not have any determinate effect on the composition of the water flowing through them, when tested as per 10.3 of IS 4985.

Reversion Test: When tested by the method prescribed in IS 12235 (Part 5/ Sec 1 and Sec 2), a length of pipe 200 ±20 mm long shall not alter in length by more than 5 per cent.

Vicat Softening Temperature: When tested by the method prescribed in IS 12235 (part 2), the Vicat softening temperature of the specimen shall not be less than 110°C.

Density: When tested in accordance with IS 12235 (Part 14), the density of the pipes shall be between 1450kg/m3 and 1650kg/m3. 18.9.5 Mechanical Properties 18.9.5.1 Hydrostatic

Characteristics: When subject to internal hydrostatic pressure test in accordance with the procedure given in IS 12235 (part 8/Sec 1), the pipe shall not fail during the prescribed test duration. The temperatures, duration and hydrostatic (hoop) stress for the test shall conform to the requirements given in. The test shall be carried out not earlier than 24 h after the pipes have been manufactured.

ELECTRICAL WORKS

SUB-HEAD I – INTERNAL WIRING

1. All wiring shall be carried out with FRLS PVC insulated copper conductor cables, complete with suitable PVC conduits, conduit accessories, circuit wiring, switches, modular boxes, plates, fittings, terminations and earthing, as required for complete installation.
2. Wiring for light points, fan points, exhaust fan points and call-bell points shall be carried out using 1.5 sq.mm FRLS PVC insulated copper conductor single-core cable in surface/recessed medium-class PVC conduit, complete with modular switch, modular plate, suitable GI box and 1.5 sq.mm FRLS copper earthing conductor.
3. Circuit/sub-main wiring shall be carried out using FRLS PVC insulated copper conductor single-core cables in suitable surface/recessed PVC conduit, as follows:
    - 2 × 1.5 sq.mm + 1 × 1.5 sq.mm earth wire
    - 2 × 2.5 sq.mm + 1 × 2.5 sq.mm earth wire
4. Modular switches and socket outlets shall be suitable for 230 V AC and shall conform to applicable IS/IEC standards.
5. 5/6 A modular switches shall be of approved modular type, complete with necessary connections.
6. 3-pin 5/6 A modular socket outlet shall be provided with safety shutters and proper earthing provision.
7. Modular GI boxes shall be suitable for recessed installation and shall be complete with modular base and cover plate.
8. 3-module GI box, approximately 100 mm × 75 mm, shall be suitable for the specified modular accessories.
9. 15/16 A power socket assembly shall comprise a suitable GI box, modular plate/cover, 15/16 A 3-pin socket outlet with safety shutter and 15/16 A modular switch, complete with connections and earthing.

10. Medium-class PVC conduits shall be suitable for electrical wiring and shall be provided in the following sizes:
    - 25 mm dia
    - 32 mm dia
11. PVC conduits shall be complete with bends, couplers, junctions, saddles/clamps, adaptors and other required accessories.
12. Recessed conduit installation shall include necessary chasing/cutting and making good of the surface.

SUB-HEAD II – DISTRIBUTION BOARDS

1. Distribution boards shall be sheet-steel, powder-coated, double-door type, suitable for 240 V AC, surface/recessed mounted and complete with necessary internal wiring and accessories.
2. The DB shall be complete with:
    - Loose wire box
    - Terminal blocks
    - FRLS PVC insulated copper internal wiring
    - Tinned copper busbar
    - Neutral link
    - Earth bar
    - DIN rail
    - Detachable gland plate
    - Internal interconnections
    - Earthing provision
3. The Distribution Board shall be 8-way, double-door type, unless otherwise specified in the BOQ.
4. MCBs shall be 5 A to 32 A, 240/415 V AC, C-curve, suitable for inductive loads and conforming to applicable IS/IEC standards.
5. MCBs shall be properly mounted on DIN rail and shall be complete with connections, identification and testing.
6. RCCB shall be:
    - Double Pole
    - 40 A rated current
    - 230 V AC
    - 30 mA residual current sensitivity
    - Suitable for single-phase and neutral system.

7. RCCB shall be complete with mounting, connections, testing and commissioning and shall have a suitable test facility.

SUB-HEAD III – LIGHT FIXTURES AND FANS

1. LED light fixtures shall be suitable for 230 V AC supply and shall be of recessed/surface-mounted type as specified.
2. LED downlight shall have:
    - 11 W rating
    - Aluminium die-cast body
    - Proper heat-sink arrangement
    - Minimum efficacy of 90 lumens/Watt
    - Suitable LED driver
    - Complete mounting accessories.
3. LED fixture and driver shall be covered by a minimum 5-year warranty from the date of commissioning.
4. Exhaust fan shall be suitable for 230 V AC, single-phase supply and shall be complete with motor, fan blades, louver/shutter, bird/insect guard and necessary mounting accessories.
5. Exhaust fan shall be of approximately 305 mm size and 1400 RPM, as specified in the BOQ.
6. Exhaust fan installation up to 450 mm sweep shall include fixing in the existing opening, making/altering the opening wherever required, necessary supports, electrical connection, making good of damaged surfaces, testing and commissioning.
7. Louvers/shutters for exhaust fans shall be complete with suitable frame, fixing accessories and proper alignment.

SUB-HEAD IV – MCC PANELS FOR AHUs

A. Existing MCC Panel

1. Existing MCC panels shall be dismantled only after proper shutdown and complete isolation of the connected electrical supply.
2. Dismantling shall include disconnection of power and control cables, removal of cable glands/accessories, disconnection of earthing connections and safe removal of the existing MCC panel.
3. Dismantled material shall be shifted to the designated scrap/storage area as directed by C-DAC.

B. New MCC Panels

1. MCC panels shall be suitable for 3-phase, 415 V AC, 50 Hz operation and shall be designed for control and protection of the specified AHU motors.
2. MCC panels shall be fabricated using suitable CRCA sheet-steel enclosure, properly powder coated and suitable for the installation environment.
3. Panels shall be complete with suitable switchgear, busbars, contactors, overload relays, protection devices, control wiring, terminal blocks, indicating lamps, selector switches, push buttons, meters and other accessories required for complete operation.

4. Motor feeders shall have suitable short-circuit, overload and phase-failure/phase-sequence protection, as applicable.

5. Internal wiring shall be properly dressed, ferruled, numbered and terminated.

6. All incoming and outgoing cable terminations shall be provided with suitable cable glands, lugs, thimbles, ferrules and heat-shrink sleeves.

7. MCC panels shall be properly aligned, levelled, anchored and grouted wherever required.

8. Power and control cables shall be properly routed, dressed and segregated.

9. Suitable PVC conduits and accessories shall be provided for concealed/surface installation of cables wherever required.

10. All non-current-carrying metallic parts of the MCC panel and associated equipment shall be effectively earthed through two separate and independent designated earthing points, complete with suitable earthing conductors, terminals and hardware.

C. Motor Loads

MCC panels shall be suitable for the following AHU motor configurations:

1. 2 sets × 2.2 kW + 2 sets × 1.5 kW, 3-phase, 415 V AC motors.
2. 2 sets × 1.5 kW, 3-phase, 415 V AC motors.
3. 4 sets × 1.5 kW, 3-phase, 415 V AC motors.
4. Final selection of motor starters, contactors, overload relays and protective devices shall be based on the actual motor nameplate ratings and full-load current at site.

D. Testing

1. Insulation resistance test.
2. Continuity test.
3. Earth continuity test.
4. Earth resistance measurement.
5. Phase sequence verification.
6. Functional testing of switchgear and protection devices.
7. Testing of contactors and overload relays.
8. Testing of control/interlock circuits.
9. Verification of panel indications/meters.
10. Motor rotation and trial-run testing.

Complete functional testing and commissioning of the MCC panels.

ANNEXURE-B

Terms and conditions: -

The terms & condition for the work are as follows:

1. **Validity:**

Quoted rates must be valid for a period of 180 days from the date of the closing of the tender. The overall offer for the assignment and tenderer quoted price shall remain unchanged during the period of validity. If the tenderer has quoted the validity shorter than the required period, the same will be treated as unresponsive and it may be rejected.

In case the tenderer withdraws, modifies, or changes his offer during the validity period, the tender is liable to be rejected and the earnest money deposited shall be forfeited without assigning any reason thereof. The tenderer should also be ready to extend the validity, if required, without changing any terms, conditions etc. of their original tender.

2. **Time of Completion:** The Schedule time of completion for the work is within **Six Months** from the date of issuance of PO.

3. **Site Visit:**

a. Prospective bidders should undertake the site visit prior to giving commercial offer to achieve full and final laid down objective of C-DAC Noida. The certificate from CDAC for the site visit shall be uploaded with tender document.

b. The tenderers shall submit their bids through Central Public Procurement Portal (CPPP) website on https://eprocure.gov.in/eprocure/app along with documents prescribed in the eligibility criteria.

c. Tenderers are advised to inspect the site and equipment's and satisfy themselves before submitting their tender.

d. The tenderer should quote his rates in Central Public Procurement Portal (CPPP) website on https://eprocure.gov.in/eprocure/app for the schedule of quantities given in Annexure.

e. The rates quoted in the tender will not be altered by the contractor during the term of contract.

f. Canvassing whether directly or indirectly in connection with tenders is strictly prohibited and the tenders submitted by the tenderers who resort to canvassing will be liable to rejection.

g. Offers received without Bid Security Declaration /Incomplete/Late/Delayed shall be rejected out rightly**.** In case the specified date for the submission of offers is declared as a closed holiday for offices including that of in NOIDA, the bid-closing deadline shall automatically stand extended to the next working day up to the same time.

h. The contractor shall not assign or transfer the rights and responsibilities assigned to him to any other person or entity or sub-contract his services in any way to others.

i. The competent authority reserves to himself the right of accepting the whole or any part of the tender or distributing the work between one or more tenderers and the tenderer shall be bound to perform the same at the rate quoted.

j. This tender notice shall form part of the contract document. The tenderer whose tender has been accepted by the competent authority hereinafter referred to as the "contractor will have to submit Security Deposit equivalent to 5% of the quoted price/ order value. Letter of intent will be issued in favour of L1 vendor offline. Subsequently, L1 vendor will have to submit

Security Deposit in the form of PBG, NEFT or FDR within 15 days from the date of issuance of Letter of award offline. Upon receipt of Security Deposit, the order will be issued in favour of the contractor. The security deposit shall be valid for a period of **Twenty-One Months** initially (**Six months' work completion period**, twelve months' defect liability period and three Months additional). The said security deposit may be got extended in case the work completion period is delayed.

k. Non-submission of security deposit will result in cancellation of contract and any action like forfeiture of EMD, blacklisting of vendor, or any other action as deemed fit may be taken by CDAC.

4. **Technical Evaluation:** C-DAC will examine all the bids to determine whether they qualify the essential per-qualification criteria, whether all the documents as mentioned / or required in the tender document to be submitted with technical bid have submitted, whether all the documents are in prescribed format and has been properly signed & stamped and whether the bid are completed and generally in order. Tenderer who will not qualify technical evaluation shall be rejected.

5. **Financial Evaluation:** Financial bid(s) of the only technically qualified tenderer will be opened for financial evaluation.

6. **Award of Contract:** After due evaluation of the financial bids, the C-DAC will award the contract to the lowest evaluated responsive tenderer (hereinafter referred to as the "Contractor").

7. **Billing & Statutory Obligations Running Bill Payment**

   The minimum value of running bills shall not be less than Rs.20.00 Lacs based on actual site measurements duly certified by the authorized representative of CDAC /Consultant and payment of R.A. bills shall be released after duly checking by Finance and approval of competent authority.

   Final Bill Payment:

   The final bill on actual site measurements @ 100% (including all R.A. Bills) of invoice value after satisfactory completion of work duly certified by C-DAC's authorized representative. Considering the nature of work involved in this tender, the contract value may vary up to +/-25% based on the actual site conditions, measurements and requirement. The final bill amount may decrease or increase and will be settled accordingly.

8. **Delay Penalty:** If the contractor fails to complete the work and vacate the site on or before time, late penalty at the rate of 0.5% per week will be levied, subject to a maximum of 10% of the value of the work.

9. **Integrity Pact: -** The bidder is required to enter into an Integrity Pact with C-DAC. For this, the bidder shall submit the scanned copy of signed, stamped and notarized Integrity Pact as per Annexure H. Details of IEMs are provided below: 1) Shri. M P Johnson - Email ID- johnsonmp1961@gmail.com 2) Shri. Vijay Kumar Singh Email ID - vijaysinghsls10@gmail.com.

10. **Defect liability period:** The defect liability period for the material supplied against design manufacturing or workmanship defects shall be One Year from the date of completion. All the items covered in the schedule of work shall carry One Year onsite warranty including labor, maintenance etc. commencing from the date of completion of entire job by submitting a work completion report and accepted by C-DAC. During the defect liability period of One Year, repairing/rectifications of any defect should be rectified free of cost at site.

11. **Force Majeure:** Any delay due to Force Majeure will not be attributable to the Tenderer. Force Majeure events shall mean one or more of the following acts or events: Acts of God or events beyond the reasonable control of the Affected Party which could not reasonably have been expected to occur, exceptionally adverse weather conditions, lightning, earthquake, cyclone, flood, volcanic eruption or fire or landslide; Radioactive contamination or ionizing radiation; Strikes or boycotts (other than those involving the Contractor or its employees / representatives or attributable to any act or omission of any of them) interrupting supplies and services of the Project for a period exceeding a continuous period of 7 (seven) days; An act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, riot, insurrection, terrorist or military action, civil commotion or politically motivated sabotage which prevents rendering of supplies or specified services by the Contractor for a period exceeding a continuous period of 7 (seven) days.

12. **Indemnity and Insurance:-** The Contractor shall indemnify and keep C-DAC indemnified against all claims, losses, damages, costs and liabilities arising from the Contractor's acts or omissions, including death or injury to any person, damage to property, and violation of any law.

13. **Dispute Resolution and Governing Law:-**

    (a) This contract shall be governed by the laws of India.

    (b) Any dispute or difference arising out of or in connection with the tender conditions, order or contract shall first be referred by written notice for amicable resolution between senior representatives of C-DAC and the Contractor. If it is not resolved within 30 days of the notice, either party may refer it to arbitration.

    (c) The dispute shall be finally resolved by arbitration administered by the India International Arbitration Centre (IIAC) in accordance with the IIAC (Conduct of Arbitration) Regulations, 2023, as in force on the date of the notice of arbitration, which are deemed incorporated by reference.

    (d) The arbitral tribunal shall consist of a sole arbitrator, appointed in accordance with the said Regulations.

    (e) The seat and venue of arbitration shall be New Delhi. The language shall be English.

    (f) The Arbitration and Conciliation Act 1996 shall apply. The award shall be final and binding on the parties.

    (g) Subject to the above, the courts at New Delhi shall have exclusive jurisdiction

    (h) Nothing in this clause affects any statutory right of a Micro or Small Enterprise under Section 18 of the MSMED Act, 2006.

14. **Statutory and Labour Law Compliance**

    (a) The Contractor shall, at its own cost, comply with all laws applicable to the work and to the persons engaged in it, including the Code on Wages, 2019, the Industrial Relations Code, 2020, the Code on Social Security, 2020, and the Occupational Safety, Health and Working Conditions Code, 2020, together with the rules made under them and any law replacing them.

    (b) The Contractor shall hold all registrations and licenses required by law, including EPF and ESI registration, and shall furnish copies to C-DAC before commencement of work.

(c) The Contractor shall pay its workers not less than the wages prescribed by law, through bank transfer, on or before the due date. It shall deposit all statutory contributions on time and maintain the prescribed registers and records, which C-DAC may inspect at any time.

(d) All persons engaged by the Contractor, or by any sub-contractor, shall be the employees of the Contractor only. No employer-employee relationship shall arise between C-DAC and any such person, and no such person shall have any claim for employment, absorption or regularization against C-DAC.

(e) If C-DAC is held liable as principal employer for any dues, compensation or penalty arising from the Contractor's default, the Contractor shall reimburse C-DAC in full. C-DAC may pay such dues directly and recover the amount, with costs, from any bill, the Security Deposit, or any other sum due to the Contractor.

(f) Non-compliance with this clause shall be a material breach entitling C-DAC to withhold payments and to take action under the contract.

Declaration

1. I/We have meticulously gone through the contents of this tender and willingly accept the same.
2. I/We understand that if any false information is detected at a later stage, any future contract made between ourselves and CDAC, Noida based on information given by me/us can be treated as invalid by C-DAC.
3. We agree that the decision of CDAC, Noida in selection of bidders will be final and binding on me/us.
4. All the information furnished in the bid is correct to the best of my/our knowledge.
5. I/We also agree that I/We have no objection if enquiries are made about the works listed or any other enquiry on the information furnished herewith in the accompanying sheets.

Place: _____ SIGNATURE & SEAL _____

Date: _____ NAME & DESIGNATION _____

ORGANISATION_____

INSTRUCTIONS TO BIDDER

BID SUBMISSION: Bids must be submitted along with copies of all the related documents. The bid must be submitted in two parts as under:

Part No.1 (Technical Bid) shall contain:

i. EMD of Rs. 2,50,000/- or Bid Security Declaration letter as per **Annexure – E** (for MSEs and Startups submitting relevant certificates), duly signed & stamped by the authorized signatory of the bidding firm.

ii. **Certificate of incorporation** - The company should have been incorporated/ in existence for a minimum period of 5 years (3 years for MSEs and Startups).

iii. **Address proof** – The Company should have a permanent establishment in Delhi/ NCR.

iv. **Turnover** – Average annual turnover during the last 3 years i.e. FY 2023-24, 2024-25 & 2025-26 shall be at least **Rs.50 Lakhs**. Copy of audited balance sheet and turnover statement duly certified by Chartered Accountant needs to be submitted.

Note: 25% relaxation is applicable to MSEs and Startups submitting relevant certificates.

v. **Copies of Work Orders:** - The bidder should have successfully executed similar type of works (Civil, Electrical) for a Government Department/ organization/ Public Listed company during past five financial years with following criteria: -

a) Three works of minimum value of – **Rs. 40 Lakhs each, or**

b) Two works of minimum value of – **Rs. 50 Lakhs each, or**

c) One work of minimum value of — **Rs. 80 Lakhs each**

(Copy of satisfactory completion certificates issued by the client clearly indicating value of the work shall be submitted).

Note: In case of MSE/ Startup firms, the bidder needs to have at least one similar work order duly executed equal to **Rs. 50 Lakhs each**

vi. GST Registration certificate and PAN

vii. IT returns:- The bidder should have filed IT returns for the last three assessment years.

viii. Pre-bid inspection report as per Annexure 'D'.

ix. Certificate of not being blacklisted as per Annexure 'F'.

x. Consent to contract value variation as per Annexure 'G'.

xi. Integrity Pact as per Annexure 'H'.

xii. Land border sharing declaration as per Annexure 'I'.

xiii. Make in India Local content declaration as per Annexure 'J'.

xiv. Technical bid with full details including description of Makes of the materials for technical assessment of the proposal. The Bidder must quote only for reputed and ISI Mark materials.

xv. All the documentary proof of applicable standards and bench marks should be submitted along with the technical bids.

xvi. Certificate of accepting all tender terms & conditions.

Part-II (Price Bid): The price bid (BOQ) as per Annexure-C shall be submitted along with quoting the price on Central Public Procurement Portal (CPPP) website on https://eprocure.gov.in/eprocure/app .

i) The price bid (BOQ) in excel sheet format shall be uploaded online only. (PIRCE BID SHOULD NOT BE SUBMITTED IN A SEALED ENVELOPE.)

ii) The PRICE PART shall contain only schedule of rates dully filled in, NO stipulation, deviation, terms & conditions, presumptions etc. is permissible in price part of the bid. CDAC shall not take any cognizance of any such conditions and may at its discretion reject such price bid.

iii) Price should be given in INR in figures only.

iv) Bidders are advised to fill the BOQ file as per following instructions:

a. The bidder has to download the BOQ file along with tender documents and subsequent corrigendum, if any.

b. Bidder to note that there are Blue cell in BOQ file, which should not be modified by the bidder.

