

SCOPE OF WORK

Advanced Traffic Management System (ATMS)

Construction of ATMS building including construction of Column, Column foundations, Back Filling foundation, Plinth beam, Brick work, RCC Roof, RCC Chajja, RCC Staircase, Balcony, RCC Beam, Parapet wall, Stair roof, Doors and windows, Glass panel at stair, hand rail, plinth protection, Electrical, Plumbing , Painting ,Interior work, etc all complete as per attached drawing & technical specifications at the following projects-

ATMS Building				
Name of Project	SPV name	Nos of building	Nos of Floor	Remark
Lakhandon-Khawasa	NEPPL	1	G+2	

1. Scope of Work-

1.1 Architecture and Civil Work

- a.** Construction of ATMS control centre building (ATMS Manager Room, Video Hall, Visitor Space, Server Room, Electrical & battery room, Meeting room, Mezzanine floor, Working space, Storeroom and Toilets) as per attached drawing.
- b.** The work including construction of Column, Column foundations, Back Filling foundation, Plinth beam, Brick work, RCC Roof, RCC Chajja, RCC Staircase, Balcony, RCC Beam, Parapet wall, Stair roof, Doors and windows, Glass panel at stair, hand rail, plinth protection, Electrical, Plumbing , Painting ,Interior work, etc all complete as per attached drawing & technical specifications.
- c. Brick works:** Brick masonry using 1st class burnt clay bricks/ Flyash brick, laid in cement mortar of mix ratio 1:3 (Cement: Sand), for foundations, walls, piers, columns, and other structures as per the approved drawings and technical specifications. The work includes thoroughly soaking the bricks in water for a minimum period of one hour prior to laying them to ensure proper bonding and to achieve maximum strength. The work shall also involve the protection of the green structure from rain during curing by suitable coverings. Curing of the masonry shall be done for a minimum period of 7 days as per standard practices to ensure the proper hydration and strength development of the mortar and masonry. The work excludes the cost of pointing, plastering, or any additional finish unless specified otherwise. The work shall be executed in accordance with the relevant CPWD and IS specifications. Environmental, material handling, and safety protocols shall be adhered to during execution. All incidental costs related to labor, material, machinery, and overheads are deemed included in the scope of work.
- d. RCC M-25 Concrete:** All concrete shall be Shall be RCC M25 grade of concrete. RCC M25 grade concrete for foundations, Beam, Slab & Column as per approved drawings and technical specifications, conforming to MoRTH Sections 1500, 1700, and 2200. The concrete shall be produced using a batch mix plant, transported via transit mixers, and placed in position using appropriate equipment. The mix

SCOPE OF WORK

Advanced Traffic Management System (ATMS)

design, including approved admixtures, shall be submitted for approval by the Engineer-in Charge (EIC) before production. Aggregates shall not exceed a maximum size of 20 mm, and the concrete shall have a workable slump suitable for RCC.

Concrete placement shall ensure a free-fall height of less than 1.5 m to avoid segregation and be compacted using mechanical vibrators for proper consolidation. The rate includes all formwork/shuttering costs to support concrete placement, which must ensure safety and stability. Adequate curing shall be performed for at least 7 days, following approved methods, to meet specified strength and durability.

Quality control measures include sampling, testing, and certification as per IS codes like IS 456 and IS 516 to verify strength and compliance. Environmental, material handling, and safety protocols shall be adhered to during execution. All incidental costs related to labor, material, machinery, and overheads are deemed included in the scope of work.

- e. Reinforcement Steel:** Reinforcement steel of designation TMT FE 500 as per IS 1786 for construction work. The vendor shall supply all necessary steel and 18-gauge black annealed binding wire. Reinforcement steel bars are to be cut, bent, and tied per approved bar bending schedules and structural drawings, ensuring precise dimensions and placements. Steel bars shall be securely tied at all intersections using 18-gauge black annealed binding wire to maintain stability during concrete placement. Laps shall conform to MoRTH specifications and as directed in drawings, with no separate payment for laps or overlaps as per MoRTH Clause 1600. Proper clear cover shall be maintained with spacers and chairs as per drawings and CPWD standards. Steel will be measured by weight in kilograms, excluding binding wire and without allowances for overlaps or wastage. The scope of work includes supply, handling, and on-site quality assurance for positioning, alignment, and compliance with specifications and as directed by EIC. Safety measures and quality checks shall be implemented during all stages, ensuring high-standard reinforcement for structural integrity. Reinforcement bars from the approved make shall only be used.