Bidders are advised to fill Blue cells meant for the rates and GST. Which are to be entered by the bidders.

c. Bidders are advised strictly not to alter or change the BOQ format/contents. Bidders are also advised not to paste any image file with BOQ.

a. The bidder shall submit the tender online on e-tendering on Central Public Procurement Portal (CPPP) website on https://eprocure.gov.in/eprocure/app site on or before the date & time of bid submission. Tender submitted by any other form (fax/ email/ courier/ post/ hard copy) will not be accepted.

b. Price offered by the bidder shall not appear in any manner in the technical bid.

INSTRUCTION TO BIDDER (ITB)

1. **Product Specifications & Compliance Statement**: The Bidder should quote rates using the materials strictly as per the tender specifications and only of technically reputed brands as mentioned. Complete technical details along with brand, specification, technical literature etc. highlighting the specifications must be supplied along with the technical bid. Each page of the bid and cuttings / corrections shall be duly signed and stamped by the authorized signatory. Failure to comply with this requirement may result in the bid being rejected.

2. If any material or part thereof is lost or found defective during execution, the Bidder shall immediately arrange to bring the materials or part thereof, as the case may be, at no extra cost.

3. C-DAC, Noida reserves the right to accept / reject the offers or cancel the whole tender proceedings without assigning any reason whatsoever.

4. C-DAC shall not be responsible for delayed submission or non- submission of bid due to any reason whatsoever.

5. Disclaimer: This Tender is not an offer by C-DAC, Noida, but an invitation for Bidder's response. No contractual obligation whatsoever shall arise from the tender process.

6. Declaration: The Bidder would be required to give a certificate as below in his commercial bid.

"I/WE UNDERSTAND THAT THE QUANTITY PROVIDED ABOVE IS SUBJECT TO CHANGE. I/WE AGREE THAT IN CASE OF ANY CHANGE IN THE QUANTITIES REQUIRED, I/ WE WOULD BE EXECUTING THE WORK AT THE RATES AS SPECIFIED IN THIS PRICE BID. I /WE AGREE TO ADHERE TO THE PRICES GIVEN ABOVE EVEN IF THE QUANTITIES UNDERGO A CHANGE".

SIGNATURE OF THE BIDDER WITH STAMP

ANNEXURE-C

Name of work: .:"Renovation of Toilets in Anusandhan Bhawan at Plot No. C-56/1, Sector- 62, C-DAC, Noida - 201309 (U.P.)"

BOQ

Sl. No.	Item Description	Item Code / Make	Quantity	Units
1	2	3	4	5
1	**GENERAL** 1. Technical specifications and mode of measurements for the work shall confirm to relevant IS Codes. 2. All the personnel / workers including their Supervisors shall maintain very good behaviour and discipline while working within the office premises. 3. The Contractor shall remove all the debris resulting from the work and dispose it off outside the Complex area. 4. The contractor shall take utmost care to prevent any damage to building structure, in case of any damage, the contractor shall be STRICTLY liable to make good the cost of such damages. 5. All items of work contracted for shall be executed strictly in accordance with the description of the item in the Bill of Material; specifications read in conjunction with the appropriate Indian Standard specifications and conditions of the contract and established Engineering practices.			
1.1	**CARRIAGE OF MATERIALS**			
1.2	Disposal of moorum/building rubbish/ malba/ similar unserviceable, dismantled or waste material by mechanical transport including loading, transporting, unloading to approved municipal dumping ground for lead up to 10 km for all lifts, complete as per directions of Engineer-in-charge. **Note** - item to be applicable in urban areas having directions for restricted hours for movement/ plying of load carrying motor vehicle of 3.5 cum or more.	item1	90.00	Cum
1.3	**BRICK WORK**			
2	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : 1. Brick Quality: Use bricks with compressive strength and soak them in water for 10–15 minutes before laying to prevent absorption of water from the mortar. 2. Mortar Mix & Application: Use a 1:4 cement-sand ratio. Ensure all vertical and horizontal joints are filled completely, with a maximum joint thickness of 10–12 mm.3. Bond & Alignment: Use English Bond (alternating headers and stretchers) for maximum strength. Ensure a fair-face finish on both sides, with true and plumb vertical alignment.4. Construction Height: Do not raise walls more than 1.5 meters per day to prevent sagging and mortar deformation.5. Curing: Cure the brickwork for at least 7-10 days to ensure proper strength gain.6. Scaffolding: Use robust double scaffolding that does not restrict the alignment or quality of the brickwork.	item2	16.00	Cum

Sl. No.	Item Description	Item Code / Make	Quantity	Units
3	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level: 1. Brick Selection & Preparation: Use high-quality, fully burnt bricks. Soak them in water for at least 1–2 hours before use to prevent them from absorbing water from the mortar. 2. Mortar Mix & Joints: Use a 1:4 cement-sand mix. Keep vertical and horizontal joints between 10mm and 12mm thick to ensure stability. 3. Reinforcement: To prevent cracking, insert reinforcing materials such as 6mm or 8mm diameter mild steel bars, hoop iron, or expanded mesh every third or fourth course, properly anchored into the main structure. 4. Structural Stability (115 mm Walls): 4a. Max Height: Raise the wall no more than 1.5 meters per day to prevent buckling. 4b. Structural Connection: Install concrete stiffener columns (tie-columns) at intervals, usually every 2.5 meters or at corners, to provide lateral stability. 4c. Raking Joints: Rake the mortar joints to a depth of 10-12 mm while the mortar is still green to ensure good adhesion for plastering. 5. Quality Control: Ensure the wall is perfectly vertical by checking with a plumb bob, spirit level, and string line at every stage. 6. Curing: Start curing 24 hours after construction and continue for at least 7 days, twice daily, to achieve proper strength. 7. Foundation/Base: Ensure the first layer is laid on a solid RCC surface (like a plinth beam) and use cement paste for a strong bond. 8. Scaffolding: Use robust double scaffolding that does not restrict the alignment or quality of the brickwork.	item3	163.00	Sqm
4	Extra for providing and placing in position 2 Nos 6mm dia. M.S. bars at every third course of half brick masonry.	item4	163.00	Sqm
4.1	**Stone Work**			
5	Providing and fixing 18 mm thick gang saw cut, Granite stone mirror polished, pre-moulded and pre-polished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. Granite stone slab all colour and texture except black, Cherry/Ruby red Area of slab up to 0.50 sqm	item5	21.00	Sqm
6	Providing edge moulding to 18 mm thick granite stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge. Granite work	item6	15.00	Meter

Sl. No.	Item Description	Item Code / Make	Quantity	Units
7	Extra for fixing granite stone, over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive, including cleaning machine polishing to edge to give high gloss finish etc. complete.	item7	15.00	Meter
8	Extra for providing opening of required size & shape for wash basin/ kitchen sink in kitchen platform, vanity counter and similar location in Granite/ stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.	item8	22	Each
9.1	**WOOD WORK & PVC WORK**			
9	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 Material Selection**: Use kiln-seasoned hardwood to prevent warping and decay, especially for exterior doors. **Structural Integrity**: Use heavy-duty, rust-resistant fasteners to fix the frame, ensuring it is properly anchored to the wall to carry the weight of the door. **Precision Installation**:**Level & Plumb**: Use shims and a spirit level to ensure the frame is perfectly vertical and horizontal.Check Squareness: Measure diagonals to ensure the frame is perfectly square.**Spacing**: Leave a small, uniform gap (roughly 3mm or1/8-inch) on all three sides for expansion. **Moisture Protection**: Apply wood preservatives, sealants, or primer to the entire frame before installation, especially on the bottom where it meets the floor. **Anchoring**: Use holdfasts or rawl bolts to anchor the frame securely into the masonry. **Rebated Design**: The door frame should have a secure rebate to prevent the door from swinging in both directions and to enhance security.	item9	0.60	Cum

Sl. No.	Item Description	Item Code / Make	Quantity	Units
10	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters: 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws as follows: Moisture Conditioning: Store the door in the environment where it will be installed for 48 hours before fitting to allow it to acclimate, reducing the risk of swelling or shrinking. Framing Alignment: Ensure the door frame is perfectly square and level. The shutter should have a clearance of roughly 2mm to 3mm from the frame on all sides for smooth operation. Hinge Installation: Use high-quality hardware. For a typical 35mm door, 4 to 5 stainless steel hinges are recommended to prevent sagging. Painting/Finishing: Apply paint or veneer to the top and bottom edges (not just the faces) to prevent moisture from entering the core. Fixing Hardware: Use screws and a screwdriver to fix hinges, never a hammer, to avoid loosening the ply.	item10	26.00	Sqm
11	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).	item11	26.00	Sqm
12	Providing and fixing bright finished brass tower bolts (barrel type) with necessary screws etc. complete : Size 250x10 mm	item12	30	Each
13	Providing and fixing bright finished brass hanging type floor door stopper with necessaryscrews, etc. complete.	item13	12	Each
14	Providing and fixing aluminium die cast body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight up to 35 kg and door width up to 700 mm), with necessary accessories and screws etc. complete.	item14	12	Each
15	Providing and fixing chromium plated brass 100 mm mortice latch and lock with 6 levers and a pair of lever handles of approved quality with necessary screws etc. complete.	item15	30	Each
16	Providing and fixing high security SS202 Cylindrical lock with computer key backset 60mm, SS Finish of approved quality with necessary screws etc. complete. Make- Doorset, Godrej, Harrison	item16	18	Each
16.1	**FLOORING & DADO**			
17	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge with Polished Granite stone slab colour of Black, Cherry/Ruby Red or equivalent.	item17	87.00	Sqm

Sl. No.	Item Description	Item Code / Make	Quantity	Units
	Preparation and Substrate 1. Subfloor Inspection: The surface must be clean, dry, and free of dust, oil, and loose debris. 2. Levelling: Ensure the subfloor is perfectly levelled before beginning the installation. Use cement mortar (1:6 ratio) to create a level bedding, typically 20 mm thick below the slab. Installation Method 3. Cement Slurry: Apply a cement slurry over the mortar bed before placing the granite to ensure proper adhesion. 4. Bedding Mortar: Use a stiff cement-sand mortar bed. Ensure no hollows or air spaces are left beneath the slab. 5. Laying the Slabs: Use a rubber mallet or wooden pole to tap the granite slab gently into place, ensuring it is level with surrounding slabs. 6. Joints: Leave a small, consistent gap (approx. 2 mm) between tiles/slabs to allow for natural expansion. Post-Installation Care 7. Curing: The installed granite must be cured with water for at least 3 days. 8. Grouting: Fill the joints with grout coloured to match the granite. 9. Polishing: Perform final machine polishing to ensure a smooth, level finish.			
18	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS: 15622, 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. Size 1200x600 mm (Base Rate Rs: 80 Per Sqft) **Makes:- (i) Johnson, (ii) Kajaria, (iii) Somany Preparation and Planning**1. Surface Preparation: Ensure the wall is clean, dry, and smooth. Use water-resistant backer board (cement board) for wet areas like showers. 2. Layout Planning: Start from the centre of the wall to avoid thin, awkward slices at the corners. Use a level to mark horizontal and vertical reference lines. 3. Tile Inspection: Check all tiles for chips or defects before installing. **Installation Techniques**4. Adhesive Selection: Use a high-quality thin-set mortar or mastic appropriate for your substrate and tile type. Apply adhesive with the correct notched trowel size. 5. Setting Tiles: Use tile spacers to ensure uniform, straight grout lines. Use a rubber mallet to gently tap tiles into place for a level finish. 6. Cutting: Use a wet saw for the cleanest cuts on glazed tiles. **Grouting and Finishing**7. Grouting: Apply grout to the joints, then clean off excess with a damp sponge after it sets, taking care not to gouge the joints.8. Movement Joints: Use silicone sealant instead of grout in corner joints, where walls meet countertops, and around window frames to allow for expansion.9. Initial Cleaning: Remove haze and residue promptly with a, clean, damp sponge.	item18	407.00	Sqm
19	Providing and fixing dry cladding upto 25 metre heights with 18mm thick gang saw cut stone with machine cut	item19	54.00	Sqm

Sl. No.	Item Description	Item Code / Make	Quantity	Units
	edges of uniform colour and size upto 1mx1m, fixed to structural steel frame work and/ or with the help of cramps, pins etc. and sealing the joints with approved weather sealant as per Architectural drawing and direction of Engineer-in-charge. (The steel frame work, stainless steel cramps and pins etc. shall be paid for separately).**Substrate Preparation**: Ensure the wall is clean, dry, and capable of holding the weight. **Adhesive Choice**: Use a high-quality flexible adhesive designed for natural stone and apply it in a full bed rather than dot-and-dab to prevent air pockets. **Dry Hanging Technology**: For large stones, utilize proper anchoring methods (metal fasteners/hangers) that provide a 2 cm drainage gap to prevent water damage. **Site Planning**: Pre-plan your layout and, according to, verify stone sizes for precision. **Stone Selection**: Choose appropriate stones for the environment, favouring igneous rocks like granite for exterior durability. **Environmental Handling**: For exteriors, use flashing to manage moisture and prevent, as described in, porous stones from getting waterlogged.			
19.1	**Finishing**			
20	12 mm cement plaster of mix 1:4 (1 cement: 4 coarse sand) as follows: 1. Surface Preparation: Thoroughly clean masonry surfaces of dust, oil, and loose mortar. Roughen the surface to provide a mechanical bond for the plaster. 2. Dampen Surfaces: Soak the wall thoroughly with water at least 6 hours before plastering to prevent the brickwork from sucking water out of the mortar. 3. Mortar Mix Ratio: Use a 1:4 (1 part cement, 4 parts sand) ratio for a stronger, more durable finish 4. Application: Apply in a single coat to 12mm thickness, ensuring a smooth, true vertical surface using a plumb bob. 5. Curing: Maintain moist conditions for at least 7 days to ensure strength and prevent premature drying. 6. Materials: Use clean sand with less than 8% silt content. PPC is preferred over OPC for better crack resistance. 7. Joint Reinforcement: Utilize chicken wire mesh at joints between concrete and brickwork to minimize cracking.	item20	825.00	Sqm
21	18 mm thick cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) finished with a top layer 6 mm thick cement plaster 1:3 (1 cement : 3 coarse sand) as follows: 1. Surface Prep: Clean and pre-wet the wall thoroughly; perform hacking on concrete surfaces to improve adhesion.2. Thickness Control: Use bull marks (level guides) across the wall to maintain a uniform 18mm thickness.3. Crack Prevention: Install chicken wire mesh at junctions (e.g., brick-to-concrete) and over electrical conduits.4. Curing: Maintain a moist surface by watering for at least 7 to 10 days to achieve full strength.	item21	84.00	Sqm

Sl. No.	Item Description	Item Code / Make	Quantity	Units
22	6mm thick cement plaster of mix 1:3 (1 cement : 3 fine sand) as follows: 1. Substrate Preparation: Ensure the surface is clean, free from oil/dust, and roughened to improve bonding. If applying to concrete, the surface should be properly hacked. 2. Surface Moisting: The backing surface must be moistened for several hours (often 6 hours) before applying plaster to prevent it from absorbing water from the mix. 3. Mixing Ratio: A mix of 1 part cement to 3 or 4 parts sand (or) is recommended for high-strength applications like ceiling or RCC surfaces. 4. Application: Apply the mortar to a uniform 6mm thickness, ensuring it is well-pressed to fill all voids. 5. Finishing: Use a wooden float for levelling and a steel float for a smooth, finished surface, as detailed in the UltraTech Cement guide on plastering materials. 6. Curing: Start curing 24 hours after application and maintain moisture for at least 7 to 14 days, as described in the Bharathi Cements guide to good construction practices.	item22	128.00	Sqm
23	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers.	item23	84.00	Sqm
24	Finishing walls with ready mixed Premium acrylic emulsion paint (Company Depot Tinted) having VOC less than 50 gm/litre and UV resistance as per IS 15489:2004, Alkali & fungal resistance, dirt resistance exterior paint of required shade with silicon additives. New work (Two or more coats applied @ 1.43 litre/ 10 sqm over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm.	item24	43.00	Sqm
25	Finishing walls with textured exterior paint of required shade : New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sqm as follows:**Preparation of surfaces**: Scrub walls to remove debris and fill cracks with exterior-grade filler. A clean, smooth base is vital for adhesion.**Primer**: Apply an alkali-resistant primer. This seals the surface and prevents the texture from peeling or soaking in unevenly.**Apply**: Use a long-nap roller (3/4" or more) for uniform grit, or a trowel for heavy patterns like stucco. Work in small sections to maintain a "wet edge" and avoid visible seams.**Seal**: Finish with a weather-resistant topcoat to protect the texture from UV and moisture.	item25	84.00	Sqm

Sl. No.	Item Description	Item Code / Make	Quantity	Units
26	Polishing in high gloss/matt finish melamine clear polish on wood work in required colour/wooden shade texture with following process in the sequence as detailed below: 1. The surface to be polished is rubbed with sand paper 80/120 no. and then with sand paper of 160/180 nos. 2. Applying two coats of sealer with spray gun and allowing sufficient drying time for 1st coat and 2nd coat is allowed to dry for 8 to 12 hrs. 3. On drying of sealer coat, wet rubbing with emery cloth of finer grading with ample water to remove excess sealer layer and make the surface further smooth after this wet rubbing, then surface is applied with special grade melamine fillers to fill all the small and big holes/grooves etc. Filler coat to be allowed to dry for 4 to 6 hrs on which again a light wet rubbing is done this surface is further allowed to dry for 12 hrs. 4. On this, 1st coat of melamine polish is applied with spray gun using melamine clear polish and melamine thinner in required proportion. This 1st coat is allowed to dry for 24 hrs then this dry surface is again fine wet rubbed smooth, which is further allowed to dry for 12 hrs. The final melamine polish is applied with compressor pressure spray gun using melamine clear polish and melamine thinner mixed in required proportion complete as per direction of Engineer-in-Charge. (Final coat to be done in 1 or 2 layers without gap of time.)	item26	52.00	Sqm
26.1	**ALUMIINIUM WORK**			
27	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, panelling and dash fasteners to be paid for separately) : For fixed portion Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	item27	11.00	Kg
28	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 mm thickness (weight not less than 12.50 kg/sqm)	item28	3.00	Sqm

Sl. No.	Item Description	Item Code / Make	Quantity	Units
29	Providing and fixing anodised aluminium 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 @ 100 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment).	item29	162.00	Kg
29.1	**WATER PROOFING**			
30	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of: i) Ist course of applying cement slurry @ 4.4 kg/sqm mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface. ii IInd course of 20 mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface. iii) IIIrd course of applying blown or residual bitumen applied hot at 1.7 kg. per sqm of area. iv) IVth course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 kg/ sqm).	item30	119.00	Sqm
31	Providing and laying cinder filling in sunken floors and other locations with approved quality cinder including watering and light ramming etc. required for proper compaction/completion of the work complete in all respects as per drawings and as directed by the Engineer in Charge.	item31	22.00	Cum
31.1	**FALSE CEILING**			

Sl. No.	Item Description	Item Code / Make	Quantity	Units
32	Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm centre to centre and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm centre to centre along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge with GI Metal Ceiling Lay in plain Tegular edge Global white colour tiles of size 595x595 mm, and 0.5 mm thick with 8 mm drop; made of G I sheet having galvanizing of 100 gms/sqm (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending.	item32	83.00	Sqm
32.1	**REPAIRS TO BUILDING**			
33	Providing and fixing double scaffolding system (cup lock type) on the exterior side, up to seven story height made with 40 mm dia M.S. tube 1.5 m centre to centre, horizontal & vertical tubes joining with cup & lock system with M.S. tubes, M.S. tube challies, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it there after. The scaffolding system shall be stiffened with bracings, runners, connection with the building etc wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer-in-charge. The elevational area of the scaffolding shall be measured for payment purpose. The payment will be made once irrespective of duration of scaffolding.**Note**: - This item to be used for maintenance work judicially, necessary deduction for scaffolding in the existing item to be done.	item33	108.00	Sqm
33.1	**DISMANTLING AND DEMOLISHING**			
34	Dismantling W.C. Pan, Wash basin, Urinals with partition of all sizes including disposal of dismantled materials including malba all complete as per directions of Engineer-in-Charge.	item34	34	Each

Sl. No.	Item Description	Item Code / Make	Quantity	Units
35	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge.	item35	1.00	Cum
36	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge. In cement mortar	item36	43.00	Cum
37	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead : Of area 3 sq. metres and below	item37	30	Each
38	Dismantling wood work in frames, trusses, purlins and rafters up to 10 metres span and 5 metres height including stacking the material within 50 metres lead : Of sectional area below 40 square centimetres	item38	86.00	Meter
39	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead. For thickness of tiles 10 mm to 25 mm	item39	81.00	Sqm
40	Demolishing dry brick pitching in floors, drains etc. including stacking of serviceable material and disposal of unserviceable material within 50 metres lead	item40	24.00	Cum
41	Dismantling cement asbestos or other hard board ceiling or partition walls including stacking of serviceable materials and disposal of unserviceable materials within 50 metres lead.	item41	81.00	Sqm
42	Dismantling C.I. or asbestos rain water pipe with fittings and clamps including stacking the material within 50 metres lead : upto 150 mm dia pipe	item42	18.00	Meter
43	Dismantling G.I. pipes (external work) in vertical shaft / toilets/ underground lines including excavation and refilling trenches after taking out the pipes, manually/ by mechanical means including stacking of pipes within 50 metres lead as per direction of Engineer-in-charge : upto 50 mm nominal bore or any dia. as per existing lines	item43	36.00	Meter
44	**Benches in Ladies toilet** : Wooden PU polish Bench, the Size of the Bench shall be 1200mm width x 450 mm Depth x 450mm height. As per approved design:	item44	2.00	Each
45	Supply and installation of Stainless steel signage boards for Ladies, Gents and Handicapped Toilets of following sizes: 375x100 and 2mm thick Stainless Steel Letter Sign Board	item45	720.00	Sq. inches

Sl. No.	Item Description	Item Code / Make	Quantity	Units
46	Providing & fixing - Whirl Restroom Cubicle (of following standard dimension which includes 600mm door size width) self-supporting 18mm thick compact laminates made out of, urea free, thermosetting phenolic resins treated Kraft papers as core material and Amino plastic resin treated decor papers on the finish surface, conforming to latest and applicable IS: 2046-1995, EN 438:2016 and NEMA LD3-2005 quality standards with Antivirus, Antibacterial and Antifungal properties (conforming to ISO 21702:2019, JIS Z2801:2010 and ASTM G21-2015 standards respectively) to fulfil the applicable requirements of indoor air quality certifications for Greenguard-Gold standards. This also includes providing and fixing in position necessary hardware made out of Stainless steel (Grade 316), Aluminium 6063 -T6 and Anodised Zinc Diecasted as per manufacturer's specifications & Architects instructions like (1) SS Spring Loaded Hinges (2) Zn Slide Bolt with Occupancy indicators (3) Zn Coat hooks (5) Aluminium anodised U- F Channels (4) SS Shoe Box (5) SS grade 316 RAB (6) Rubber noise deafening tape, (7) Screws & wall Plugs. All screws will of 316 Grade in stainless steel . All pilasters are supported by stainless steel shoe box. The base of the stainless steel shoe box will be anchored to the floor with a clearance height upto 100 mm of following sizes: Toilet Cubicle with standard dimension of 1840mm Height x 1000mm Width x 1500mm Depth, which includes 600mm door size width).	item46	16	Each
47	Supplying, Installation, Testing & commissioning of Swivel Mirror 615 X 445mm Oval Shape (Make- Jaquar/ Saint Gobin/ Kohler)	item47	12	Each
48	Supplying, Installation, Testing & commissioning of Toilet Roll Holder with Stainless Steel Flap (Make- Jaquar/ Kohler/ Hindware)	item48	18	Each
49	Supplying, Installation, Testing & commissioning of Rimless Bowl with Cistern For Coupled WC with UF Soft Close Slim Seat Cover, Hinges, Conversion Bend, Dual Flush Cistern Fitting, Fixing Accessories and Accessories Set, Size: 390x645x845 mm, S Trap- 250 mm (with Conversion Bend) (Make- Jaquar/ Kajaria/ Hindware)	item49	18	Each
50	Supplying, Installation, Testing & commissioning of Essco Jaquar Brass Jet Spray Nozzle (Chrome) (Make- Jaquar/ Kajaria/ Hindware)	item50	18	Each
51	Supplyingg, Installation, Testing & commissioning of Hand Shower (Health Faucet) with 8mm Dia, 1 Meter Long Flexible Tube & Wall Hook (Make- Jaquar/ Kohler/ Hindware))	item51	18	Each
52	Supplying, Installation, Testing & commissioning of Bottle Trap 32mm Size with 250mm & 190mm Long Wall Connection Pipes & Wall Flange (Make- Jaquar/ Kohler/ Hindware)	item52	20	Each
53	Supplying, Installation, Testing & commissioning of Soap Dispenser with Glass bottle (Make- Jaquar/ Kohler/ Hindware)	item53	12	Each

Sl. No.	Item Description	Item Code / Make	Quantity	Units
54	Providing and fixing un plasticised PVC connection pipe with brass unions 45 cm length 15 mm nominal bore	item54	20	Each
55	Supplying, Installation, Testing & commissioning of 2 Way Bib Cock with Wall Flange (Make- Jaquar/ Kohler/ Hindware)	item55	6	Each
56	Supplying, Installation, Testing & commissioning of Laguna tall Boy Sensor Faucet for Wash basin with Pre-mixed Water Supply Kit (with AC adaptor and AC+DC Operated) Hot & Cold (2 inlets) (Make- Jaquar/ Kajaria/ Hindware)	item56	20	Each
57	Supplying, Installation, Testing & commissioning of Under Counter Basin with Fixing Accessories, Size: 590x430x215 mm (Make- Jaquar/ Kohler/ Hindware)	item57	20	Each
58	Supplying, Installation, Testing & commissioning of Urinal without Sensor with Fixing Accessories, Size: 480x300x740 mm (Make- Jaquar/ Kajaria/ Hindware)	item58	24	Each
59	Supplying, Installation, Testing & commissioning of Urinal Sensor with AC adaptor (AC+DC) with Flushing adjustable in polished chrome (Make- Jaquar/ Kohler/ Hindware)	item59	24	Each
60	Supplying, Installation, Testing & commissioning of Grab Bar Vertical Swing (Make- Jaquar/ Kajaria/ Hindware)	item60	4	Each
61	Supplying, Installation, Testing & commissioning of Flash touch-free infrared hand dryer with 1150W rated power & carbon brush motor Material: 304 Stainless Steel Finish: Stainless Steel Finish (Make- Jaquar/ Kohler/ Hindware)	item61	12	Each
62	Supplying, Installation, Testing & commissioning of (FUS-29041) 2 Way Bib Cock with Wall Flange (Make- Jaquar/ Kohler/ Hindware)	item62	12	Each
63	Providing and fixing Automatic Sanitary Napkin Wending Machine 50 napkins capacity, Material- MS Powder coated, Power- Single Phase 220V 16Amp, Wall Mounted, Size- 720X160X480 mm	item63	2	Each
64	Supply & installation of closed cell nitrile 13mm rubber insulation on duct complete with closed cell nitrile rubber elastomeric insulation of following of thickness. Quoted price shall be inclusive of Pidilite SR-505 or equivalent adhesive as required and as per the specifications.	item64	52.80	Meter
65	Supplying, Installation, Testing & commissioning of Hot & Cold Water Cooler Stainless Steel body, Storage capacity-150 liter, Cooling Capacity- 150 Liter Per Hour and 10 litre warm water per hour, Refrigerant- R-32, Compressor- Rotary Type, Thermostat Type (Range)- Electromechanical (8 to 24 Degree Celsius), Cabinet material- SS 304, Storage tank Material food grade -SS 304, Thermal Insulation for body - PUF (36 mm), Foot type and Material- Plastic and adjustable type. Make-Usha, Blue Star, Voltas (The Placement of the Water Cooler shall be above sixth floor of Mumty roof terrace. The cost of placing the machine should be included in the coated rates.)	item65	2	Each

Sl. No.	Item Description	Item Code / Make	Quantity	Units
66	Supplying ; Installation, testing & commissioning of (FUS- MCH-29037) Bib cock with wall flange (make - jaquar/Kohlar / hindware)	item66	12	Each
67	Providing and fixing 18mm thick Granite urinal partition size 6'0"x1'6" ,both side polished with edge polish and moulding as per design fixed on floor with SS leg with 6 " gap from the floor including cutting and making good the walls and floors wherever required etc. all complete .	item67	18	Each
68	Providing and fixing MS holder bat clamps of approved design to cast iron (spun) pipe embedded in and Including cement concrete blocks 10 x10 x10cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) including cost of cutting holes and making good the walls etc. For 100mm dia. Pipe	item68	36	Each
69	Providing and fixing PTMT grating of approved quality and colour Circular type 125 mm nominal dia	item69	36	Each
70	Providing and laying cement concrete 1:5:10 (1 cement: 5 coarse sand: 10 graded stone aggregate 40 mm nominal size) alround CI HUBLESS including bed concrete as per standard design. **Note**: This work shall be done all-round PIPE AT ground floor's toilet. 100mm diameter	item70	20.00	Meter
70.1	**INTERNAL DRAINAGE INSTALLATIONS**			
70.2	Providing, fixing and jointing in position UPVC (SWR) pipe Type-B for soil waste, rain water and vent or antisyphonage pipe of approved make including all fittings (plain or door) e.g. bends, junctions, cowls, offsets, access pieces jointing including fixing the pipe on the wall/ceiling with suitable clamps ,holder bat clamps and anchor fastener of approved design to SWR pipe embedded, cement concrete block 10x10x 10 cm of 1:2:4 (1 cement: 4 coarse sand: 4 graded stone aggregate 20 mm nominal size), cutting holes in wall and floors, excavation, refilling and disposal of surplus earth where required and marked good complete etc. and as per direction of Engineer in Charge.			
71	40 mm dia	item71	24.00	Meter
72	50 mm dia	item72	19.20	Meter
73	110 mm dia	item73	60.00	Meter
74	Providing and fixing UPVC(SWR) Type-B of size 110 mm x75x40 mm Multi Floor Trap along with 110 mm dia PVC pipe up to floor level and PVC grating of approved make with suitable jointing to ensure leak proof service as per instruction for laying & jointing recommended by the manufacturer and including cement concrete 1:2:4 under and around the multi floor trap where required up to floor level complete in all respects including cutting and making good the walls and floors etc. complete in all respect as per full satisfaction of the Engineer – in – Charge. With 63 mm i/d outlet. (110 x 75 x 40)	item74	18	Each

Sl. No.	Item Description	Item Code / Make	Quantity	Units
75	Providing and fixing UPVC(SWR) Type-B of size 110 mm x 90 mm Nahani Trap along with 110 mm dia PVC pipe up to floor level and PVC grating of approved make with suitable jointing to ensure leak proof service as per instruction for laying & jointing recommended by the manufacturer and including cement concrete 1:2:4 under and around the Nahani trap where required up to floor level complete in all respects including cutting and making good the walls and floors etc. complete in all respect as per full satisfaction of the Engineer – in – Charge. With 90 mm i/d outlet.	item75	24	Each
76	Providing and fixing end cap (door piece) of uPVC for cleaning of 110mm OD	item76	36	Each
77	Providing and fixing uPVC 110mm P Trap with minimum 50mm water seal with rubber seal on inlet to push fit hopper for indirect waste connections	item77	18	Each
78	Providing, fixing, testing and commissioning of pipe inlet fittings fabricated with UPVC with maximum 3 inlets 40, 50 & 75 mm OD size UPVC pipe, fixed to 'P' traps including Dripseal/Pipe seal/solvent /rubber ring joint complete .	item78	36	Each
78.1	**WATER SUPPLY INSTALLATIONS**			
78.2	Providing and fixing CPVC pipes having thermal stability for hot and cold water supply including all CPVC plain and brass threaded fittings including fixing the pipe with clamps at 1.00 mt spacing. this includes jointing of pipes and fittings with one step CPVC solvent cement and testing of joints complete as per direction of engineer in charge: Internal work -Exposed on Wall			
79	15 mm nominal outer dia pipes	item79	42.00	Meter
80	20 mm nominal outer dia pipes	item80	96.00	Meter
81	25 mm nominal outer dia pipes	item81	232.00	Meter
82	32 mm nominal outer dia pipes	item82	111.00	Meter
83	40 mm nominal outer dia pipes	item83	135.00	Meter
84	50 mm nominal outer dia pipes	item84	126.00	Meter
85	Providing and fixing in position 25 mm diameter mosquito proof coupling of approved municipal design.	item85	4	Each
85.1	Providing and fixing CPVC pipes having thermal stability for hot and cold water supply including all CPVC plain and brass threaded fittings including fixing the pipe with clamps at 1.00 mt spacing. this includes jointing of pipes and fittings with one step CPVC solvent cement and the cost of cutting chases and making good the wall same including testing of joints complete as per the direction of engineer incharge For concealed work including cutting chases and making good the wall etc. of following sizes:			
86	15 mm nominal outer dia pipes	item86	300.00	Meter
87	20 mm nominal outer dia pipes	item87	48.00	Meter
87.1	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.(External work) of following sizes:			
88	25 mm dia, nominal bore	item88	10.00	Meter

Sl. No.	Item Description	Item Code / Make	Quantity	Units
89	32 mm dia, nominal bore	item89	15.00	Meter
90	40 mm dia, nominal bore	item90	15.00	Meter
91	50 mm dia, nominal bore	item91	15.00	Meter
91.1	Providing and fixing of gun metal gate valve with CI wheel of approved quality (screwed ends)			
92	25mm dia, nominal bore	item92	2	Each
93	32 mm dia, nominal bore	item93	2	Each
94	40 mm dia, nominal bore	item94	2	Each
95	50 mm dia, nominal bore	item95	2	Each
95.1	Providing and fixing following gun metal non- return valve of approved quality (PN 1.6)			
96	40mm dia. nominal bore	item96	2	Each
97	50mm dia. nominal bore	item97	2	Each
97.1	Providing and fixing following brass stop cock of approved quality			
98	15mm dia. nominal bore	item98	12	Each
99	20mm dia. nominal bore	item99	12	Each
100	BUTTERFLY VALVE (MANUAL) with C I body SS Disc, Nitrile Rubber Seal & O- Ring PN 16 pressure rating for chilled water/hot eater circulation as specified 65 nominal bore	item100	2	Each
100.1	**WATER SUPPLY- INTERNAL WORK**			
100.2	Providing and fixing following brass ball valve with SS 304 Stem and ball, teflon seat complete (PN-40).			
101	15 mm dia nominal bore	item101	12	Each
102	20 mm dia nominal bore	item102	24	Each
103	25 mm dia nominal bore	item103	24	Meter
103.1	Providing, fixing, testing and commissioning of motorised butterfly valve of following dia for filling of overhead water tank complete with high and low level control switches to control tanks. The level controllers shall be installed in overhead tanks. The level switch will close the valve when water level is high in overhead tank and open the valve when overhead water tank level is low. The system should be complete in all respects with accessories 220 V AC / 2 V DC, IP67 electrical water level control unit, copper control wiring in whether proof casing etc. of following size			
104	50 mm dia NB Float Valve	item104	2	Each
104.1	**ELECTRICAL WORK** **SUB-HEAD I: INTERNAL WIRING**			
104.2	**All wiring Item FRLS including provision of conduit, conduit accessories, circuit wiring, switch, box and all fitting completed as required.**			
104.3	Wiring for light point / fan point /exhaust fan point/ call bell point with 1.5 sq.mm FRLS 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 FRLS PVC insulated copper conductor single core cable etc. as required.			
105	a) Group A	item105	66	Point

Sl. No.	Item Description	Item Code / Make	Quantity	Units
105.1	Wiring for circuit/submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor single core cable in surface/recessed PVC Conduit as required.			
106	2x1.5 sq.mm + 1x1.5 sq.mm earth wire	item106	360.00	Meter
107	2x2.5 sq.mm + 1 x 2.5 sq.mm earth wire	item107	180.00	Meter
107.1	Supplying and fixing modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.			
108	5/6 amps switch	item108	36	Each
109	3 pin 5/6 amps socket outlet	item109	36	Each
109.1	Supplying and fixing of following size/modules, GI box along with modular base & cover plate for modular switches in recess etc. as required.			
110	3 Module (100mmx75mm)	item110	56	Each
111	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 15/16 and 5/6 amps modular socket outlet with shutter and 15/16 amps modular switch connection, etc. as required.	item111	32	Each
111.1	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.			
112	25 mm dia.	item112	180.00	Meter
113	32 mm dia.	item113	90.00	Meter
113.1	**SUB-HEAD II:- DISTRIBUTION BOARDS**			
113.2	Supplying and fixing following way, single pole and neutral, prewired, sheet steel, MCB distribution board, 240 volts, on surface /recess, complete with loose wire box, terminal blocks, duly prewired with suitable size FRLS PVC insulated copper conductor upto terminal blocks, tinned copper bus bar, neutral link, earth bus, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)			
114	8 Way, Double door	item114	6	Each
114.1	Supply 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			
115	a) Single pole	item115	36	Each
115.1	Supplying and fixing following rating, double pole, (single phase and neutral), 230 volts, residual current circuit breaker (RCCB), having a sensitivity 30 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.			
116	a) 40 amps	item116	6	Each
116.1	**SUB-HEAD III:- LIGHTING FIXTURE AND FANS**			

Sl. No.	Item Description	Item Code / Make	Quantity	Units
116.2	Supplying, Installation, Testing & commissioning of following type LED recessed/surface mounted light fixture made of Aluminium die cast, proper heat sink, minimum 90Lm/W complete in all aspects as mentioned in this tender. With 5 Years Warranty on LED and Driver			
117	a) 11W LED Down lighter	item117	48	Each
118	Supplying of 305 mm 1400 RPM exhaust fan complete with louver and bird guard screen with 3 core flexible wire as required.	item118	18	Each
119	Installation of exhaust fan up to 450 mm sweep in the existing opening, including making the hole to suit the size of the above fan, making good the damage, connection testing and commissioning etc as required	item119	18	Each
120	Extra for fixing the louvers/ shutters complete with frame for a exhaust fan of all sizes.	item120	18	Each
120.1	**SUB-HEAD IV:- REMOVAL AND INSTALLATION OF MCC PANELS FOR AHU'S**			
121	Dismantling and Removal of Existing MCC Panel1. Safe shutdown of connected loads and isolation of power supply. 2. Dismantling and removal of the existing MCC panel, including disconnection of all power and control cables, removal of associated conduits and accessories, disconnection of earthing connections & shifting of dismantled material to the designated scrap/storage area as instructed.	item121	20	Each
121.1	Supply, Installation, Testing & Commissioning of New MCC Panels: 1. Supply of new MCC panels as per approved specifications, complete with switchgear, meters, relays, internal wiring, busbars, and powder-coated CRCA enclosures. 2. Installation of MCC panels, including alignment, fixing, and grouting. 3. Supply and laying of concealed PVC conduits with required bends, accessories, chasing, embedding, and restoration of walls/ceilings. 4. Supply, laying, dressing, and termination of power and control cables using approved lugs, thimbles, ferrules, heat-shrink sleeves, and proper glanding. 5. Supply and laying of earthing wires, termination with proper fasteners, and earth resistance testing. 6. Testing of all switchgear, meters, relays, interlocks, protection devices, insulation resistance, continuity, and phase sequence. 7. Complete operational commissioning of the MCC panels.			
122	2 sets X 2.2KW and 2 sets X 1.5KW 3 Ph. 415VAC motors	item122	1	Each
123	2 sets X 1.5KW 3 Ph. 415VAC motors	item123	2	Each
124	4 sets X 1.5KW 3 Ph. 415VAC motors	item124	3	Each

ANNEXURE-D

PRE-BID INSPECTION REPORT

To,
Centre for Development of Advanced
Computing Anusandhan Bhawan,
C-56/1, Institutional Area, Sector-62,
Noida-201309(U.P.)

SUBJECT: PRE-BID INSPECTION REPORT FOR - .:"Renovation of Toilets in Anusandhan Bhawan at Plot No. C-56/1, Sector-62, C-DAC, Noida - 201309 (U.P.)"