- f. Plastering:**

Inner Plastering: 12 mm thick Inner plaster in as per CPWD Clause 13. The 12 mm thick shall be in cement mortar 1:4 (1 cement: 4 fine sand), roughened while green for bonding. The work includes raking joints, cleaning, surface preparation, uniform application of both layers, curing as specified, and ensuring a smooth finish. The cost includes all materials cement, sand, labor, curing, scaffolding, and quality checks. The work shall conform to IS 1661:1980 and CPWD specifications.

External Plastering: 20 mm thick external plaster in two layers as per CPWD Clause 13. The base layer (12 mm thick) shall be in cement mortar 1:4 (1 cement: 4 fine sand), roughened while green for bonding. The top layer (8 mm thick) shall

SCOPE OF WORK

Advanced Traffic Management System (ATMS)

be in cement mortar 1:3 (1 cement: 3 fine sand) applied after the base layer has set. A waterproofing compound, such as Fosroc Conplast WL or CICO No. 1, shall be added to both layers as per manufacturer recommendations to enhance water resistance.

The work includes raking joints, cleaning, surface preparation, uniform application of both layers, curing as specified, and ensuring a smooth finish. The cost includes all materials (cement, sand, waterproofing compound, water), labor, curing, scaffolding, and quality checks. The work shall conform to IS 1661:1980 and CPWD specifications.

g. Flooring:

Control Room: Control room flooring detailed specification mentioned in attached drawing.

Toilet: Anti-skid vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only. Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, levelling system and rubber mallet for placing the tiles gently and easily.

Stair: Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete. Stainless steel hand railing to be provided for stair at all floors.

Any other Room Flooring: Double charge vitrified tile in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only. Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.

Wall Tiles- First quality ceramic wall tiles IS: 15622 (thickness to be specified by the manufacturer), of approved with Full height of washroom and 2000mm height for pantry and All inner of side wall 300mm height skirting make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps (20mm thick) using sand-cement mortar (1:3) with a 2mm thick cement slurry applied to the back of the tiles, utilizing cement at 2.91 kg per Sqm for slurry application. Joint filling shall be

SCOPE OF WORK

Advanced Traffic Management System (ATMS)

done with white cement slurry at 0.20 kg per Sqm to ensure joints are finished to match the existing work. Each tile shall be fixed with 4 key stones (10mm) adhered with Araldite or equivalent adhesive at the back to ensure stability.

- h. False ceiling:** Providing and fixing suspended false ceiling consisting of G.I. perimeter channels (size 0.55 mm thick, 27 mm wide with 20 mm flanges), fixed to walls/partitions with suitable fasteners at 450 mm centres, suspended using G.I. intermediate channels (size 0.9 mm thick, 45 mm wide with two flanges of 15 mm each) fixed to the perimeter channel with connecting clips. Ceiling sections (size 0.55 mm thick, 80 mm wide with two flanges of 26 mm each and a web of 0.55 mm) shall be fixed to the intermediate channel with connecting clips at 610 mm centres. Ceiling panels of 12.5 mm thick gypsum board conforming to IS:2095, fixed to the ceiling section with self-drilling screws 25 mm long at 230 mm centres, including jointing and finishing to achieve a flush finish, using jointing compound and paper tape, as per manufacturer's specification and direction of Engineer-in-Charge.

i. Painting:

External Painting: Preparation and application of 1 coat of primer and 2 coats of weatherproof paint in the approved shade to the exterior surfaces of the building. The work involves thoroughly cleaning the surface to remove all dirt, dust, oil, grease, efflorescence, and other contaminants that could affect paint adhesion. After cleaning, a coat of primer is applied, followed by two coats of weatherproof paint, ensuring a durable and uniform finish. The work will be carried out in accordance with MoRTH Clause 800, CPWD specifications, and the directions of the Engineer-in Charge