I/ we/ are willing to participate in the subject and accordingly on Date), we have visited C-DAC and the inspected for the work of "Renovation of Toilets in Anusandhan Bhawan at Plot No. C-56/1, Sector-62, C-DAC, Noida - 201309 (U.P.)"as mentioned in the above Tender Reference. Further, we have done pre-bid inspection of all sites and completely satisfied ourselves before bidding.

Name of the representative participated in Inspection meeting:

Designation:

Company/Firm Name:

Mobile Number :

E-mail id:

Signature:

Certified by C-DAC official

The above person has visited and inspected the above site on dated and completed the per-Bid inspection.

Name of the Official:

Sign & Stamp Dated:

Signature of Authorized Signatory of Bidder with stamp Name of the person –

ANNEXURE–E

BID SECURING DECLARATION

To

, Centre for Development of
Advanced Computing Anusandhan
Bhawan,
C-56/1, Institutional Area, Sector-
62, Noida-201309(U.P.)

SUBJECT: BID SECURING DECLARATION FOR-: "Renovation of Toilets in Anusandhan Bhawan at Plot No. C-56/1, Sector-62, C-DAC, Noida - 201309 (U.P.)"

I/We declare that I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We a)have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity (i) fail or reuse to execute the contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed (insert signature of person whose name and capacity are shown) in the capacity of (insert legal capacity of person signing the Bid Securing Declaration)

Name (insert complete name of person signing the Bid Securing Declaration) duly authorized to sign the bid for an on behalf of (insert complete name of Bidder)

Dated on day of (insert date of signing)

Corporate Seal (where appropriate)

(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid.

ANNEXURE–F

NON – BLACKLISTING / DEBARRING LETTER

(To be given in Company Letter Head)

To,

Centre for Development of Advanced Computing,
Anusandhan Bhawan, C-56/1, Institutional Area,
Sector-62, Noida-201309(U.P.)

SUBJECT: NON- BLACKLISTING / DEBARRING LETTER FOR "Renovation of Toilets in Anusandhan Bhawan at Plot No. C-56/1, Sector-62, C-DAC, Noida - 201309 (U.P.)"

I/we hereby certify that the above firm namely_____ is neither blacklisted/ debarred by any Central/State Government/Public Undertaking/Institute nor any criminal case registered / pending against the firm or its owner / partners anywhere in India (or) against any of its branches (or) partners abroad. I also certify that the above information is true and correct in any every respect and in any case at a later date it is found that any details provided above are incorrect, any contract given to the above firm may be summarily terminated and the firm blacklisted.

Yours faith fully,

Authorized Signatory

(Signature of the Bidder, with official Seal) Email Id

for correspondence:

ANNEXURE–G

(ON COMPANIES LETTERHEAD)

Consent to contract value variation

To,

GC -MMG
Centre for Development of Advanced Computing,
Anusandhan Bhawan, C-56/1, Institutional Area,
Sector-62, Noida-201309(U.P.)

Subject: - Tender for - **"Renovation of Toilets in Anusandhan Bhawan at Plot No. C-56/1, Sector-62, C-DAC, Noida - 201309 (U.P.)"**

We have been technically qualified against the subject CPPP bidding "Renovation of Toilets in Anusandhan Bhawan at Plot No. C-56/1, Sector- 62, C-DAC, Noida - 201309 (U.P.)"
We hereby confirm and undertake that we will provide our item rates quotes and amounts of all the items as per the BOQ (Bill of Quantity) format given in the subject tender document uploaded in the CPPP portal, in case if we are emerging as "successful bidder"

Further, we have understood the scope of work completely in all respects and aware that the quantities of various items incorporated in the tender are approximate. However, the payments shall be made to us based on actual joint measurements taken at site along with C-DAC Authorized Representatives as per tender terms and conditions.

Considering above, we hereby agree for contract value variations up to +/- 25% based on the actual site conditions, measurements, and requirement. The final bill amount may decrease or increase and will be settled, accordingly.

Bidder

Signature and Seal

ANNEXURE-H

(To be executed on plain paper and applicable for all tenders of value above Rs.1 Crore)

INTEGRITY PACT

This Integrity Pact ("the Pact") is made and executed on this __Day of T w o Thousand Twenty _____at ____.

By and Between

Centre for Development of Advanced Computing (C-DAC), an autonomous scientific Society under the Ministry of Electronics and Information Technology, Government of India, registered under the Societies Registration Act 1860 and the Bombay Public Trusts Act 1950, having its registered Office at Savitribai Phule Pune University Campus, Pune 411 007, hereinafter referred to as "C-DAC/Principal", which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include its administrators, successors or assignees, as the case may be.

and

…….hereinafter referred to as "The Bidder(s)/Contractor(s)", which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include its administrators, successors or assignees, as the case may be.

(The Principal and the Bidder (s)/Contractor(s) are collectively referred to as "the Parties". 7

Preamble

The Principal intends to award, under laid down organizational procedures, contract/s for ("the Contract"). The Principal values full compliance with all relevant laws and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder/s and Contractor/s. The Principal intends to avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into. The Principal also intends that Bidder/s and Contractor/s should abstain from bribing or indulging in any corrupt practices in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the Bidder/s and Contractor/s shall commit to prevent corruption, in any form, by its officials by following transparent procedures.
In order to achieve these goals, the Principal, by way of this Integrity Pact ("the Pact") will appoint Independent External Monitor ("IEM") who will monitor the tender process and the execution of the Contract for compliance with the principles mentioned above.

The parties hereto hereby agree to enter into this Pact and agree as mentioned below.

Section-1

Commitments of the Principal

The Principal commits itself to take all measures necessary to prevent corruption and to observe the following: -

A) No employee of the Principal, personally or through relatives or any other person, will in connection with the tender, or for the execution of the Contract, demand, promise or accept for himself/herself or any third person, any material or immaterial benefit or any other advantage from the bidder/s or contractor/s which he/she is not legally entitled to.

B) The Principal will, during the tender process treat all Bidder/s and Contractor/s with equity and reason. The Principal will in particular, before and during the tender process, provide to all bidder/s and contractor/s the same information and will not provide to any bidder/s or contractor/s additional/confidential information through which the bidder/s and contractor/s could obtain an advantage in relation to the tender process or the contract execution.

C) The Principal will exclude from the process all known prejudiced persons.
If the Principal obtains information on the conduct of any of its employees, which is a criminal offence under the relevant Anti-Corruption Laws of India, or if there be a substantive suspicion and the same is prima facie found to be correct in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions in such a case while such enquiry is being conducted by the Principal, the proceedings under the contract shall not be stalled.

Section-2

Commitments of the Bidder/ contractor

a) The Bidder / Contractor commits to take all measures necessary to prevent corrupt practices, unfair means and illegal activities. He commits himself to observe the following during his participation in the tender process and during the contract execution:

1) The Bidder / Contractor undertakes that he/she has not given, offered or promised to give directly or indirectly any bribe, gift, consideration, reward, favour any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Principal, for which benefit etc. he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

2) The Bidder / Contractor will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Principal, for which benefit etc. he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

3) The Bidder / Contractor will not enter into any agreement or understanding with other Bidders in connection with the bid, including but not limited to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

4) The Bidder / Contractor will not commit any offence under the relevant provisions of Anti-Corruption Laws of India/Indian Penal Code, 1860, Information and Technology Act, 2000, Competition law or any other relevant laws, enactments, rules and regulations. Further the Bidder / Contractor will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically. The Bidder / Contractor also undertakes to exercise due and adequate care of any such information so divulged.

5) The Bidder / Contractor further confirms and declares to the Principal that the Bidder / Contractor is the original manufacturer / integrator / authorized government sponsored export entity and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the Principal or any of its functionaries, whether officially or unofficially to the award of the contract to the Bidder / Contractor, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

6) The Bidder / Contractor will, when presenting his bid, disclose any and all payments he has made, is committed to make or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and the details of the services agreed upon for such payments.

7) The bidder(s)/ contractor (s) of foreign origin shall disclose the name and address of agents and representatives in India related to this tender. Similarly, the bidder(s)/ contractor(s) of Indian nationality shall furnish the name and address of their foreign principals or associates, if any, related to this tender.

8) The Bidder / Contractor shall not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

9) If the Bidder / Contractor or any employee of the Bidder / Contractor or any person acting on behalf of the Bidder / Contractor, either directly or indirectly, is a relative of any of the officers of the Principal, or alternatively, if any relative of an officer of the Principal has financial interest / stake in the Bidder's / Contractor's firm, proprietorship, company, etc. the same shall be disclosed by the Bidder / Contractor at the time of filing of tender/ EoI. The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act, 2013.

10) The Bidder / Contractor shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the Principal.

11) The bidder / contractor shall disclose the circumstances, arrangements, undertakings or relationships that constitute, or may reasonably be considered to constitute, an actual or potential conflict of interest with its obligations specified in the tender process or under any Agreement which may be negotiated or executed with Principal. Bidder / Contractor and its employees, agents, advisors and any other person associated with the bidder / contractor must not place themselves in a position which may, or does, give rise to conflict of interest (or a potential conflict of interest between the interests of Principal or any other interests during this tender process or through operation of the Agreement.

12) The bidder(s)/ contractor (s) who have signed the Pact shall not approach the Courts while the matters/disputes/issues, related to tender process or the Contract are presented before the

IEM and awaiting the final decision.

a) The Bidder / Contractor will not instigate third persons to commit above mentioned acts / omissions / offences outlined above or be an accessory to such offences.

Section-3
Disqualification from tender process and exclusion from future contracts

1. If the Bidder, before the Contract is awarded, has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or credibility as Bidder into question:

a) the Principal is entitled to disqualify the Bidder from the tender process or to terminate the Contract, if already signed, for such reason.

b) the Principal is entitled to exclude the Bidder / Contractor from participating in future contracts/tenders. The imposition and duration of the exclusion will be determined by the Principal based on the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder / Contractor and the amount of the damage. The exclusion will be imposed for a minimum of six (6) months and maximum of three (3) years.

2. An act/omission would be treated as a transgression after due consideration of the available evidence by the Principal.

3. The Bidder / Contractor accepts and undertakes to respect and uphold the Principal's absolute right to resort to and impose such disqualification/exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision of disqualification/exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.

4. If the Bidder / Contractor can prove that he has restored the damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the aforesaid disqualification/exclusion prematurely.

Section 4

Compensation for Damages

1. Without prejudice to any rights that may be available to the Principal under any law or the contract or its laid down policies and procedures, the Principal shall have the following rights in case of breach of this Pact by the Bidder/Contractor:

To forfeit the Earnest Money/Bid Security if the Bidder is disqualified from the tender process prior to the award in terms of Section 3;

a. To forfeit/invoke the Security Deposit/ Performance Bank Guarantee if the Principal has either terminated or is entitled to terminate the Contract of the Bidder in terms of Section 3.

b. To immediately call of the pre contract negotiations without assigning any reason or giving any compensation to the Bidder / Contractor.

c. To immediately cancel the contract, if already signed, without giving any compensation to the bidder / contractor. The Bidder / Contractor shall be liable to pay the compensation for any

loss or damage to the Principal resulting from such cancellation / rescission and the Principal shall be entitled to deduct the amount so payable from the amount due to the Bidder / Contractor.

d. To recover all sums already paid by the Principal, with interest at 12 % @ p.a. if any outstanding payment is due to the Bidder / Contractor from the Principal in connection with any other contract, such outstanding payment could also be set off to recover the aforesaid sum and interest.

e. To recover all sums paid in violation of this Pact by the Bidder / Contractor to any middleman or agent or broker with a view to securing the contract.

Section 5

Previous Transgression

a. The Bidder declares that he has not committed any transgressions in the last three (3) years against any Company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could invite/justify his exclusion from this tender process.

b. Any concealment of information or misrepresentation of facts, in regard to the aforesaid, can lead to his disqualification from the tender process or termination of the Contract, if already awarded, or invite any other appropriate action(s) as deemed fit.

Section 6

Equal treatment of all Bidders / Contractors / Subcontractors

a.The Principal will enter into Pacts on identical terms with all bidders and contractors.

b. The Bidder(s) / Contractor(s) assures to procure from all their subcontractors an undertaking for the adoption of this Pact. The Bidder (s) / Contractor(s) shall alone be responsible for any violation (s) of the provisions laid down in the Pact by any/all of their sub-contractor (s) or sub-vendor (s).

c. The Principal will be entitled to disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7

Independent External Monitor / Monitors

1. The Principal appoints competent and credible Independent External Monitor as nominated and approved by the Central Vigilance Commission. The task of the IEM is to review independently and objectively, whether and to what extent the Parties comply with the obligations under this Pact. The IEM would be required to sign 'Non-Disclosure Agreements' along with a declaration of 'Absence of Conflict of Interest'. In case of any conflict of interest arises at a later date, the IEM shall inform Chairperson of the Board of the Principal and recuse himself/herself from that case.

1. The IEM is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairperson of the Board of the Principal. The IEM would be provided access to all documents/records pertaining to the contract for which a complaint or issue is raised before them, as and when warranted. However, the documents/records/ information having National Security implications and those documents which have been classified as Secret/Top Secret are not to be disclosed.

2. The Bidder / Contractor accepts that the IEM has the right to access, without restriction, all

Project documentation available with the Principal including the documents/ records/ information provided by the Bidder/Contractor. The Bidder/Contractor will also grant the IEM, upon their request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The IEM is under contractual obligation to treat the documents/ records/ information of the Bidder/Contractor/ Subcontractor with confidentiality.

3. The Principal will provide to the IEM sufficient information about all meetings among the parties related to the Project provided that such meetings could have an impact on the contractual relations between the Principal and the Bidder/Contractor. The Parties will offer to the IEM the option to participate in such meetings.

4. As soon as the IEM notices, or suspects, a violation of this Pact, he will inform the Management of the Principal and request the Management to discontinue or rectify the violation, or take any other relevant action. The IEM can in this regard submit nonbinding recommendations. Beyond this, the IEM has no right to demand from the Parties that they act in a specific manner, refrain from action or tolerate action. However, the IEM shall give an opportunity to the Bidder / Contractor to present his case before making its recommendations to the Principal.

5. The IEM is expected to tender their recommendation on all the complaints within 30 days of their receipt, to the Chairperson of the Board of the Principal. Further, should the occasion arise, the IEM may submit proposals for correcting problematic situations.

6. If the IEM has reported to the Chairperson of the Board of the Principal a substantiated suspicion of an offence under relevant Anti-Corruption Laws of India/Indian Penal Code, 1860, or any other relevant laws and the Chairperson has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the IEM may transmit this information directly to the Central Vigilance Commissioner, Government of India.

7. The word 'IEM' would include both singular and plural.

Section 8

Pact Duration

1. This Pact comes into force when both parties have signed it. It expires for the Bidder / Contractor 12 months after the last payment under the respective contract, and for all other Bidders / Contractors 6 months after the contract has been awarded.

2. If any claim is made / lodged during the aforesaid duration, the same shall continue to be valid despite the lapse of this pact as specified above, till it is discharged / determined by Chairperson of the Board of the Principal.

Section 9

Other Provisions

1. This Pact is subject to Indian Laws. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. Pune. The Arbitration clause provided in the main tender document / contract shall be applicable to any issue / dispute arising under this Pact.

1. If the Contractor is a partnership or a consortium, this Pact must be signed by all partners or consortium members.

2. In case of any allegation of violation of any provisions of this Pact or payment of commission etc. the Principal or its agencies shall be entitled to examine all the documents including the Books of Accounts of the Bidder / Contractor and Bidder / Contractor shall provide

necessary information and documents and shall extend all possible help for the purpose of such examination.

3. If one or several provisions of this Pact are held to be invalid/ unenforceable, the remainder of this Pact shall remain valid as though the invalid or unenforceable parts had not been included herein. In this case, the parties will strive to come to an agreement to their original intentions.

4. Issues like warranty/ guarantee etc. shall be outside the purview of IEM.

For the Principal	for the Bidder / Contractor
Place ----------	Witness 1: ----------
Date ----------	**Witness 2: ----------**

ANNEXURE-I

DECLARATION-LAND BORDER SHARING

To,
Centre for Development of Advanced
Computing Anusandhan Bhawan
C-56/1Institutional Area, Sector-62,
Noida- 201309 (U.P)

Subject: - Tender for - **"Renovation of Toilets in Anusandhan Bhawan at Plot No. C-56/1, Sector-62, C-DAC, Noida - 201309 (U.P.)"**
Bid. No. …….

In-line with Department of Expenditure's (DoE) Public Procurement Division Order vide ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020;
"I/ we have read the clauses pertaining to Department of Expenditure's (DoE) Public Procurement Division Order (Public procurement no 1, 2 & 3 vide ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020) regarding restrictions on procurement from a bidder of a country which shares a land border with India. I/We hereby certify that I/ we the bidder < name of the bidder……> is / are

a) Not from such a country and eligible to be considered for this tender.

OR

b) From such country, has been registered with the competent authority and eligible to be considered for this tender. (Evidence of valid registration by the competent authority shall be attached)

Yours faithfully,

Authorized Signatory
(Signature of the Bidder, with official Seal) Email Id for correspondence

ANNEXURE-J

LOCAL CONTENT DECLARATION

To,
Centre for Development of Advanced Computing Anusandhan Bhawan
C-56/1Institutional Area, Sector-62,
Noida- 201309 (U.P)

Subject: - Tender for - **"Renovation of Toilets in Anusandhan Bhawan at Plot No. C-56/1, Sector-62, C-DAC, Noida - 201309 (U.P.)"**

Bid. No. …….

I S/o, D/o, W/o _----------, Resident of do hereby solemnly affirm and declare as under that:

I will agree to abide by the terms and conditions of subject tender terms & conditions issued by C-DAC.

The information furnished hereinafter is correct to best of my knowledge and belief and I undertake to produce relevant records on demand by C-DAC for the purpose of verifying the Local Content (LC).

The LC for all inputs which constitute the said Goods /Services/Works has been verified by me and I am responsible for the correctness of the claims made herewith against the subject tender participation.

In the event of the LC of the Goods/Services/Works mentioned herein is found to be incorrect and not meeting the prescribed LC norms, based on the verification by C- DAC (or) appropriate authority, I/my firm will be liable as under clause 9(f) of Public Procurement (Preference to Make in India) Order 2017.

I agree to maintain all information regarding my claim for LC in the Company's record for a period of 2 years and shall make this available for verification to any statutory authorities.

The details of LC claim:

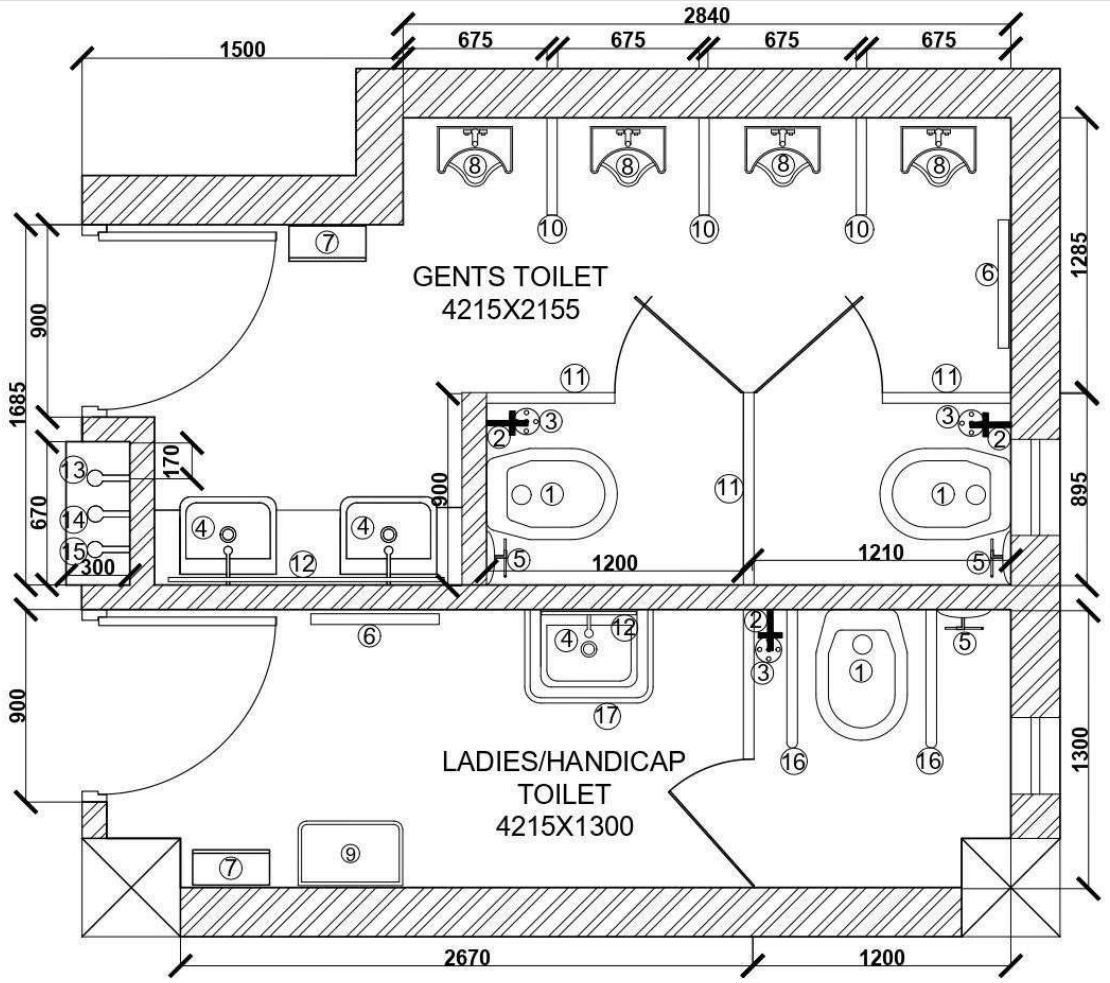
Goods /Services/Works for which the certificate is produced:

Percentage of LC claimed----------==== %

Type of Supplier (Class-I/Class-II):……

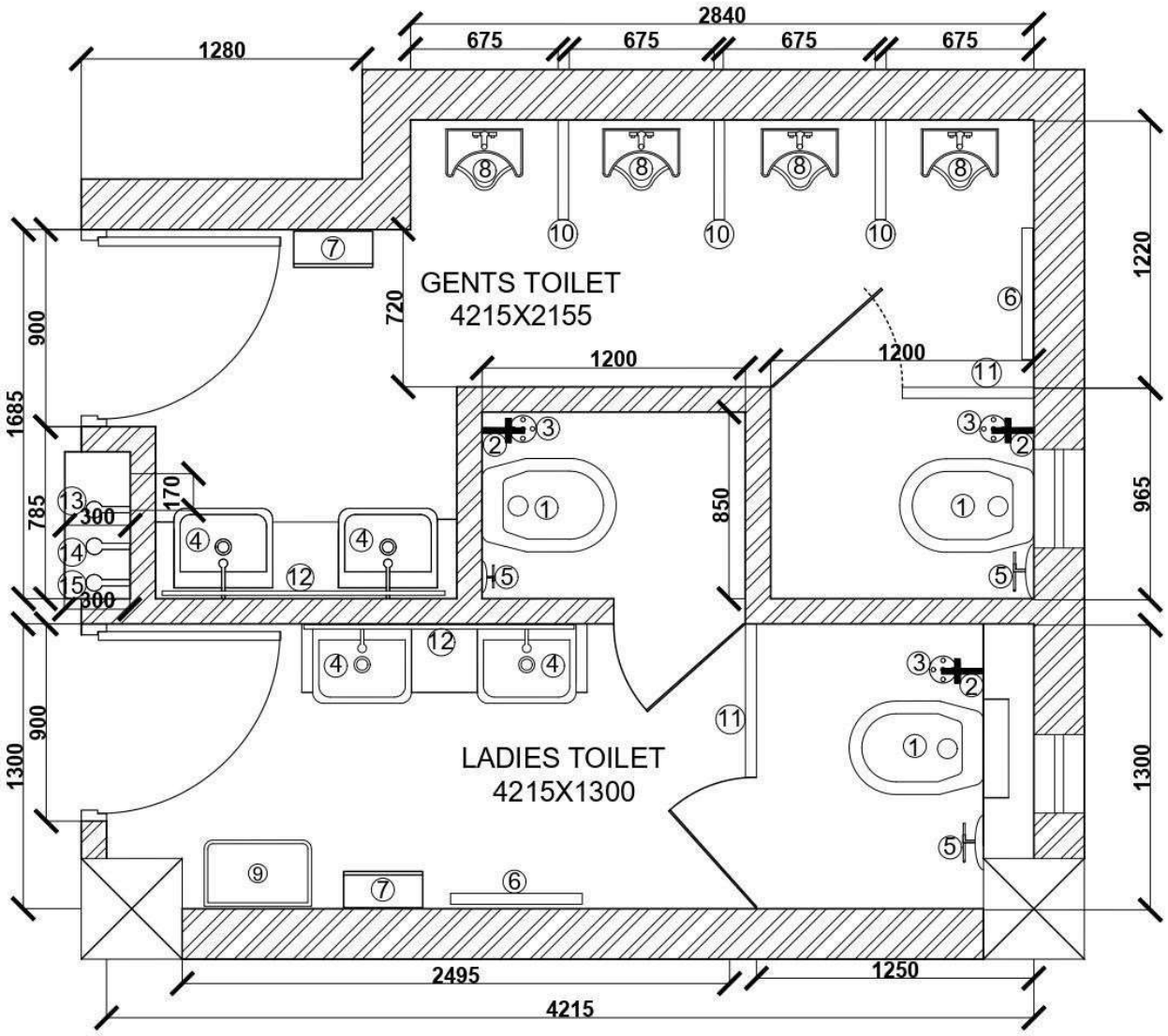
Yours faithfully,

Authorized Signatory
(Signature of the Bidder, with official Seal) Email Id for correspondence



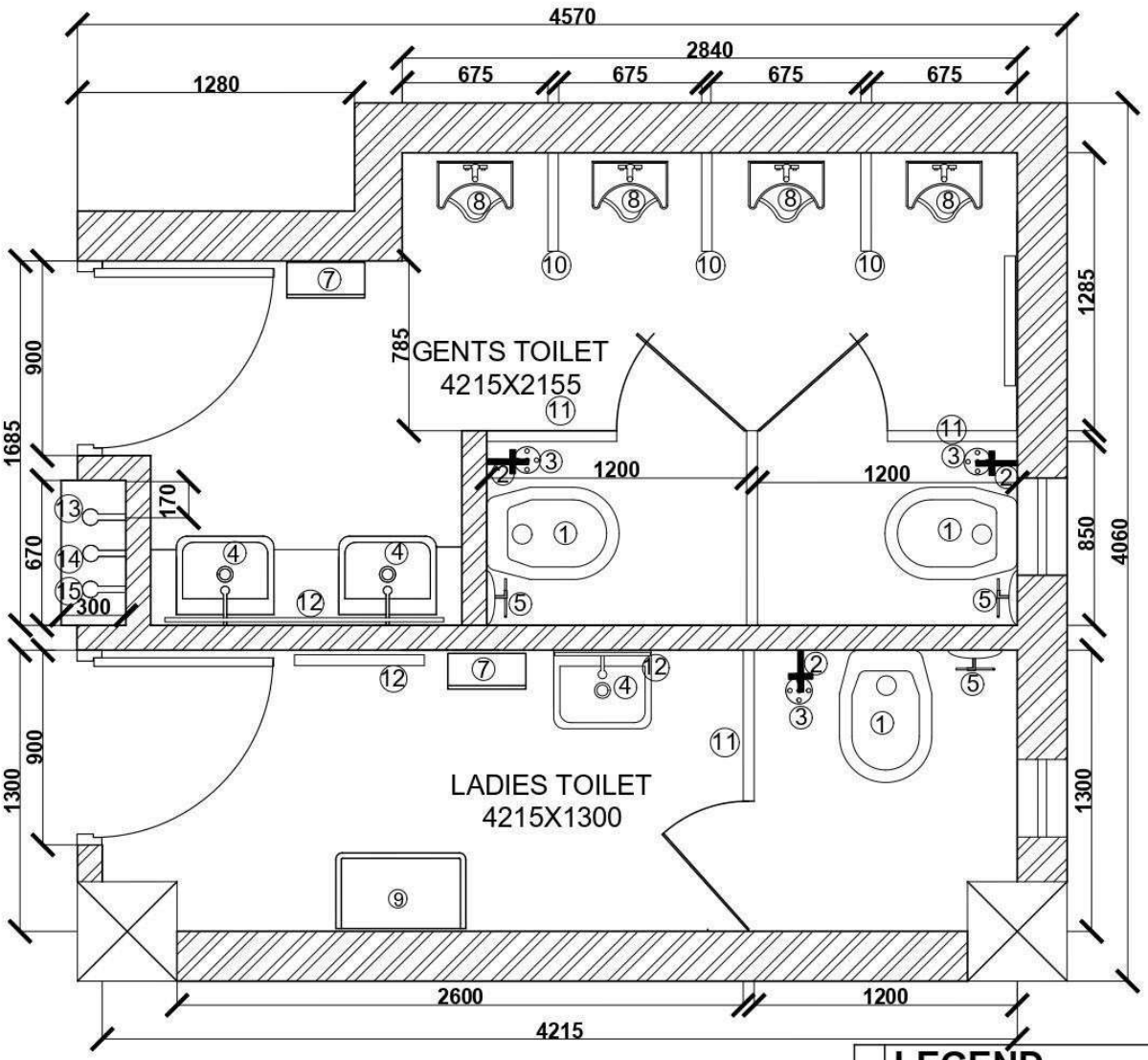
	LEGEND
1.	WALL HUNG W.C
2.	HEALTH FAUCET
3.	FLOOR TRAP
4.	WASHBASIN
5.	PAPER HOLDER
6.	FULL HEIGHT MIRROR
7.	PAPER HOLDER WITH HAND DRYER AND DUSTBIN
8.	URINAL
9.	BENCH
10.	URINAL PARTITION
11.	MODULAR PARTITION
12.	MIRROR WITH LED LIGHT
13.	COLD WATER TAP
14.	HOT WATER TAP
15.	NORMAL WATER TAP
16.	FOLDABLE GRAB BAR
17.	GRAB BAR

PROJECT NAME :	ARCHITECTS :	DRAWING TYPE :	DRAWING TYPE :	DEALT BY :	DATE :
CDAC SECTOR-62 NOIDA	Arhta 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684, 41627270 Email: arhta1@gmail.com	TOILET DETAIL PLAN	GROUND FLOOR TOILET LAYOUT	SIMRAN APPROVED BY : HARISH TRIPATHI DRAWING NO. :	SCALE : N.T.S REVISION : 0



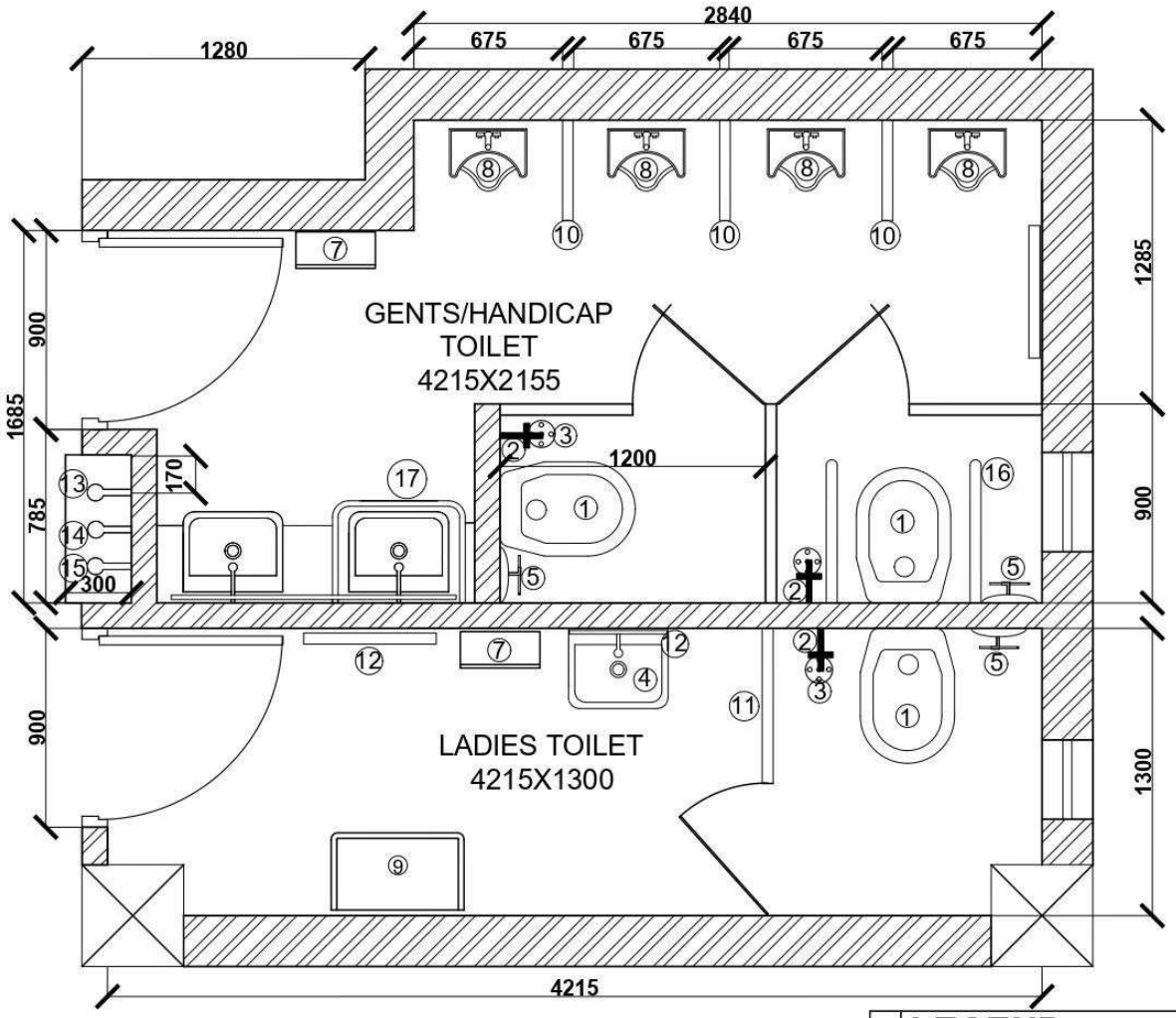
	LEGEND
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2.	HEALTH FAUCET
3.	FLOOR TRAP
4.	WASHBASIN
5.	PAPER HOLDER
6.	FULL HEIGHT MIRROR
7.	PAPER HOLDER WITH HAND DRYER AND DUSTBIN
8.	URINAL
9.	BENCH
10.	URINAL PARTITION
11.	MODULAR PARTITION
12.	MIRROR WITH LED LIGHT
13.	COLD WATER TAP
14.	HOT WATER TAP
15.	NORMAL WATER TAP

PROJECT NAME : CDAC SECTOR-62 NOIDA	ARCHITECTS : Arhta 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684, 41627270 Email: arhta1@gmail.com	DRAWING TYPE : TOILET DETAIL PLAN	DRAWING TYPE : FIRST/THIRD FLOOR	DEALT BY : SIMRAN	DATE : 06/04/2026
				APPROVED BY : HARISH TRIPATHI	SCALE : N.T.S
				DRAWING NO. :	REVISION : 0



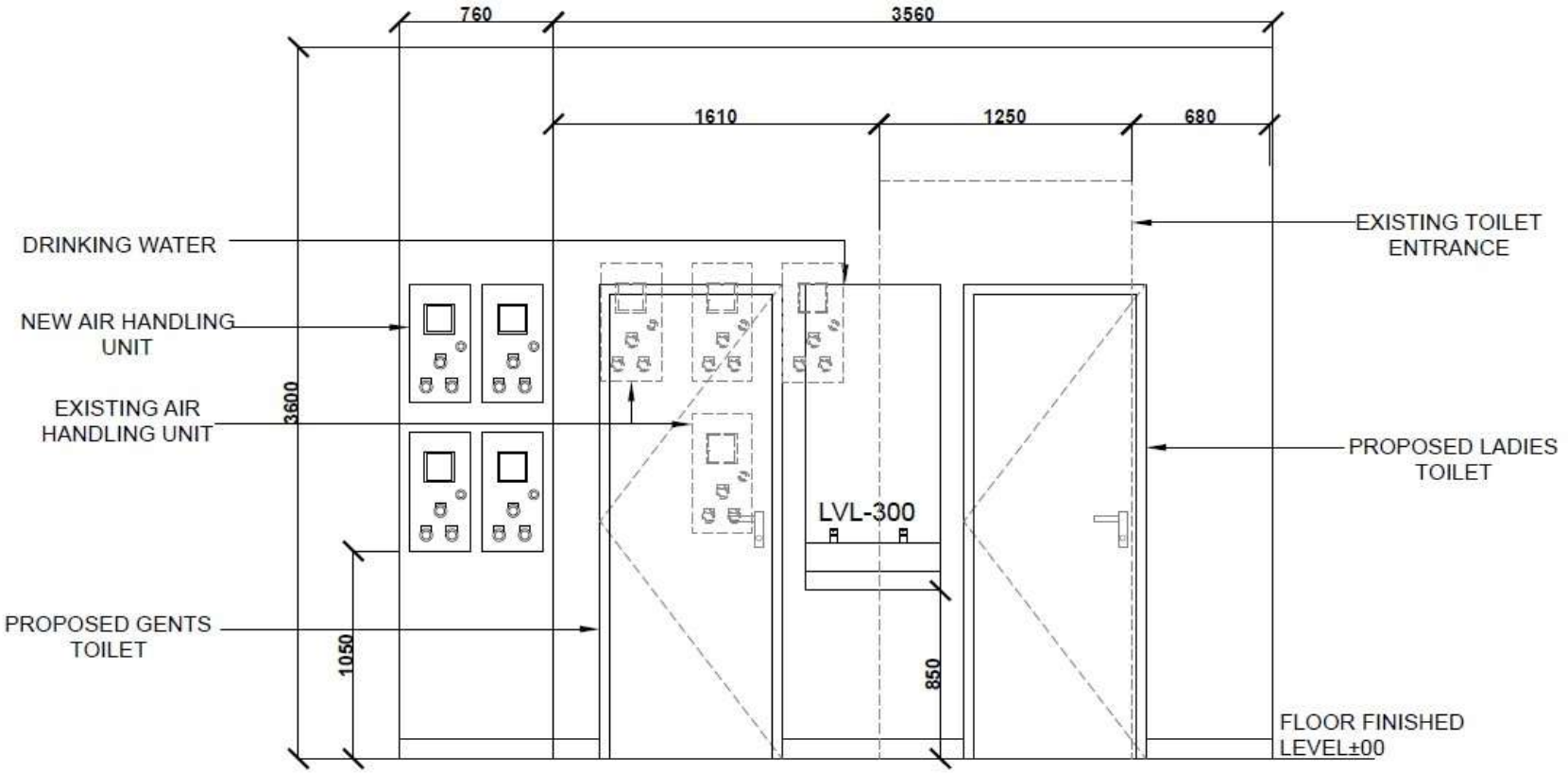
	LEGEND
1.	WALL HUNG W.C
2.	HEALTH FAUCET
3.	FLOOR TRAP
4.	WASHBASIN
5.	PAPER HOLDER
6.	FULL HEIGHT MIRROR
7.	PAPER HOLDER WITH HAND DRYER AND DUSTBIN
8.	URINAL
9.	BENCH
10.	URINAL PARTITION
11.	MODULAR PARTITION
12.	MIRROR WITH LED LIGHT
13.	COLD WATER TAP
14.	HOT WATER TAP
15	NORMAL WATER TAP

PROJECT NAME : CDAC , SECTOR-62, NOIDA	ARCHITECT: Arhta 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684, 41627270 Email: arhta1@gmail.com	DRAWING TYPE : TOILET DETAIL PLAN	DRAWING TYPE : SECOND/FOURTH FLOOR	DEALT BY : SIMRAN	DATE : 06/04/2026
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				DRAWING NO. : 1	REVISION : 0