Interior Painting - Preparation and application of 1 coat of putty (1mm thickness), 1 coat of primer, and 2 coats of Apcolite Premium Emulsion or n equivalent emulsion paint in the approved shade to the interior surfaces of the building. The work includes thorough cleaning of the surface to remove dirt, dust, oil, grease, efflorescence, and any other contaminants. After cleaning, the surface will be treated with 1mm thick putty to smoothen the surface, followed by the application of a coat of primer and two coats of emulsion paint. The work will be completed as per MoRTH Clause 800, CPWD Specifications 500, and the directions of the Engineer-in-Charge.

j. Doors and Windows:

Providing & fixing factory-made uPVC frame made of uPVC extruded sections having an overall dimension as mentioned in the drawing (tolerance ± 1 mm), with wall thickness 2.0 mm (± 0.2 mm), corners of the door frame to be jointed with galvanized brackets and stainless-steel screws, joints mitered and Plastic welded. The hinges side vertical of the frames reinforced by galvanized M.S tube of size 19 x19mm and 1mm(± 0.1 mm) wall thickness and 3 no's stainless-steel hinges fixed to the frame complete as per manufacturers specification and direction of engineers in -charge.

SCOPE OF WORK

Advanced Traffic Management System (ATMS)

Providing & fixing of uPVC shutter with glass (5mm thick Toughened glass/louvers/fostered glass of door/window and ventilator in the frame.

Locations of Doors and window as per approved drawings.

Toilet Doors: Providing and fixing factory made single extruded 30mm thick WPC (Wood Polymer Composite) solid plain flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm², modulus of elasticity 850 N/mm² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel butt hinges and necessary S.S screws shall be paid separately)

- k. Cladding Work:** Cladding work shall be done all doors and windows with 18 mm thick Granite stone gang saw cut, mirror polished, remoulded and repolished, 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 of edges to give high gloss finish etc. complete at all levels.
- l. Plinth Protection-** Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand (Zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing, and finishing the top smooth
- m. Stainless Steel Railing:-** Providing and fixing stainless steel (Grade 304) railing made of hollow tubes, channels, plates, etc., including welding, grinding, buffing, polishing, and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, including fixing the railing with necessary accessories and stainless steel dash fasteners, stainless steel bolts, etc., of required size, on the top of the floor or the side of the waist slab with suitable arrangement as per approval of Engineer-in-Charge.
- n. Roofing:** Providing and laying pressed clay tiles (as per approved pattern, 20 mm nominal thickness of approved size) on roofs, jointed with cement mortar 1:4 (1 cement : 4 coarse sand) mixed with 2% integral waterproofing compound, laid over a bed of 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand), and finished neat, complete.

SCOPE OF WORK

Advanced Traffic Management System (ATMS)

- o. Interior Work at Control Room:** Please follow the technical specification control room which is attached with the drawing.

1.2 Plumbing & Sanatory works

- a. SWR UPVC TYPE – B pipe:** SWR UPVC TYPE – B pipe with all kind of relevant Fittings as per IS: 13592. In case of ceiling hanging, the supply of Pipe Clamps (Chilly/MS angle)
- b. U-PVC Agriculture Pipes:** U-PVC Agriculture Pipes as per IS: 4985. Cut to required lengths including all necessary fittings and specials such as bends, tees, unions, reducers, flanges and plugs etc. The pipes & fittings shall be tested to a pressure of 10 Kg/Sq.cm. Fixing at wall/ ceiling /floor level supported by clamps, fastener, hangers etc. as per specification. Cutting hole in wall / floor slab and making good the same with cement concrete 1:2:4 complete as required. For basin, sink and urinal waste line
- c. Water Tap:** cast iron 'P' or 'S' trap conforming to I.S. 3989 /1970 and 1729 / 1964 including drip sealed joints and painting two coats to the exposed surface. (Painting to be paid separately). In case of ceiling hanging, the supply of Pipe Clamps (Chilly/MS angle).
- d. SS grating:** Supplying, fitting and fixing 10mm SS grating or top grating or Jali with connection pipe for Floor trap/Floor wash as per approved design.
- e. Butterfly valve:** butterfly valve with Bronze, body, disc & stem union flanges, washer nuts & bolts rated to a temperature of 85 Deg C & suitable for pressure not less than 15 kg/sqcm. Including nitrile rubber insulation with proprietary fireproof protective coating against mechanical damage as per manufacturer's specification (GI boxing to be provided).
- f. Rainwater Pipe:** Supply, fixing, testing and commissioning in position UV stabilised 100mm dia SWR UPVC TYPE – B pipe with all kind of relevant Fittings as per IS: 13592. In case of ceiling hanging, the supply of Pipe Clamps (Chilly/MS angle), 250 mm x 250 mm. dia CI Rainwater Grating for pipes upto 110 mm dia shall be provided.
- g. Urinals and Accessories**
 - I. **Urinals:** Installation, Fitting and fixing Flat back small urinal (half stall in urinal, Size: 460 mm x 350 mm x 260 mm.) in starwhite vitreous chinaware complete in position with brass screws on 75 mm x 75 mm x 75 mm wooden blocks complete. (NOTE: 1 LTR PER FLASH)
 - II. **Partion:** Supplying, fitting and fixing 25 mm thick Chinaware partition including cutting groove in wall approx. 75 mm x 75 mm x required ht. and setting concrete (1:2:4) including all hardware.
 - III. 32 mm (for placing in Urinal). dome shaped C.P. Waste coupling.
 - IV. PVC Bottle trap of heavy quality of 32 mm dia with 190 mm long connecting pipe and wall flange.
 - V. Supplying, Fitting and fixing approved brand PVC connector (300