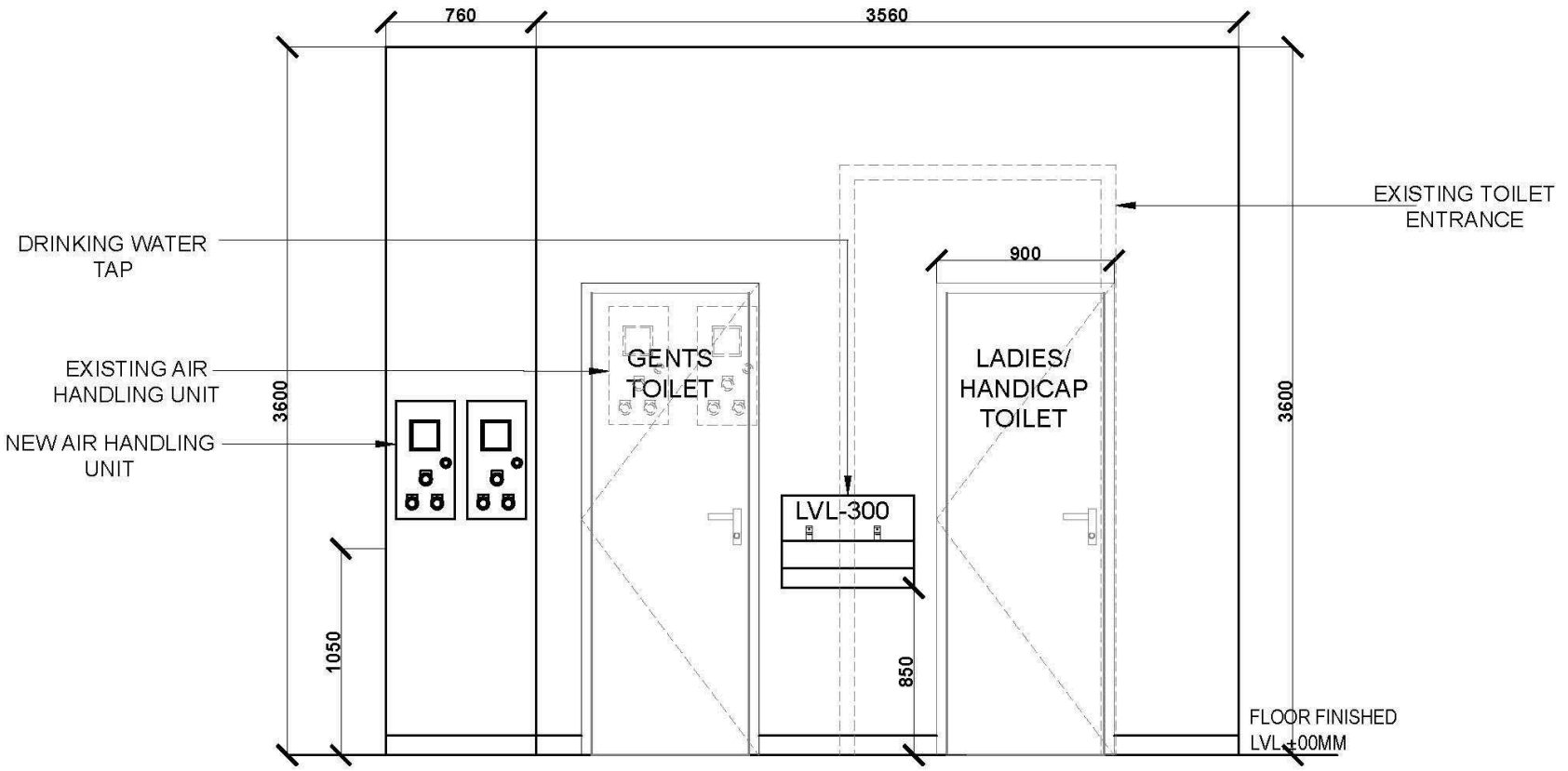


	LEGEND
1.	WALL HUNG W.C
2.	FLOOR TRAP
3.	WASHBASIN
4.	WASHBASIN
5.	PAPER HOLDER
6.	FULL HEIGHT MIRROR
7.	PAPER HOLDER WITH HAND DRYER AND DUSTBIN
8.	URINAL
9.	BENCH
10.	URINAL PARTITION
11.	MODULAR PARTITION
12.	MIRROR WITH LED LIGHT
13.	COLD WATER TAP
14.	HOT WATER TAP
15.	NORMAL WATER TAP
16.	FOLDABLE GRAB BAR
17.	GRAB BAR

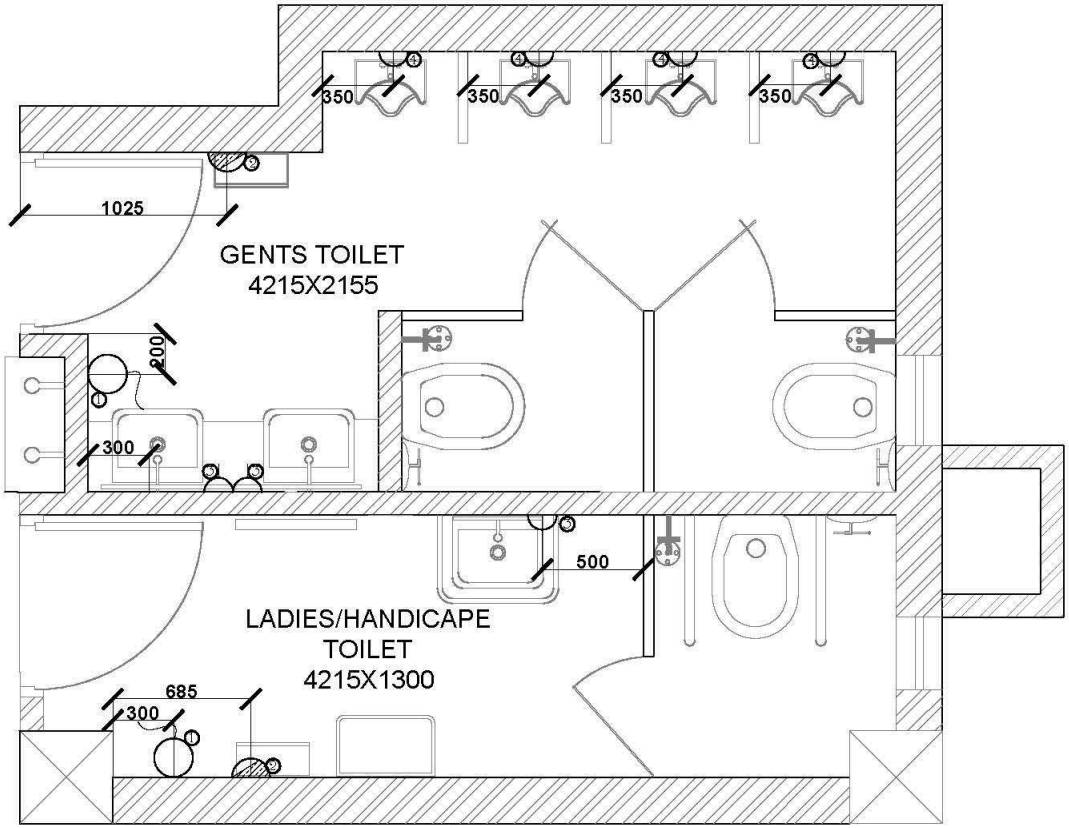
PROJECT NAME : CDAC , SECTOR-62, NOIDA	Arhta 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684, 41627270 Email: arhta1@gmail.com	DRAWING TYPE : TOILET DETAIL PLAN	DRAWING TYPE : FIFTH FLOOR	DEALT BY : SIMRAN	DATE : 06/04/2026
				APPROVED BY : HARISH TRIPATHI	SCALE : N.T.S
				DRAWING NO. : 1	REVISION : 0



PROJECT: CDAC SECTOR-62, NOIDA	ARCHITECTS Arhta Architect Harish Tripathi & Associates 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684,41627270 Email: arhta1@ gmail.com	DRAWING TYPE: WORKING DRAWING	DRAWING NAME: GROUND, SECOND THIRD, FOURTH FLOOR EXISTING & PROPOSED AHU	DEALT BY SIMRAN APPROVED. BY HARISH TRIPATHI DRAWING NO:	DATE: 05-02-2026 SCALE: N.T.S REVISION:



PROJECT: CDAC SECTOR-62, NOIDA	ARCHITECTS Arhta Architect Harish Tripathi & Associates 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684,41627270 Email: arhta1@ gmail.com	DRAWING TYPE: WORKING DRAWING	DRAWING NAME: FIRST/FIFTH FLOOR PROPOSED ELECTRICAL PANEL		DEALT BY SIMRAN	DATE: 05-02-2026
					APPROVED. BY HARISH TRIPATHI	SCALE: N.T.S
					DRAWING NO:	REVISION:



1		SWITCH BOARD AT3'-6"
2		15 AMP SOCKET FOR HAND D DRYER AT HT. OF 3'-6"
3		15 AMP SOCKET FOR SENSOR TAP AT HT. OF 1'-6"
4		ONE 5 AMP SOCKET FOR URINAL SENSOR AT HT. OF 7'-0"

PROJECT:

CDAC SECTOR-62,
NOIDA

ARCHITECTS

Arhta
Architect Harish Tripathi & Associates
224, Sukhdev Vihar
(Near Escorts Heart Institute)
New Delhi - 110025, India
Ph: 011-26842694,41627270
Email: arhta1@ gmail.com

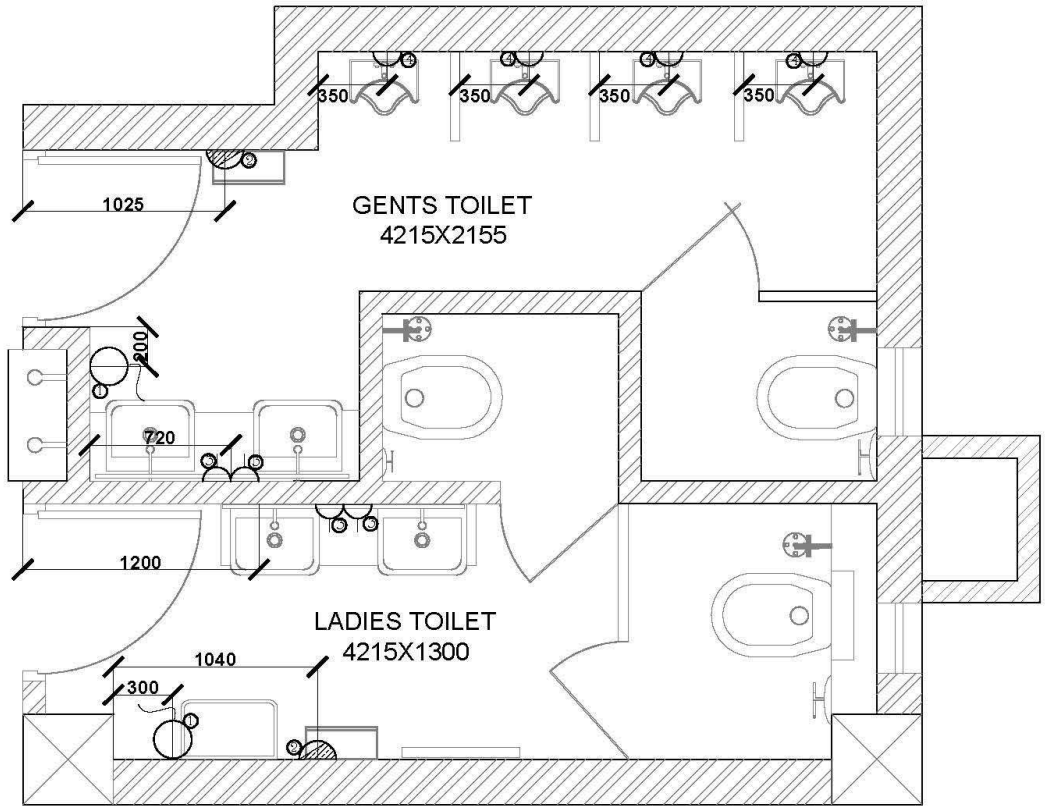
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WORKING
DRAWING

DRAWING NAME

GROUND FLOOR
LADIES/HANDICAP &
GENTS TOILET
ELECTRICAL PLAN

DEALT BY: SIMRAN	DATE: 05-02-2026
APPROVED. BY: HARISH TRIPATHI	SCALE: N.T.S
DRAWING NO:	REVISION:



1		SWITCH BOARD AT 3'-6"
2		15 AMP SOCKET FOR HAND D DRYER AT HT. OF 3'-6"
3		15 AMP SOCKET FOR SENSOR TAP AT HT. OF 1'-6"
4		ONE 5 AMP SOCKET FOR URINAL SENSOR AT HT. OF 7'-0"

PROJECT:

CDAC SECTOR-62,
NOIDA

ARCHITECTS

Arhta
Architect Harish Tripathi & Associates
224, Sukhdev Vihar
(Near Escorts Heart Institute)
New Delhi - 110025, India
Ph: 011-26842684,41627270
Email: arhta1@ gmail.com

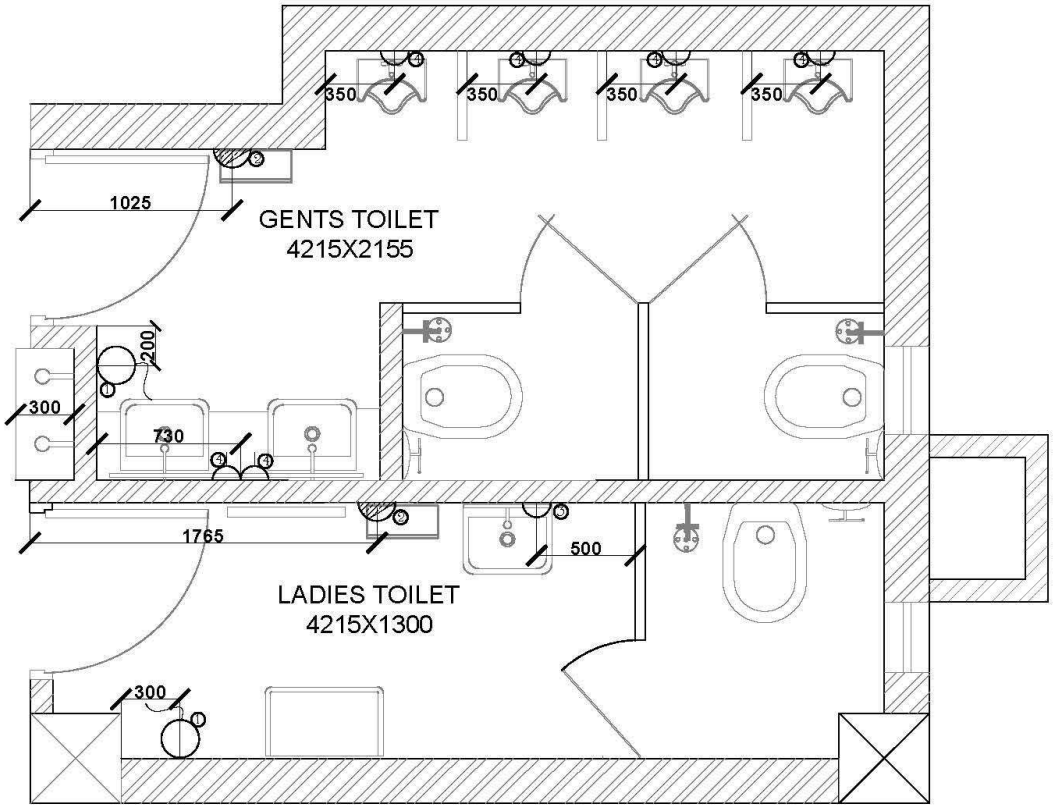
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WORKING
DRAWING

DRAWING NAME:

FIRST/THIRD FLOOR
ELECTRICAL PLAN

DEALT BY: SIMRAN	DATE: 05-02-2026
APPROVED. BY: HARISH TRIPATHI	SCALE: N.T.S
DRAWING NO:	REVISION:



1		SWITCH BOARD AT 3'-6"
2		15 AMP SOCKET FOR HAND D DRYER AT HT. OF 3'-6"
3		15 AMP SOCKET FOR SENSOR TAP AT HT. OF 1'-6"
4		ONE 5 AMP SOCKET FOR URINAL SENSOR AT HT. OF 7'-0"

PROJECT:

CDAC SECTOR-62,
NOIDA

ARCHITECTS

Arhta
Architect Harish Tripathi & Associates
224, Sukhdev Vihar
(Near Escorts Heart Institute)
New Delhi - 110025, India
Ph: 011-26842684,41627270
Email: arhta1@ gmail.com

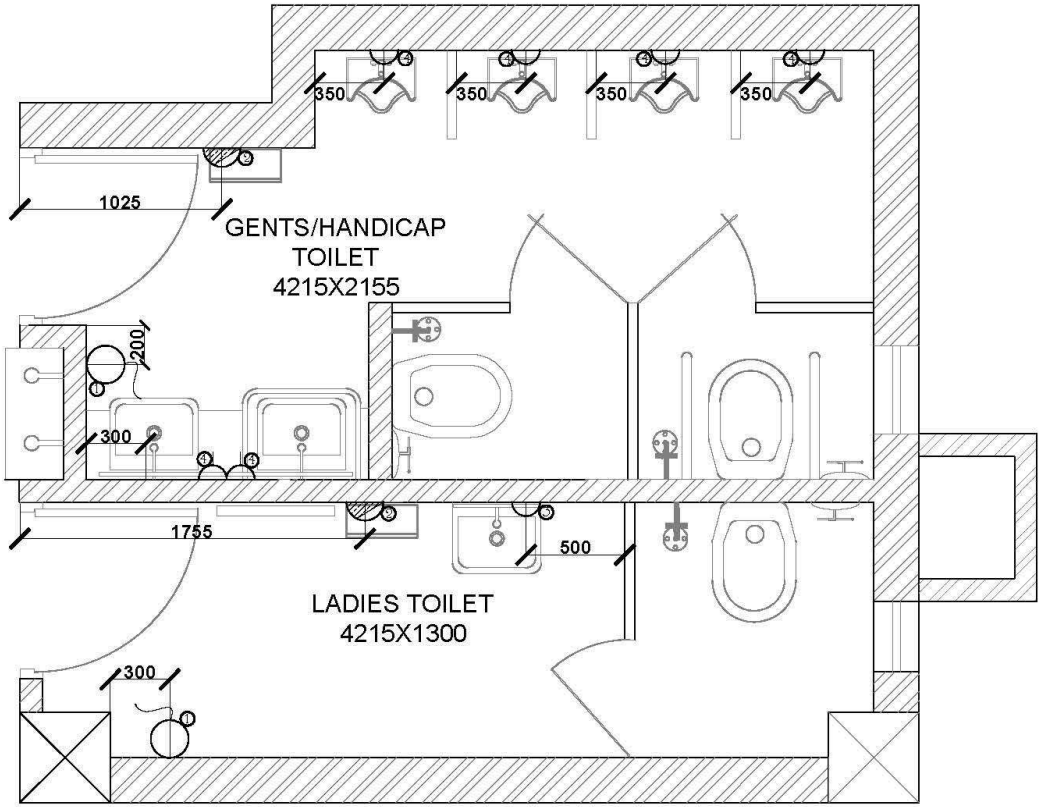
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WORKING
DRAWING

DRAWING NAME:

SECOND / FOURTH
FLOOR ELECTRICAL
PLAN

DEALT BY: SIMRAN	DATE: 05-02-2026
APPROVED. BY: HARISH TRIPATHI	SCALE: N.T.S
DRAWING NO:	REVISION:



1		SWITCH BOARD AT 3'-6"
2		15 AMP SOCKET FOR HAND D DRYER AT HT. OF 3'-0"
3		15 AMP SOCKET FOR SENSOR TAP AT HT. OF 1'-6"
4		ONE 5 AMP SOCKET FOR URINAL SENSOR AT HT. OF 7'-0"

PROJECT:

CDAC SECTOR-62,
NOIDA

ARCHITECTS

Arhta
Architect Harish Tripathi & Associates
224, Sukhdev Vihar
(Near Escorts Heart Institute)
New Delhi - 110025, India
Ph: 011-26842684,41627270
Email: arhta1@ gmail.com

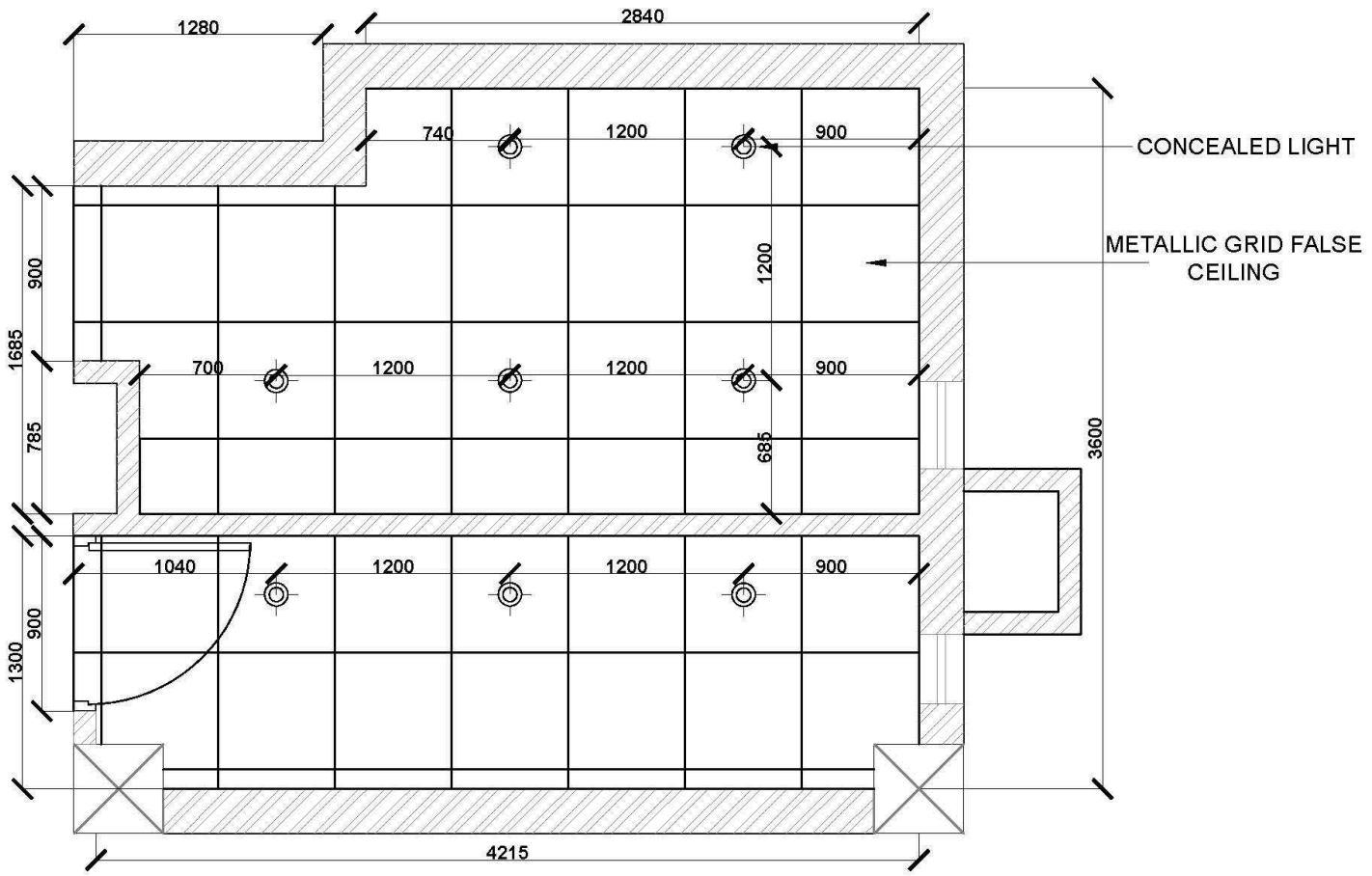
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WORKING
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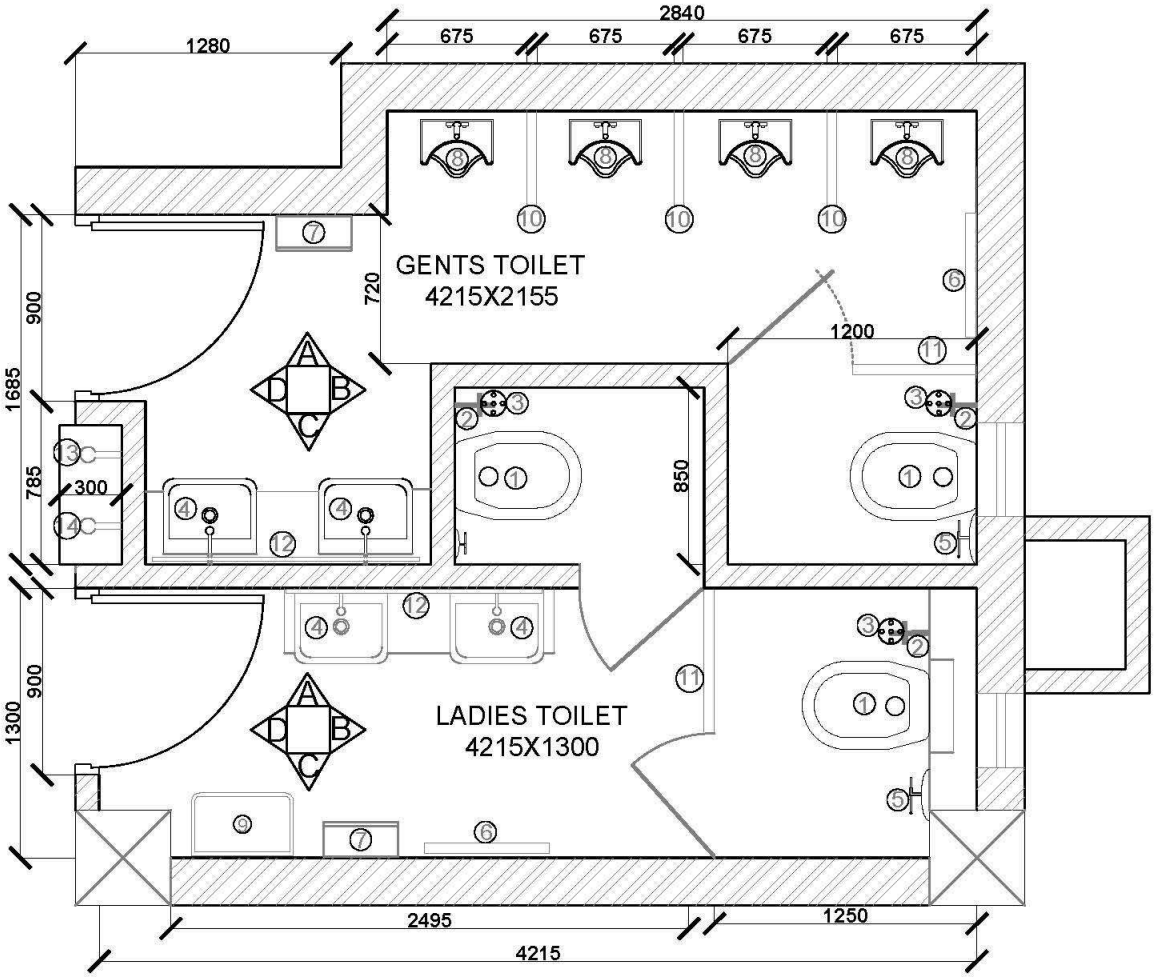
DRAWING NAME:

FIFTH FLOOR
ELECTRICAL
PLAN

DEALT BY: SIMRAN	DATE: 05-02-2026
APPROVED. BY: HARISH TRIPATHI	SCALE: N.T.S
DRAWING NO:	REVISION:

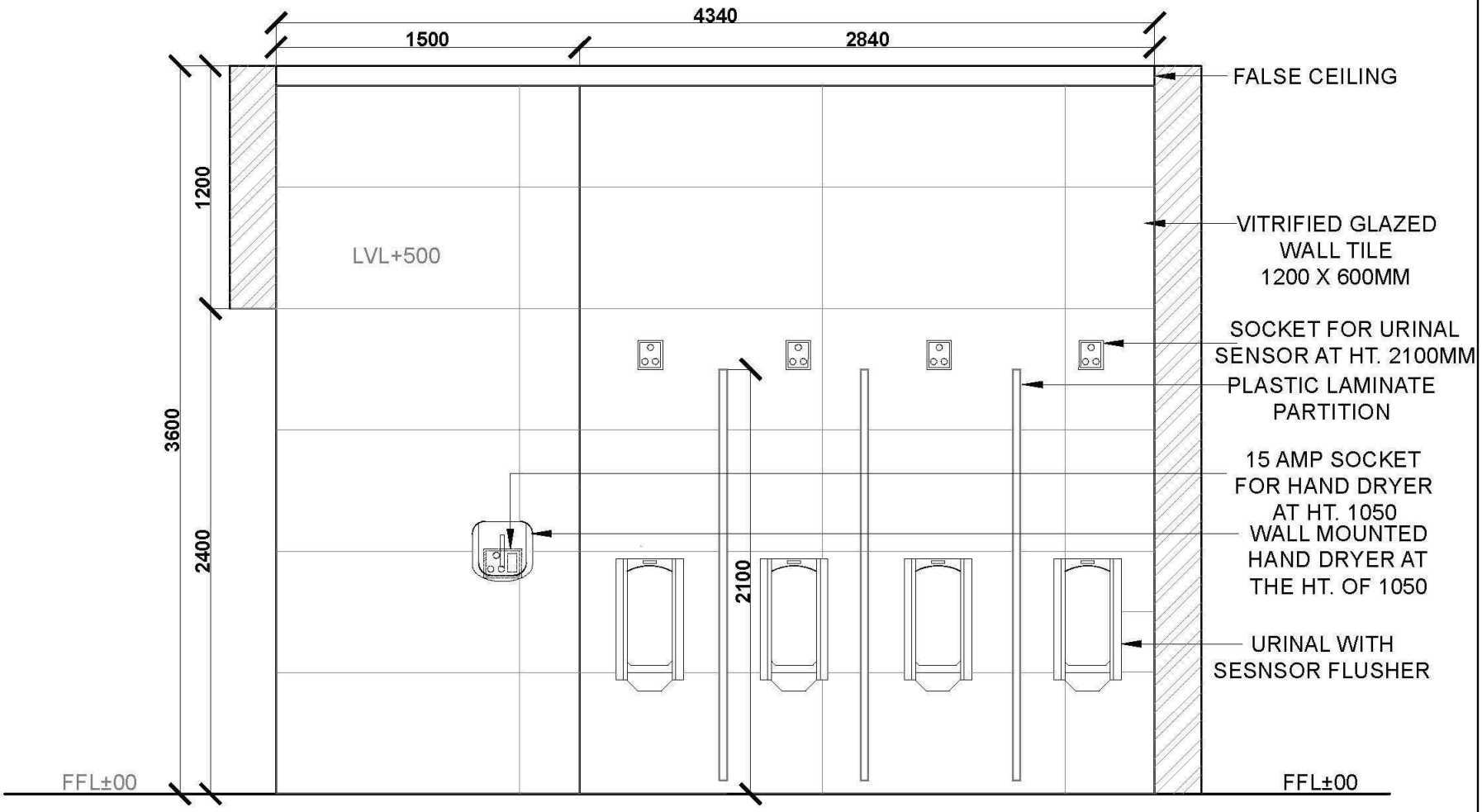


PROJECT: CDAC SECTOR 62 NOIDA	ARCHITECTS: Arhta Architect Harish Tripathi & Associates 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684,41627270 Email: arhta1@ gmail.com	DRAWING TYPE: WORKING DRAWING	DRAWING NAME: FALSE CEILING PLAN		DEALT BY SIMRAN	DATE: 05-02-2026
					APPROVED. BY DR. HARISH TRIPATHI	SCALE:
					DRAWING NO:	REVISION:



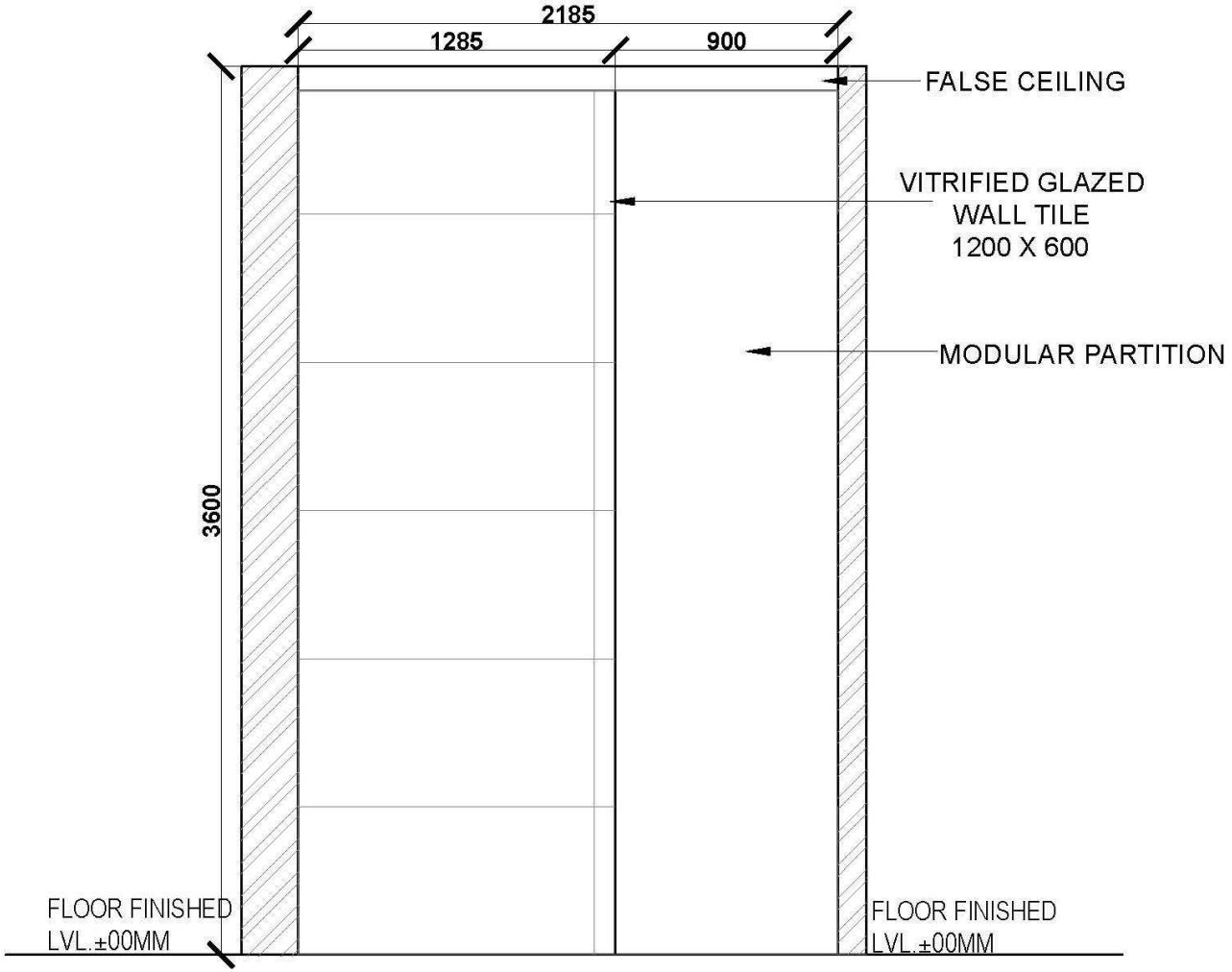
	LEGEND
1.	WALL HUNG W.C
2.	FLOOR TRAP
3.	WASHBASIN
4.	WASHBASIN
5.	PAPER HOLDER
6.	FULL HEIGHT MIRROR
7.	PAPER HOLDER WITH HAND DRYER AND DUSTBIN
8.	URINAL
9.	BENCH
10.	URINAL PARTITION
11.	MODULAR PARTITION
12.	MIRROR WITH LED LIGHT
13.	DRINKINGWATER TAP
14.	HANDWASH TAP

PROJECT NAME : CDAC SECTOR-62 NOIDA	ARCHITECTS : Arhta 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684, 41627270 Email: arhta1@gmail.com	DRAWING TYPE : TOILET DETAIL PLAN	DRAWING TYPE : FIRST/THIRD FLOOR	DEALT BY : SIMRAN	DATE : 31/01/2026
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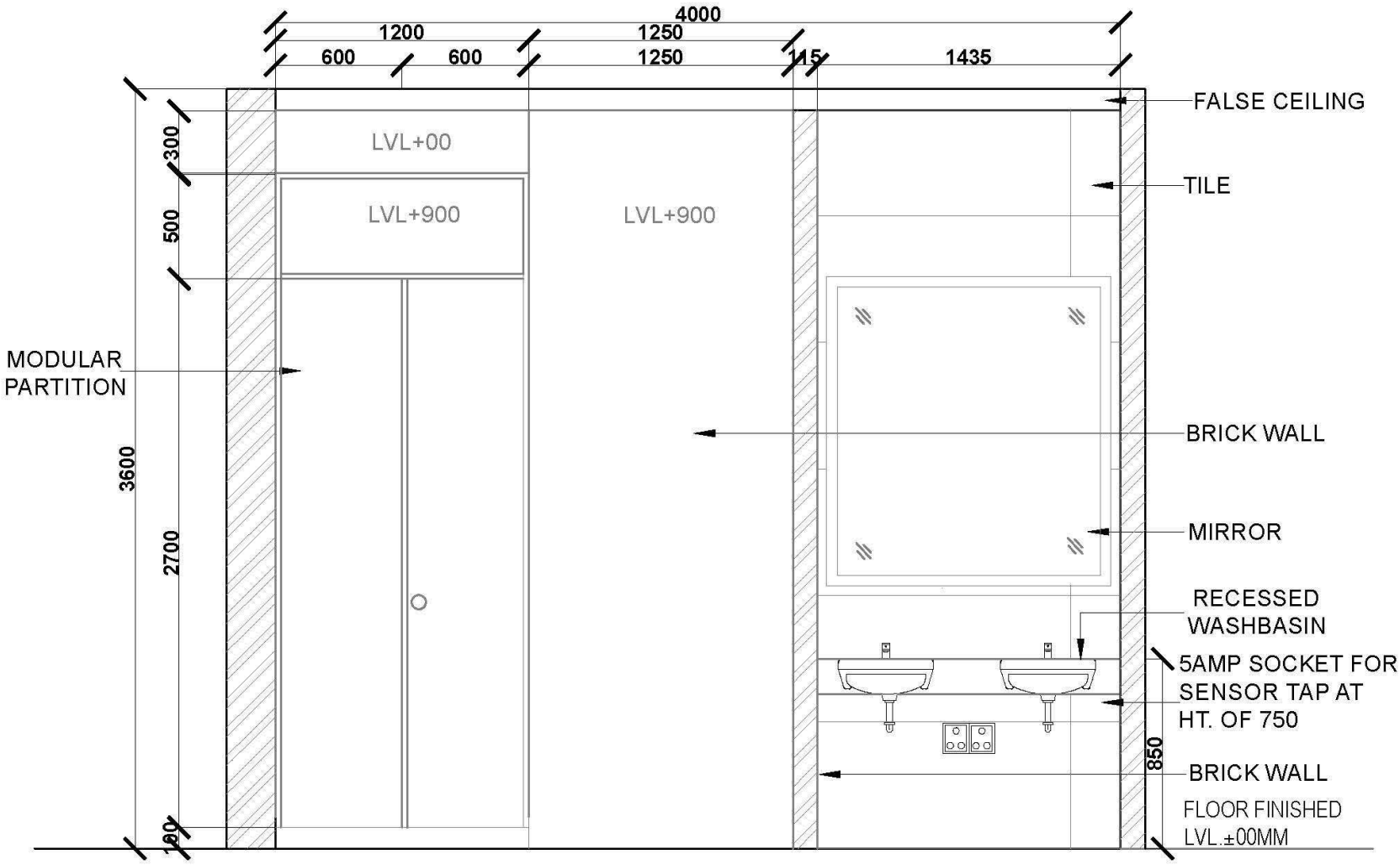
ELEVATION-A