SCOPE OF WORK

Advanced Traffic Management System (ATMS)

mm/600mm long) flexible with both ends coupling with heavy brass over C.P. nut 15 mm dia.

- VI. 15mm Dia C.P. on brass angular stop cock with wall flange or similar brand)

h. Sink Sets & Accessories:

- I. Stainless steel sink with drain board Overall Size 1040 mm x 510 mm, Bowl Size 460 mm x 410 mm x 205 mm.
- II. Sink without drain board with inbuilt waste coupling – Bowl Size 410 mm x 355 mm x 175 mm.
- III. Supply, fitting, fixing of C.P over brass Bottle trap of heavy quality of 32 mm dia with 190 mm long connecting pipe and wall flange.
- IV. Installation, Fitting and fixing of C.P on brass Sink Cock (Wall Mounted) with regular swinging casted spout with connecting legs and flanges. (NOTE: 3.5 LTRS PER MINUTE)
- V. C.P. on brass Angular stop cock with wall flange, 15MM DIA for RO
- VI. Installation, Fitting and fixing of C.P. Bib cock of approved make and brand tested to 21 kg per sq. cm.

i. Basin Sets & Accessories:

- I. Supplying, Fitting and fixing Rectangle shape Wash basin (countertop/under counter) wash basin star white vitreous china of approved make (without fittings) Fitted and fixed in position on 75 mm x 75 mm wooden blocks and C.I. brackets with two coats of painting of C.I brackets including mending good all damages.
- II. C.P over brass Bottle trap of heavy quality of 32 mm dia with 190 mm long connecting pipe and wall flange.
- III. Installation, Fitting and fixing C.P on brass Piller cock with regular swinging casted spout with flanges (NOTE: 1.4 ltrs per minute)
- IV. Supply, Fitting and fixing C.P. Angular stop cock of approved make and brand tested to 21 kg per sq. cm.
- V. Any Other necessary item shall be fixed as per site condition.

j. SANITARY FIXTURES AND FITTINGS:

- I. Installation, fixing, testing and commissioning of exposed plastic low level cistern for WC, with 6/3 ltrs dual flush facility complete with all necessary fittings, 40 mm dia heavy duty flush bend pipes & accessories including all supports and making good.
- II. Installation, Fitting and fixing full set of Sanitary fixtures and fittings for Paraplegic Toilet consisting of Starwhite Wash basin of size 650 mm x 350 mm with one pair of mounting brackets, Starwhite European water closet and concealed Cistern complete with fittings and Seat cover, one no. of Hinged rail 760 mm, five nos of Grab rails 600 mm.
- III. C.P. on brass Hand shower (Health faucet) with 8 mm dia, 1-metre-long Flexible tube with wall hook. All hardware is in the Contractor

SCOPE OF WORK

Advanced Traffic Management System (ATMS)

scope.

- IV. Supplying, Fitting and fixing Wall mounted Roll type C.P. on brass Toilet paper holder with wooden spindle as necessary of size 250 mm X 125 mm.
- V. Supplying, Fitting and fixing 40 mm dia.(for EPWC/APWC) C.P on brass (heavy quality) flush bend of approved make, coupling short piece, insertion piece, clamps etc. complete. [Note:- Flush bend only shall be supplied as a free issue Material.
- VI. Fitting and fixing approved brand CP on brass connector flexible with both ends coupling with heavy brass over C.P. nut 15 mm dia.
- VII. Any Other necessary item shall be fixed as per site condition.
- k.** Installation of overhead syntax water storage tanks (2000ltr).
- l.** construction of soak pit and septic tank as per approved design, drawings, and technical specifications

1.3 Electrical Works

- a. LED Light:** Supply of "Recess/Surface mounted Round LED Downlight 18Watt" Similar to Havells Make -'INTEGRA NXT DLR 18W 857-WHITE' (Or equivalent to Wipro/Philips /Trilux/Bajaj make.) with 3x1.5 mm. PVC copper wire, connections etc. as required including supply of all fixing and connecting materials.
- b. Ceiling fan:** Supply of 1200 mm Sweep Ceiling fan (Orient,Bajaj,Crompton Greaves) shall have minimum 3 years OEM warranty.
- c.** Supplying & Fixing of Box type fan clamp of 150mm dia & 80mm depth made of 16 SWG CRCA sheet with one end duly sealed by cover, properly welded, incl. S&F 12mm dia 600mm long MS rod duly bent by heat treatment at the center position of rod to grip fan bobbin properly, incl. binding the rod and fan box with reinforcement by 22 SWG steel binding wire, incl. supplying & covering the box with alkathene sheet, placed in order to prevent concrete from entering the box.
- d. Fan regulator:** Supply & Fixing 240V, Modular Socket (1 Module) type fan regulator (Step type) (Brand approved by EIC) on existing Modular GI switch board with top cover plate incl. making neck. connections etc.
- e.** Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (up to 30 cm) with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable, including providing and fixing phenolic laminated sheet cover on the fan box etc. as required.
- f.** Providing and fixing extra conduit down rod of 20 mm dia, 2 X 10 cm length, wiring with 2 X 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable including painting etc. as required. (Note : More than 5 cm length shall be rounded to the nearest 10 cm and 5 cm or less shall be ignored)
- g. Exhaust Fan:** Exhaust Fan shall be (Approved make 230MM) shall have minimum 3 years OEM warranty.
- h. Call Bell:** Call Bell/Buzzer suitable for single phase, 230 V,Complete as required.

SCOPE OF WORK

Advanced Traffic Management System (ATMS)

- i. **Air conditioners:** AC suitable for single phase, 230 V, Complete as required 2ton. 5 star.
- j. **Point Wairing:** Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLSH 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. Total 3 Runs of wires to be laid including Earth Wire.
- k. **Secondary Point Wiring :** Wiring for group controlled (looped) light point (without independent switch etc.) with 1.5 sq. mm FRLSH PVC insulated copper conductor single core cable in surface/medium class PVC conduit, and earthing the point with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable etc. as required. Total 3 Runs of wires to be laid including Earth Wire.
- l. **DB & ACCESSORIES:** Supplying and fixing following way, Horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required.
TPN 6 Way MCB DB Comprising the following Typical Floor Lighting DB Raw Power:
Incoming: 1 No. 40A, 4P MCB , 10 KA, C Curve (As per SLD), Outgoing: 18 Nos. 6 to 10A SP MCB, 10 KA, C Curve (As per SLD).
- m. **CIRCUIT WIRING FOR LIGHTING:**
 - a. Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLSH PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required. (2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire,)
 - b. Medium class PVC conduit along with accessories in surface/recess including painting in case of surface conduit or cutting the wall and making good the same in case of recessed conduit as required.
- n. **Power Socket Details:**
 - a. Point Wiring for 16A Socket for Bathroom Water Heater (Geyser) :
Supplying, Laying, connecting, testing & commissioning of 16 Amp socket point wiring for Geyser in concealed system complete as per specification & drawing . Cost of point wiring shall include necessary wiring from Distribution Board to the individual switch board with 2 x 2.5 sq. mm + 1 x 2.5 sq.mm 1.1 KV single core FRLS PVC insulated copper wires (1 No. being earth with green insulation) in 20/25 mm bore medium gauge rigid FRLS PVC conduit complete with approved sizes of switch board , socket board (Geyser switch & socket should be fixed in separate board) , junction box, normal / deep circular box, modular cover plate, modular type switch, socket blank plate. including supply of all required material & necessary connection as required. Cost of chisel cutting in brick wall and making good all damages are also deemed to be included in the

SCOPE OF WORK

Advanced Traffic Management System (ATMS)

quoted rates. All materials shall be ISI marked and as specified and approved.

B. Supplying and fixing suitable size GI box (3 Module) with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 A modular socket outlet and 5/6 A modular switch, connections etc. as required.

C. Supplying and fixing suitable size GI box (6 Module) with modular plate and cover in front on surface or in recess, including providing and fixing 2 nos. 3 pin 5/6 A modular socket outlet and 2 nos. 5/6 A modular switch, connections etc. as required.

D. Supplying and fixing suitable size GI box (3 Module) with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 A modular socket outlet and 15/16 A modular switch, connections etc. as required.

E. Supplying and fixing suitable size modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 A modular socket outlet and 5/6 A modular switch on the existing modular GI box including connections etc. as required.

F. Metal box on surface or in recess Wall Junction box including providing suitable size of phenolic laminated sheet cover in the front including painting.

G. 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 medium class PVC conduit as required.

o. LADDER TYPE CABLE TRAY: Supply, Installation, Testing and Commissioning of Hot dip Galvanized Ladder Type Cable tray with other necessary accessories as required to complete the job.

p. RACEWAY & JB: Supply & fixing of UPVC Raceway with appropriate cover including cutting the wall or floor etc. as required.

q. EARTHING:

a. Supply of earth electrode for earthing:

Supply & driving of 3 meter long, 40mm dia. MS rod as earth electrode & one end will be conical shaped for easy penetration in soil.

The rod shall be provided with a clamping arrangement (opposite to the conical side & 150mm apart from the end) made out of 75mm X 8mm MS flat duly welded thoroughly with the rod.

b. Earthing Installation by CU Plate Earthing –(For DG Neutral Earthing) :

Earthing with Copper plate (610x610x3mm size) having weight of 9.84 Kg and 2 Nos. 40x6 mm Copper strip (3.20 mt long) & 1 no. 6 sqmm PVC insulated stranded Copper wire (4 Mt long) incl. S & F 15 mm dia GI pipe (ISI-Medium) protection (4 mt. long) to be filled with bitumen, partly under the ground level & partly above ground level to an average depth

SCOPE OF WORK

Advanced Traffic Management System (ATMS)

of 3.65 Mts. below the ground level and restoring the surface duly rammed incl. providing 3.0 mt long, 25 mm dia GI pipe (ISI-Medium) for periodic treatment, incl. providing masonry enclosure on the top of the earth electrode of overall size 86.36x86.36x46cm deep (below Ground level) complete with cemented brick work (1:6) of 25 cm width, duly plastered with cement mortar (inside) CI hinged inspection cover of size 36.56x35.56cm with locking arrangement, GI reducer and treatment of soil by using salt & charcoal or coke for plate electrode.

- c. **Earthing Strips:** Supplying, laying, jointing and connection of earthing strips for equipotential bonding, interconnecting system Neutral/ equipment body and earthing station. The scope includes supply & fittings of accessories like earthing clamp, saddle etc. and jointing of strips by welding/ brazing/soldering etc.
- d. Supplying and fixing of 75x6 mm and 500 mm long GI Earth Busbar with G.I.nuts, bolts and spring washers as required. No of holes in earth busbar for termination of strips should be as per drawing & as directed by EIC.
- r. **MODULAR UPS:** UPS pure sine wave of 10 kVA capacity complete with standard features, along with necessary SMF batteries for 15 mins battery backup, as per specification no. AP-UPS (With Three Years OEM Warranty).

2. Office furniture for all room

a. Meeting Room 1st Floor:

Table- 1 Nos 8-seater P&F of fully customized/modular typed size 2350mm x 1150mm x750 mm fully finished in PLT RANGE make finish, along with Hettich make soft closing hardware's. - Godrej Make

Chair- 9 Nos Thrive Plus Full Back chair having size-750mmx 750mm x 1000-1090mm- Godrej Make

b. Conference working space 2nd Floor:

Table- 1 Nos 14-seater P&F of fully customized/modular typed size 4800mm x 1500mm x750 mm fully finished in PLT RANGE make finish, along with Hettich make soft closing hardware's. - Godrej Make

Chair- 14 Nos Thrive Plus Full Back chair having size-750mmx 750mm x 1000-1090mm- Godrej Make

c. Working Space 1st Floor:

Workstation- 6 Nos- Open Desk Series Workstation 1200x650Mm with 25Mm Thick Prelaminated Particle Board Tabletop With 2Mm Th. PVC Edge Banding Tape & WITH CBG Glass SCREEN AS per 3D Supported on Rectangular Pipe Tapper - Open Desk Metal Powder Coated Under structure. Each Desk Will Have Switch Slot Cutting Above the Tabletop & Wire Manager Hole Above the Tabletop for Switch

SCOPE OF WORK
Advanced Traffic Management System (ATMS)

Access.

6 Nos- P & F a Pedestal Unit as per Standard made in PLPB board having Sizes 450mmX 450mm

Chair- 6 Nos Thrive Plus Full Back chair having size-750mmx 750mm x 1000-1090mm- Godrej Make

d. Working Space 2nd Floor:

Workstation- 15 Nos Open Desk Series Workstation 1200x650Mm with 25Mm Thick Prelaminated Particle Board Tabletop With 2Mm Th. PVC Edge Banding Tape & WITH CBG Glass SCREEN AS per 3D Supported on Rectangular Pipe Tapper - Open Desk Metal Powder Coated Under structure. Each Desk Will Have Switch Slot Cutting Above the Tabletop & Wire Manager Hole Above the Tabletop for Switch Access.

15 Nos- P & F a Pedestal Unit as per Standard made in PLPB board having Sizes 450mmX 450mm

Chair- 15 Nos Thrive Plus Full Back chair having size-750mmx 750mm x 1000-1090mm- Godrej Make

e. Project Manager Room 2nd floor:

Table- Maestro Premium Executive Desk Size 1800mmx 900mmx 750mm- Godrej Maake

Chair- 3 Nos Thrive Plus Full Back chair having size-750mmx 750mm x 1000-1090mm- Godrej Make

f. ATMS Manager Room:

Table- Maestro Premium Executive Desk Size 1800mmx 900mmx 750mm- Godrej Maake

Chair- 3 Nos Thrive Plus Full Back chair having size-750mmx 750mm x 1000-1090mm- Godrej Make

g. ATMS Control room:

Please refer the control room specification as mentioned in the **Technical Specification for Control Room Interior and Control Desk Point page no 229 & 270 of RFP**. Chair- 10 Nos Thrive Plus Full Back chair having size-750mmx 750mm x 1000-1090mm- Godrej Make

h. Mezzanine Floor:

Sofa Set: 2 Nos P & F a 4-Seater work lounge Sofa as selected by Employer.

Sofa Set: 2 Nos Coffee Table in Rectangular Shape Having sizes 850X550mm as per Design Selection by employer

i. Storage cabinets and shelving units in common rooms and corridors as directed

SCOPE OF WORK
Advanced Traffic Management System (ATMS)

by employer.

j. Waiting Area 2nd floor:

- a. **Sofa Set:** 2 Nos. of 4-Seater Work Lounge Sofas, ergonomic and modern design, upholstered with high-quality leatherette/fabric (as per sample approved by the Employer), high-density foam cushioning, sturdy wooden/metal internal frame, with a minimum seat depth of 22 inches and back height of at least 30 inches.
- b. **Visitor Chair:** 8 nos comfortable visitor chairs with armrests, upholstered in durable fabric or leatherette, with cushioned seat and backrest. Frame to be powder-coated steel or chrome finish, with anti-skid leg caps.
- c. **Table:** One centre table made of hardwood/MDF with laminate/veneer finish, top to be glass/solid wood/composite stone (as per employer), size 2350mmx1150mmx650mm, with rounded corners and smooth finish.

s. Pantry :

- a. Granite or Quartz stone platform (min. 600 mm deep)
- b. 1 No. Stainless Steel sink with drainboard
- c. Below-counter and overhead modular storage cabinets with laminate finish
- d. Waste bin drawer or stand
- e. Water purifier (wall mounted)

3. Specifications and Standards

All Materials, work and construction operations shall confirm MORTH Specifications for Road and Bridge Works and CPWD specification. Where the specification for a job is not given, Good Industry Practice shall be adopted to the satisfaction of the Employer.

list approved brands/makes of materials to be used for constructing an ATMS or related building. List of approved makes mentioned below:

S. no.	Items	Approved Make List
1.	Cement	Ultratech Cement Ltd Ambuja Cement J K Super/Laxmi Shree Cement Birla/Mangalam Cement
2.	Flooring at Staircase	Kota stone flooring (Damage Proof, with 5-year warranty).
3.	Wall Tiles	Kajaria/Somany/Johnson/ Nitco/ Asian Granito

SCOPE OF WORK
Advanced Traffic Management System (ATMS)

S. no.	Items	Approved Make List
4.	False Ceiling	
5.	Building Floor tiles	Vitrified Floor tiles (Make: Somany Ceramics Limited, Nitco Tiles, Kajaria Ceramics, Johnson Tiles)
6.	Paint	Asian/Nerolac/Berger
7.	PVC/HDPE Pipes	FIP/ Astral/ Xiamen Sanideng/ Finolex/ Prince
8.	Staircase Railing	Stainless steel
9.	Brick	1 st Class
10.	Overhead Water Tank	Syntex or Supremo
11.	Submersible Motor-	Crompton, Kirloskar (Minimum 3HP)
12.	Sanitary Fittings (Leak Proof with 5-year warranty)	Parryware /Jaguar / Hindware/ Cera/ Somany
13.	Electrical fittings (Concealed wiring)	Havells/Orient/Crompton/Philips.
14.	Light fitting	
15.	Air Conditioner	o'generall/Daikin
16.	Ceiling Fan and wall mounted fan, Exhaust fan	Orient or Philips or Khaitan
17.	Almirah	Godrej or Neelkamal
18.	RO water Purifier	Eureka forbes
19.	Down take Pipe	Finolex/6Kg/cm ²
20.	Sewage pipes	Earthware
21.	Doors and windows	Providing & fixing factory-made uPVC frame made of uPVC extruded sections having an overall dimension as mentioned in the drawing (tolerance +/- 1mm), with wall thickness 2.0 mm (+/- 0.2mm), corners of the door frame to be jointed with galvanized brackets and stainless-steel screws, joints mitered and Plastic welded. The hinges side vertical of the frames reinforced by galvanized M.S tube of size 19 x19mm and 1mm(+/-0.1mm) wall thickness and 3 no's stainless-steel hinges fixed to the frame complete as per manufacturers specification and direction of engineers in -charge.

SCOPE OF WORK
Advanced Traffic Management System (ATMS)

S. no.	Items	Approved Make List
		Providing & fixing of uPVC shutter with glass (5mm thick Toughened glass/louvers/fostered glass of door/window and ventilator in the frame.
22.	Reinforcement Steel	Tata Steel/SAIL/RINL/ Jindal Steel Power Ltd
23.	Structural Steel	Tata Steel/SAIL/RINL/ Jindal Steel Power Ltd
24.	Aluminum Section	Hindalco/ BALCO/ NALCO
25.	Bajri/Frosted/Wired Glass/ Clear Float Glass for Doors, windows, ventilators	saint Gobain/ Asahi Float/ Modiguard
26.	Mortised Locks & Door Accessories	Assa Abloy India Pvt. Ltd (Yale) Everiet Godrej & Boyce Manufacturing Company Limited Link Group of Industries Europa
27.	DG Set	Jakson/ Sudhir Genset/ Supernova
28.	Light fittings	Wipro/CGL/ Philips/ Bajaj
29.	Limit switch	Siemens/ Schneider/ Honeywell/ Pyrotech
30.	MCB/MCC	Siemens/ Schneider/ Honeywell/ Havells
31.	Switch/socket/industrial receptircal/switch board	Hager/Havells/Anchor/Indo Asian
32.	Wires	Polycab/Rpg/ Havells/ Finolex
33.	Office furniture-Sofa, Chair, Table etc.	Godrej

Note: Any Other items should be of industry standard and should be installed after approval of Authority Engineer.