PROJECT: CDAC SECTOR 62 NOIDA	ARCHITECTS Arhta Architect Harish Tripathi & Associates 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684,41627270 Email: arhta1@ gmail.com	DRAWING TYPE: WORKING DRAWING	DRAWING NAME: FIRST/THIRD FLOOR GENTS TOILET ELEVATION		DEALT BY SIMRAN	DATE: 05-02-2026
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					DRAWING NO:	REVISION:



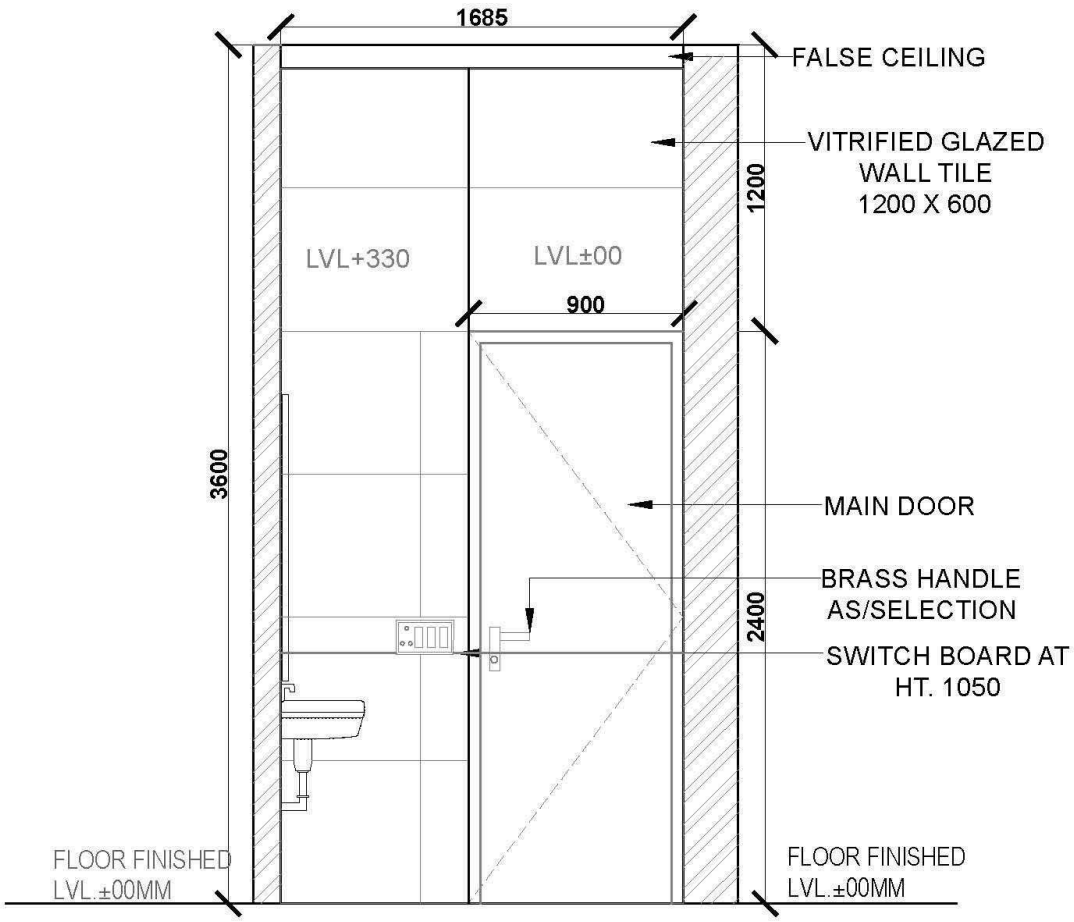
ELEVATION-B

PROJECT: CDAC SECTOR 62 NOIDA	ARCHITECTS Arhta Architect Harish Tripathi & Associates 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684,41627270 Email: arhta1@ gmail.com	DRAWING TYPE: WORKING DRAWING	DRAWING NAME: FIRST/THIRD FLOOR GENTS TOILET ELEVATION		DEALT BY SIMRAN	DATE: 31-01-2026
					APPROVED. BY DR. HARISH TRIPATHI	SCALE:
					DRAWING NO:	REVISION:



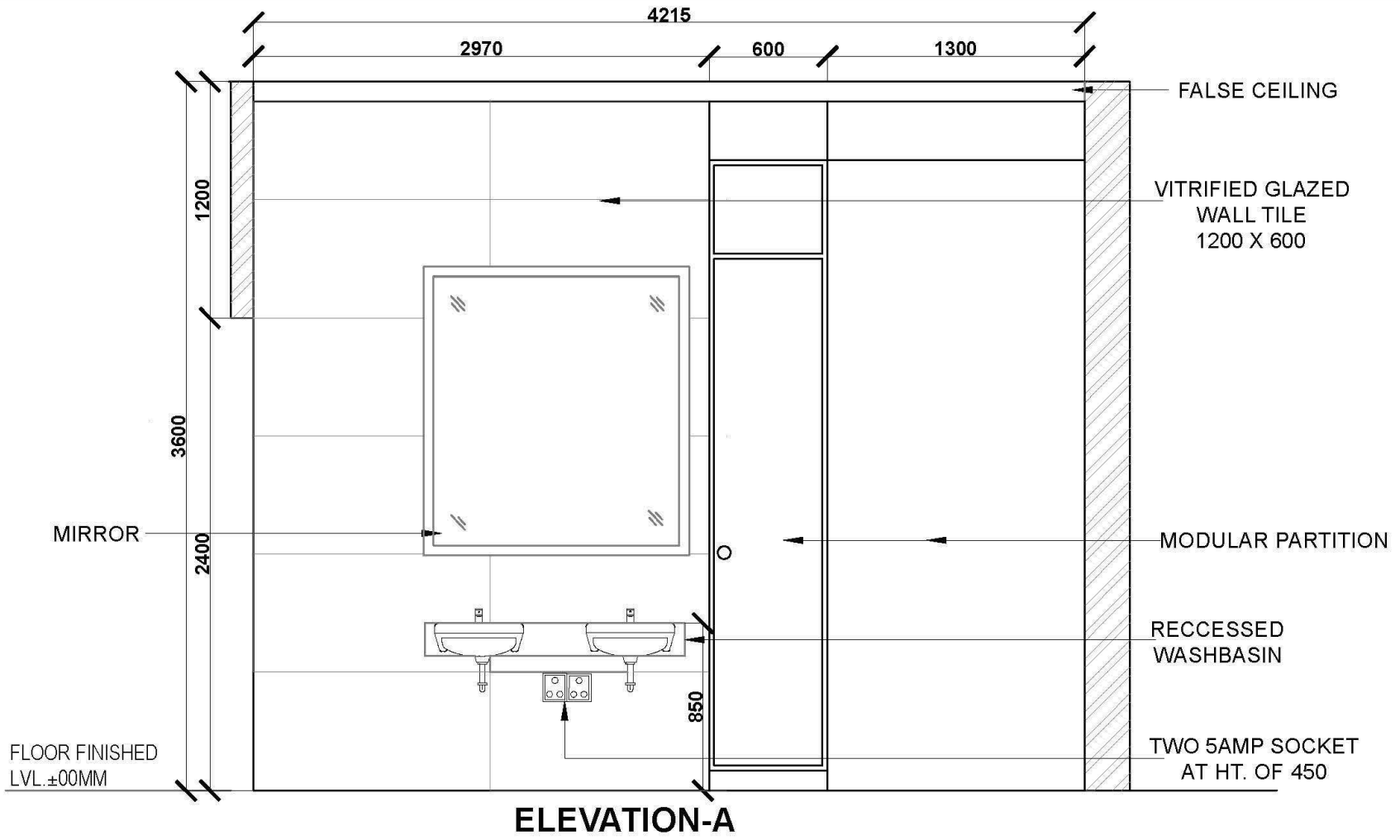
ELEVATION-C

PROJECT: CDAC SECTOR 62 NOIDA	ARCHITECTS Arhta Architect Harish Tripathi & Associates 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684,41627270 Email: arhta1@ gmail.com	DRAWING TYPE: WORKING DRAWING	DRAWING NAME: FIRST/THIRD FLOOR GENTS TOILET ELEVATION		DEALT BY SIMRAN	DATE: 31-01-2026
					APPROVED. BY DR. HARISH TRIPATHI	SCALE:
					DRAWING NO:	REVISION:



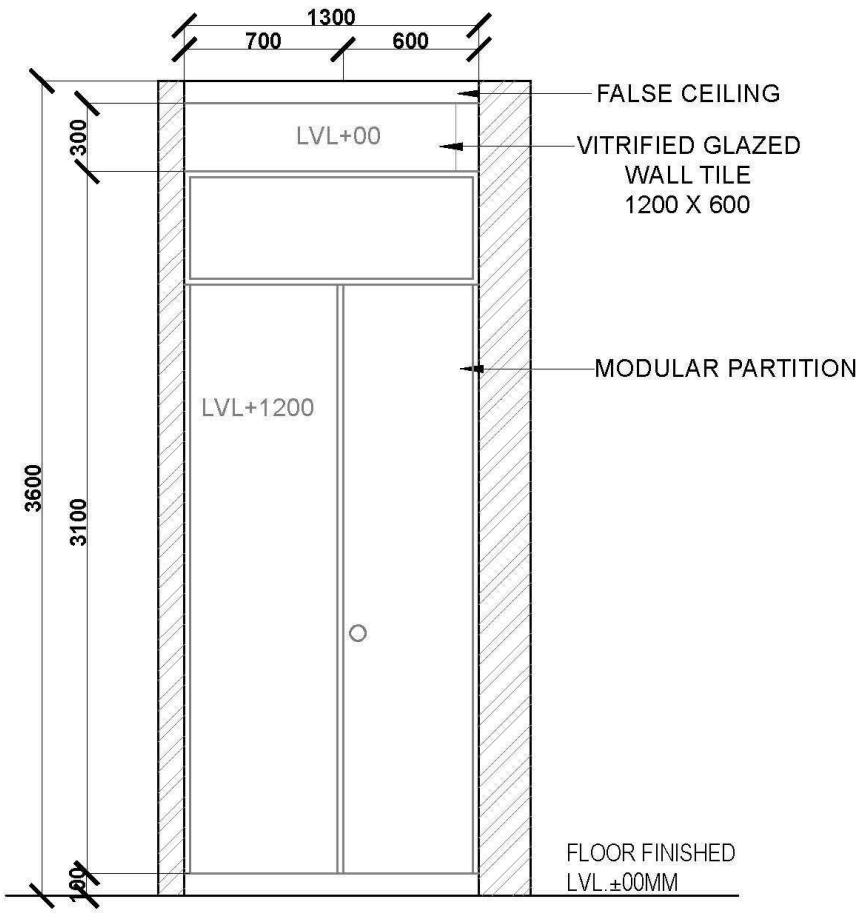
ELEVATION-D

PROJECT: CDAC SECTOR 62 NOIDA	ARCHITECTS Arhta Architect Harish Tripathi & Associates 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684,41627270 Email: arhta1@ gmail.com	DRAWING TYPE: WORKING DRAWING	DRAWING NAME: FIRST/THIRD FLOOR GENTS TOILET ELEVATION	DEALT BY SIMRAN APPROVED. BY DR. HARISH TRIPATHI DRAWING NO:	DATE: 31-01-2026 SCALE: REVISION:



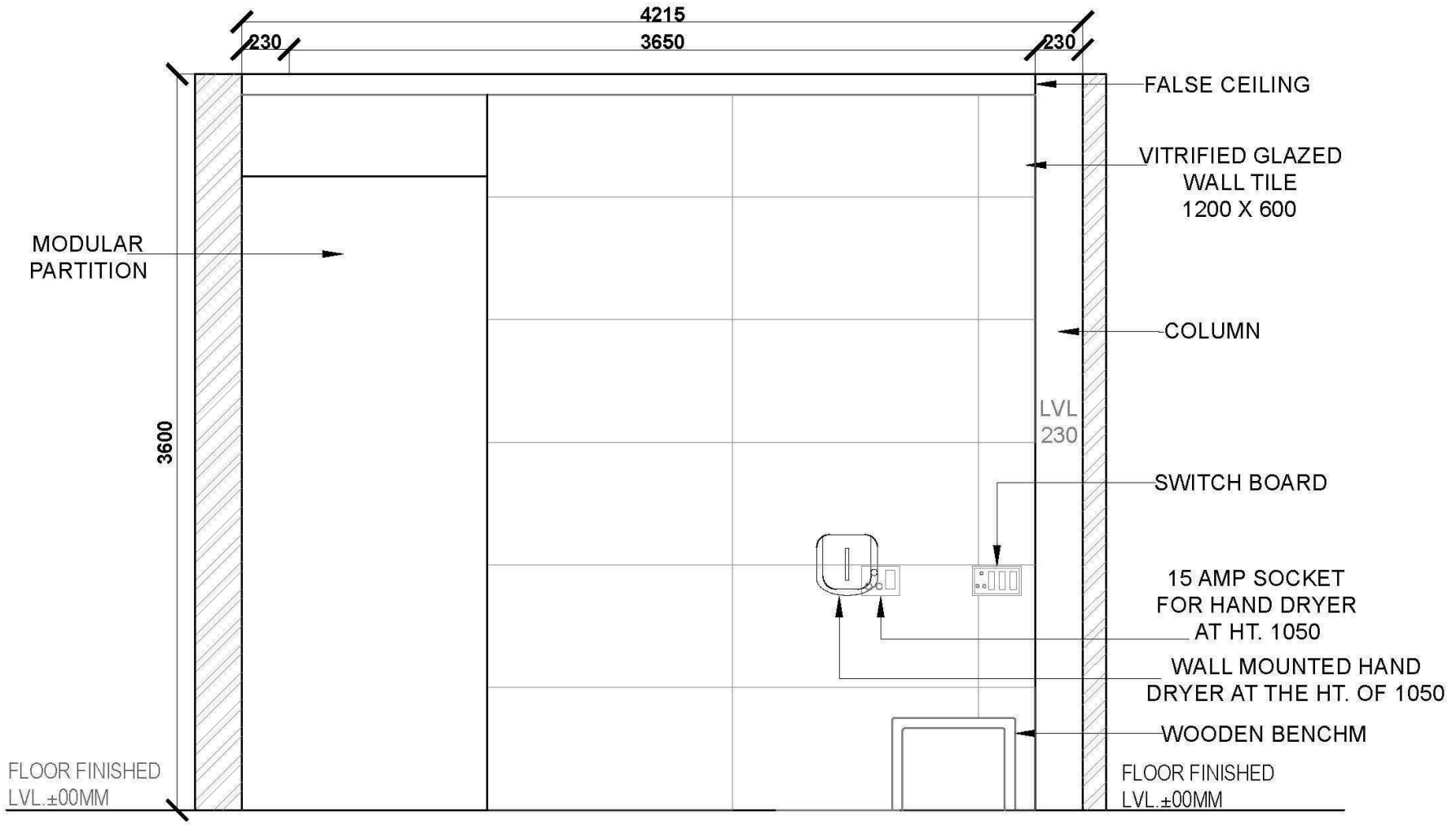
ELEVATION-A

PROJECT: CDAC SECTOR 62 NOIDA	ARCHITECTS Arhta Architect Harish Tripathi & Associates 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684,41627270 Email: arhta1@ gmail.com	DRAWING TYPE: WORKING DRAWING	DRAWING NAME: FIRST/THIRD FLOOR LADIES TOILET ELEVATION		DEALT BY SIMRAN	DATE: 31-01-2026
					APPROVED. BY DR. HARISH TRIPATHI	SCALE:
					DRAWING NO:	REVISION:



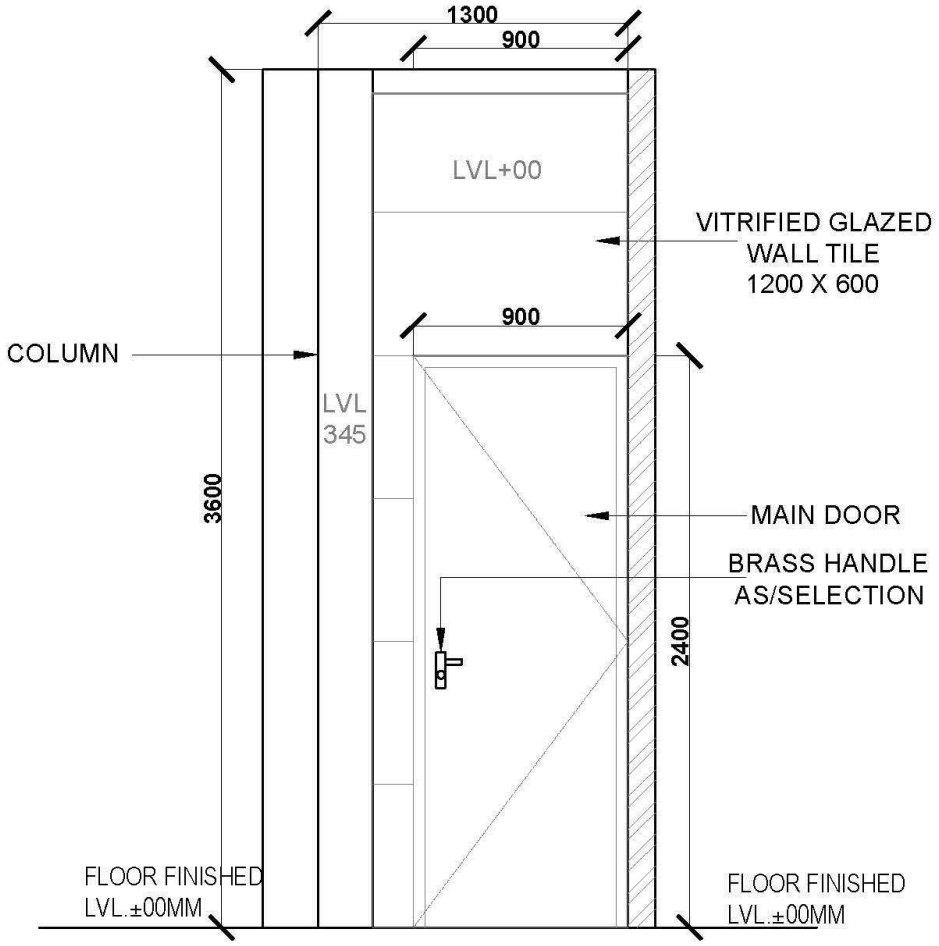
ELEVATION-B

PROJECT: CDAC SECTOR 62 NOIDA	ARCHITECTS Arhta Architect Harish Tripathi & Associates 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684,41627270 Email: arhtal@ gmail.com	DRAWING TYPE: WORKING DRAWING	DRAWING NAME: FIRST/THIRD FLOOR LADIES/HANDICAPPED TOILET ELEVATION		DEALT BY SIMRAN	DATE: 31-01-2026
					APPROVED. BY DR. HARISH TRIPATHI	SCALE:
					DRAWING NO:	REVISION:



ELEVATION-C

PROJECT: CDAC SECTOR 62 NOIDA	ARCHITECTS Arhta Architect Harish Tripathi & Associates 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684,41627270 Email: arhta1@ gmail.com	DRAWING TYPE: WORKING DRAWING	DRAWING NAME: FIRST/THIRD FLOOR LADIES/HANDICAPPED TOILET ELEVATION		DEALT BY SIMRAN	DATE: 31-01-2026
					APPROVED. BY DR. HARISH TRIPATHI	SCALE:
					DRAWING NO:	REVISION: 01



ELEVATION-D

PROJECT: CDAC SECTOR 62 NOIDA	ARCHITECTS Arhta Architect Harish Tripathi & Associates 224, Sukhdev Vihar (Near Escorts Heart Institute) New Delhi - 110025, India Ph: 011-26842684,41627270 Email: arhta1@ gmail.com	DRAWING TYPE: WORKING DRAWING	DRAWING NAME: FIRST/THIRD FLOOR LADIES/HANDICAPPED TOILET ELEVATION	DEALT BY SIMRAN APPROVED. BY DR. HARISH TRIPATHI DRAWING NO:	DATE: 31-01-2026 SCALE: REVISION:

