

GOVERNMENT OF GUJARAT
IRRIGATION DEPARTMENT,



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Name of Work: PROPOSED INSPECTION BUNGLOW AT WEST WEIR, MESHWO
RESERVOIR AT : SHAMLAJI, TA : BHILODA, DIST : ARVALLI.

DRAFT TENDER PAPER

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Item No 16: Providing Thermo Mechanically Treated bar (T.M.T.) (I.S.I. Mark) conforming to I.S. - 1786 Fe - 500D for R.C.C. work including bending, binding and placing in position complete. All floor Level

1.0 GENERAL

This work shall consist of furnishing and placing **TMT Fe500 Conforming to IS 1786 2008** reinforcement, bars (intentioned) of the shape and dimensions shown on the drawings and conforming to these Specifications or as approved by the Engineer in charge.

2.0 MATERIAL

2.1. TMT Bars

Reinforcements shall be **TMT Fe500** steel bars. They may be uncoated or coated 'with epoxy or with approved protective coatings.

2.2. TMT bars reinforcement for RCC work shall conform to IS 1786 FE-415 and shall be of tested quality. It shall also comply with relevant part of IS 456-1966

2.3. All reinforcement shall be clean and free from dirt, paint, grease or oil, oil scale or loose or thick rust at the time of placing

2.4. All steel shall be procured from original producers no re-rolled steel shall be incorporated in the work

2.5. Only new steel shall be delivered to the site every bar shall be inspected before placing to its position and defective brittle or burnt bar shall be discarded cracked ends of bars shall be discarded

3.0 Pitch

3.1. Distance between bars shall be as specified in drawings and as directed by the Engineer in Charge. all bars shall be placed at an accurate distance from each other and shall be bind tightly to maintain the desired pitch Suitable means shall be provided for holding bars securely in position

4.0 Binding wire

4.1. Mild steel binding wire shall be of 1.63 mm or 1.22 mm (16 to 18 gauge diameter and shall conform IS 280-1972

4.2. The use of black wire will be permitted for binding reinforcement bars. It shall be free from dirt, paint, grease or oil, oil scale or loose or thick rust and any other undesirable coating which may prevent adhesion of cement mortar at the time of binding

4.3. Only new binding wire shall be delivered to the site all binding wire shall be inspected before binding to its position and defective brittle, rusted, used wire, shall be discarded

5.0 PROTECTION OF REINFORCEMENT

5.1. Uncoated reinforcing steel shall be protected from rusting or chloride contamination. Reinforcements shall be free from rust, mortar, loose mill scale, grease, oil or paints. This may be ensured either by using reinforcement fresh from the factory or thoroughly cleaning all reinforcement to remove rust using any suitable method such as sand blasting, mechanical wire brushing, etc. as directed by the Engineer. Reinforcements shall be stored on bricks, racks or platforms and above the ground in a clean and dry condition and shall be suitably marked to facilitate inspection and identification.

5.2. Portions of uncoated reinforcing steel and dowels projecting from concrete shall be protected within one week after initial placing of concrete with a brush coat of neat cement mixed with water to a consistency, of thick paint. This coating shall be removed by lightly tapping with a hammer or other tool not more than one week before placing of the adjacent pour of concrete. Coated reinforcing steel shall be protected against damage to the coating. If the coating on the bars is damaged during transportation or handling and cannot be repaired, the same shall be rejected.

6.0 Workmanship

6.1. The work shall consist of furnishing and placing reinforcement to the shape and dimensions shown as on the drawings or as directed by The Engineer in charge.

6.2. Reinforcing steel shall conform accurate to the dimensions given in the bar bending schedules shown on relevant drawing

7.0 BENDING OF REINFORCEMENT

7.1. Bar bend g schedule shall be furnished by the Contractor and got approved by the Engineer before start of work.

7.2. Reinforcing steel shall conform to the dimensions and shapes given in the approved Bar bending Schedules.

7.3. Bars shall be bent cold to the specified shape and dimensions or directed by the Engineer using a proper bar bender operated by hand power to obtain the correct radius of bends and shape. Bars, shall not be bent or straightened in a manner that will damage parent material or the coating bars bent during transport or handling shall, be straightened before being used on work and shall not be heated to facilitate straightening.

8.0 PLACING OF REINFORCEMENT

8.1. The reinforcement cage should generally be fabricated in the yard at ground level, and then shifted and placed in position. The reinforcement shall be placed strictly, in accordance with the drawings and shall be assembled in position, only when structure is otherwise ready for placing of concrete. Prolonged time gap, between assembling of reinforcements and casting of concrete, which may result in rust formation on the surface, shall not be permitted.

8.2. Reinforcement bars shall be placed accurately in position as shown on the drawings. The bars, crossing one another shall be tied together at every intersection with binding wire (annealed), conforming to IS:280 to make the skeleton of the reinforcement rigid such that the reinforcement does not get displaced during placing of concrete, or any other operation. The diameter of binding wire shall not be less than 1 mm.

8.3. Bars shall be kept in. position usually by the following methods:

In case of beam and slab construction, industrially produced polymer cover blocks of thickness equal to the specified cover shall be placed between the bars and formwork subject to satisfactory evidence that the polymer composition is not harmful to concrete and

reinforcement. Cover blocks made of concrete may be permitted by the Engineer, provided they have the same strength and specification as those of the member.

8.4. In case of dowels for Columns and walls the vertical reinforcement shall be kept in position by means of timber templates with slots in them accurately, or with cover blocks tied to the Reinforcement Timber templates shall be removed after the concreting has progressed up to a level just below their location.

8.5. Layers of reinforcements shall be separated by spacer bars at approximately One meter intervals. The minimum diameter of spacer bars shall be 12 mm or: equal to maximum size of main reinforcement or maximum size of coarse aggregate, whichever is greater. Horizontal reinforcement shall not be allowed to sag between supports.

8.6. Necessary stays, blocks, metal chairs, spacers, metal hangers, supporting wires etc, or other subsidiary, reinforcement shall be provided to fix the reinforcements firmly in its correct position.

8.7. Use of pebbles, broken stone, metal pipe, brick, mortar or wooden blocks etc as devices for positioning reinforcement shall not be permitted.

8.8. Bars coated with epoxy or any other approved protective coating shall be placed on supports that do not damage the coating. Supports shall be installed in a manner such that planes of weakness are not created in hardened concrete. The coated reinforcing steel shall be held in place by use of plastic or plastic coated binding wires especially manufactured for the purpose.

8.9. Placing and fixing of reinforcement shall be inspected and approved by the Engineer before concrete is deposited.

9.0 Lapping

9.1. All reinforcement shall be furnished in full lengths as indicated on the drawing. No splicing of bars, except where shown on the drawing; will be permitted without approval of the Engineer. The lengths of the splice shall be as indicated on drawing or as approved by the Engineer. Where practicable, overlapping bars shall not touch each other, and shall be kept apart by 25 mm or 1 1/4 times the maximum size of coarse aggregate, whichever is greater. If this is not feasible, overlapping bars shall be bound with annealed steel binding wire, not less than 1 mm diameter and twisted tight in such a manner as to maintain minimum clear cover to the reinforcement from the concrete surface. Lapped splices shall be staggered or located at points, along the span where stresses are low.

10.0 Welding

10.1 Splicing by welding of reinforcement will be permitted only if detailed on the drawing or approved by the Engineer. Weld shall develop an ultimate strength equal to or greater than that of the bars connected.

10.2. While welding may be permitted for TMT reinforcing bars conforming to IS: 432, welding of deformed bars conforming to IS: 1786 shall in general be prohibited. Welding may be permitted in case of bars of other than S 240 grade including special. Welding grade of S 415 grade bars conforming to IS: 1786, for which necessary chemical analysis has been secured and the carbon equivalent (CE) calculated from the chemical composition using the formula: $CE = C + Mn + Cr + Mg + V + Ni + Cu \times 6.5$ is 0.4 or less.

10.3. The method of welding shall conform to IS: 2751 and IS: 9417 and to any supplemental specifications to the satisfaction of the Engineer

10.4. Bars shall be bent cold to the specified shape and dimensions or as directed by Engineer in charge using the proper bender tool, operated by hand or power to attain proper radius of bends. Bars shall not be bent or straightened in a manner that will injure the material. Bars bent during transport or handling shall be straightened before being used in the work. Bars shall not be heated to facilitate bending.

10.5. Unless otherwise specified a 'U' type hook at the end of each bar shall invariably be provided to main reinforcement. The radius of the bend shall not be less than twice the diameter of the round bar and the length of the straight part of the bar beyond the end of the curve shall be at least four times of the diameter of the round bar. In case of bars which are not round and in case of deformed bars, the diameter shall be taken as the diameter of circle having an equivalent effective area the hooks shall be suitably encased to prevent any spitting of the concrete.

10.6. All reinforcement bars shall be accurately placed in exact position shown on the drawings and shall be securely held in position during placing of concrete by annealed binding wire not less than 1 mm in size and by using say blocks or metal chairs spacers, metal hangers, supporting wires or other approved devices at sufficiently close intervals, Bars shall not be allowed to sag between supports not displaced during concreting or any other operations of the work All devices used for positioning shall be of not corrodible material wooden and metal supports shall not extended to the surface of the concrete, except where shown in drawings. Placing bars on layers of freshly laid concrete as the work progresses for adjusting bar spacing shall not be allowed. Pieces of broken stone or brick and wooden blocs shall not be used Layers of bars shall be separated by spacer bars pre- cast mortar blocks or other approved devices. Reinforcement after bending placed in position shall be maintained in a clean condition until completely embedded in concrete, Special care shall be exercised to prevent any displacement of reinforcement in concrete already placed. To prevent reinforcement form corrosion, concrete cover shall be provided as indicated on drawings. All bars protruding from concrete and to which other bars are to be sliced and which are likely to be exposed for a period exceeding 10 days shall be protected by a thick coat of neat cement grout

10.7. Bars crossing each other where required shall be secured by binding wire (annealed) of size not less than 1 mm in such a manner that they do not slip over at the time of fixing and concreting.

10.7. As far possible bars of full length shall be used In case this is not possible, overlapping of bars shall be done as directed by the Engineer in charge When practicable overlapping bars shall not touch each other, but be kept apart by 25 mm Where no feasible overlapping bars shall be bound with annealed wires not less than 1 mm thick twisted tight

The overlaps shall be staggered for different bars and located at points along the span where neither sheer not bending moments is maximum.

10.8. Whenever indicated on drawing or desired the Engineer in charge bars shall be jointed by coupling which shall have a cross section sufficient to transmit the full stresses of bars The end of the bars that are jointed by coupling shall be upset for sufficient length so that the effective cross section at the base of threads is not less than the normal cross section of the bar. Threads shall be standards threads Steel for coupling shall conform to IS 226.

10.8. When permitted or specified on the drawings joints of reinforcement bars shall butt- welded so as to transmit their full stresses Welded joints shall preferably be located at points when steel will not be subject to more than 75 percent of the maximum permissible stresses and welds so staggered that at any one section not more than 20 percent of the rods are welded Only electric are welding using a process which excludes air form the molten metal and conforms to any or other special provisions for the work shall be accepted Suitable means shall be provided for holding bars securely in position during welding It shall be ensured that no voids are left in welding and when welding is done in two or three stages previous surface shall be cleaned properly Ends of bars shall be cleaned of all loose scale

rust stages paint and other foreign matter before welding Only competent welders shall be employed on the work. The M S electrodes used for welding shall conform IS 814 Welded pieces of reinforcement shall be tested. Specimen shall be taken form the actual site and their number shall frequency to test shall be as directed by the Engineer in charge

11.0 MODE OF MEASUREMENTS & PAYMENT

11.1. For the purpose of payment the bar shall be measured correct up to 10 mm length and weight payable works out at the rate specified below

1.	6 mm.	0.22 Kg./Rmt.	8.	20 mm	2.47 Kg./Rmt.
2.	8 mm	0.39 Kg./Rmt.	9.	22 mm	2.98 Kg./Rmt.
3.	10 mm	0.62 Kg./Rmt.	10.	25 mm	3.85 Kg./Rmt.
4.	12 mm	0.89 Kg./Rmt.	11.	28 mm	4.83 Kg./Rmt.
5.	14 mm	1.21 Kg./Rmt.	12.	32 mm	6.31 Kg./Rmt.
6.	16 mm	1.58 Kg./Rmt.	13.	36 mm	7.99 Kg./Rmt.
7.	18 mm	2.00 Kg./Rmt.	14.	40 mm	9.86 Kg./Rmt.

11.1. Excess consumption over 5% will be charged at penal rate.

11.2. Reinforcement shall be measured in length **No Payment shall be made for overlaps separately** for different diameters as actually used in the work. Where welding or coupling is resorted to, in place lap joints, such joints shall be measured for payment as equivalent length of overlap as per design requirement. From the length so measured, the weight of reinforcement shall be calculated in Kg. on the same basis of as per table given above even though steel is supplied to the contractor by the department on actual weight. Length shall include hooks at the ends. Wastage, overlaps, couplings: welded joints, spacer bars, chairs, stays, hangers and annealed steel wire for binding shall not be measured and the cost of these items shall be deemed to be included in the rate for reinforcement.

11.3. The rate for reinforcement includes cost of steel binding wires, its carting from Department Store to work site with all leads and lifts (in case of it is supplied by department), cutting, bending, placing in position, binding and fixing in position as shown on the drawings and as directed. It shall also include all devices for keeping reinforcement in approved position, cost of joining as per approved method and all wastage and spacer bars.

The rate shall be for a unit of One Kg.

Item No. 21: Applying two coats of Birla or Asian acrylic lappy (putty) and two coats of primer of approved brand and manufacture on new wall surface to give an even shade including thoroughly brushing the surface free from mortar dropping and other foreign matter and sand papered smooth.

In general the work shall be carried out as per the relevant drawings and as per the instructions of Engineer in Charge. Work shall be carried out as per item description.

Scope of work includes cleaning off the entire surface, remove all loose particles, dust, scale, smoke, grease from the surface, sand the surface with Emery paper 180 and wipe clean, applying 2 coat of white Birla putty.

Material:

Birla Putty of Birla Make shall be confirm by EIC.

Workmanship:

The Birla Putty shall be of approved brand (Asian, or other approved). Plaster filler (Biral Putty) to be used for filling up uneven surfaces, small cracks and holes etc and it should be done as per the manufacturer's standard guide line. The whole process of paint required 2 times sand with 180 emery paper wipe off and 1 time sand with 320 emery paper wipe off.

Mode of measurement:

All the measurement shall be taken on net surface area actually painted; deduction will be made from the area for fixtures, grills, ventilation, elect boxes and such obstructions not painted, if they are individually more than 0.05 sq.m.

Rate:

Rate is to include for All materials of putty, sand paper, etc. with labour required for scaffolding, cleaning off the surfaces, cleaning the site after completion of job, etc. as directed by engineer in charge. Rate is for the net surface area of Painted surfaces in Square meter.

Item No 24: Providing and fixing window having extruded aluminum Colour anodized section frame main outer size 63.50 x 38.10 x 1.95 mm, @ Wt 1.094 Kg / Rmt, horizontal two track member size 61.85 mm x 31.75 mm x 1.20mm @ wt.of 0.695 Kg/mt, vertical member of size 61.85 mm x 31.75mm x 1.30 mm @ wt.of 0.659 Kg/mt with sliding shutters of horizontal member size 40mm x 18mm x 1.29mm @ wt.of 0.456Kg/mt, vertical member of size 40mm x 18mm x 1.29mm @ wt.of 0.456Kg/mt, @ Wt. 0.457 Kg/mt with 5 mm thick transparent bronze colour tinted float glass with powder coated aluminum fittings and fixtures and transparent silicon sealant glass fixing to frame as per details etc complete for window.

Material & Workmanship:-

Aluminium alloy used in the manufacturing of extruded section for windows shall confirm to HE9-WP of I.S 733 – 1956 and also hollow aluminium section confirm to IS designation HV9 – WP – IS – 1285 – 1958. Aluminium section of approved weight shall be procured at site. Fabrication shall be done as per I.S 1948 – 1961 & drawing or as directed. Details of the anodized powder coating section shall be **as shown in item of work and Tinted float glass shall be 5 mm thick**

Float Glass:

5 mm thick Tinted float glass as approved by Engineer-in-charge shall be used & shall be conforming to relevant I.S code. Necessary colour anodized aluminium glazing clips shall confirm to relevant IS code. Transparent Silicon Gasket and PVC track rubber shall confirm to quality approved by engineer in charge.

Fixtures & fastenings:

Fixtures and fastenings shall be provided as per requirement & as directed by Engineer in charge

Section used shall be single or double type as per requirement. Window - frame without shutter shall be prepared as per drawing or as directed by the Engineer – in – Charge. Whole framework shall be finished and erected in true line and level. The section shall be fixed with necessary screws & wooden peg nails required.

Size of glass for glazing at panels shall be as per drawing and shall be fixed in such a way so as to allow a clearance of 2.50 mm between the edges of glass and aluminium glazing clips surround clearance may be increased if directed. All stains from the surfaces of glass shall be removed and cleaned with thinner or spirit without any extra payment. Working of all hinges shall be smooth and free. If any hinges or locking arrangement found faulty, shall be replaced to the satisfaction of Engineer – in – Charge without claiming any extra charges. The size of mosquitoes proof jali at panels shall be as per drawing or as directed by Engineer-in-charge. The entire work shall be executed to the satisfaction of Engineer – in - Charge. The window shall be fully sliding as per drawing or as directed by Engineer – in – Charge

CONDITIONS FOR ALUMINUM WORKS

(a) The glazing shall be fixed with the External finished surface (either stone cladding/external plaster) and hence all the necessary rubber strips, packing and polysulphide polymer (between the frame and concrete or other surface all around) shall be provided within the rate quoted so as to make the junctions fully water tight/air tight.

(d) Approved make selected glass of thickness as specified shall be used in doors. Wired glass louvers shall be provided wherever shown on drawings.

(e) Necessary locking arrangement of approved design (by Architect) shall be provided without any extra cost.

(f) Wherever necessary, PVC lining (silver grey or white only) etc. shall be provided for air/water tightness.

(g) Necessary operating device (as per design) for operation of louvers of windows, ventilators, sky lights, including necessary rods shall be provided without any extra cost.

(h) The rates quoted shall be inclusive of manufacture, supply and installation at Site, and inclusive of all the necessary accessories rubber strips, locks, rods, excise duty, taxes, octroi, transport, labour charges, insurance, storage and safe custody, etc. complete.

(i) The rates shall also be inclusive of providing and applying with gun as per latest I.S., of Dow Corning or equivalent and making the joints around glazing watertight, on the external periphery of the building at the junction of two different materials as directed by the Architect and site engineer.

(j) Necessary provision for rain water disposal shall be done in the bottom guides/frames as directed and approved by Architect.

(k) Work must be in accordance with detailed drawings with dimensions of aluminum sections in frames and shutters as shown in drawing. It shall be accompanied by the detailed drawing if any deviation is proposed.

(l) All the door shutters shall have double action hydraulic floor springs/hinges as per approved shop drawings, of approved make with minimum one year guarantee. The floor springs shall be of least possible thickness.

(m) Details/arrangements for after sales/maintenance services shall be furnished.

- (n) Work shall be carried out in co-operation and in coordination with all other agencies working at Site.
- (o) The civil work as required for fixing of floor springs, hold fast or other works required for the erection and completion of doors/windows etc. shall be done by the Contractor without any extra cost.
- (p) Any damage, if caused to the existing work done by other agencies, shall be reinstated by the Contractor to its original condition without any extra cost.
- (q) During the course of work, the Contractor shall pay due care to avoid any stains on the powder coating work and if required, the Contractors shall provide necessary protective arrangement as directed by the Architects for which no extra payments shall be made. After the installation is completed, if required by the Architects, the aluminum work shall be washed with mild solution of non alkali soap and water.
- (r) The Contractor shall be responsible for the windows/doors/grills etc. being set straight, in plumb level and for their satisfactory operations after the fixing is completed.
- (s) Wherever required and as directed strengthening of members shall be done by providing steel/M.S. concealed members without extra cost.
- (t) The door shutters may have hydraulic door closer of approved make with minimum one year guarantee as and where shown in the drawings and as directed.

Mode of measurement & payment:

The rate for window shutter with frame shall include the cost of materials & labour involved to finish the work.

The dimension of the window shall be measured clear size of the frame in closed position of shutter between the two outer edges of the frame.

The payment shall be made on completion of work.

The unit rate for the item shall be for a unit of one square meter.

Item No 25: Providing and fixing standard extruded of aluminium section of size 63mm x 38.10mm x 1.2mm @ Wt. 0.643 Kg/mt with colour anodized aluminium frame for ventilation with 5 mm thick frosted glass as details etc complete for Ventilation

VENTILATION:

Aluminum extruded sections (anodized or powder coated) are used for providing Louvers in aluminum door, window & partition for ventilation.

Fabrication:

First of all shop drawings for each type of doors/windows/ventilators etc. shall be prepared by using suitable sections based on architectural drawings, adequate to meet the requirement/specification and by taking into consideration varying profiles of aluminium sections being extruded by approved manufacturers. The shop drawings shall show full size sections of glazed doors, windows, ventilators etc. The shop drawings shall also show the details of fittings and joints. Before start of the work, all the shop drawings shall be got approved from the Engineer-in-Charge.

Actual measurement of openings left at site for different type of door/window etc. shall be taken. The fabrication of the individual door/windows/ ventilators etc. shall be done as per the actual sizes of the opening left at site. The frames shall be truly rectangular and flat with regular shape corners fabricated to true right angles. The frames shall be fabricated out of section which have been cut to length, mitered and joined mechanically using appropriate machines. Mitered joints shall be corner shall be corner crimped or fixed with self tapping stainless steel screws using extruded aluminium cleats

of required length and profile. All aluminum work shall provide for replacing damaged/broken glass panes without having to remove or damage any member of exterior finishing material.

GLAZING:

Glass in doors, windows, glazing and ventilators shall be 5 mm thick or as specified float glass, clearer, tinted or reflective as mentioned in the item, and shall be approved quality stains, scratches, bubbles and flaws of any kind and shall be properly cut to fit framed and mullions. All windows and ventilators shall be glazed from outside with snap fit anodized aluminum heading and EDPM/ gasket lining complete. The buildings shall be snap fit and shall be fitted without use of screws. No screws other than those on some of the hardware shall be visible.

Measurements:

Length and width of the shutters incl. all aluminum section frames incl. snap beadings shall be measured to the nearest cm in closed position. Overlap of two shutters shall not be measured.

All work shall be measured net as fixed and area calculated in square metres to nearest two places of decimal. No deduction shall be made for providing venetian opening and opening for glazing.

Rate:

The rate includes the cost of material and labour involved in all the operations described above per Square meter of work done. Glazing shall be measured and shall be included in the area. The area shall be calculated to the nearest 0.01 sq.m.

The rate shall include the cost of all the materials, labour involved in all the operations as described in nomenclature of item and particular specification.

Item No 26: providing and fixing 30 mm thick solid core flush type door having outer frame 5" thick teak wood frame with all core should be teak wood Patti and both side decorative 4.0MM thick teak veneer finished(with pu polish and fixed with granite framing include 150mm top and bottom s.s. pivot and s.s. screws)and europa make tubular lock system including as per architect instruction etc(flush door basic rate should be 160 rs /sq.ft and veneer basic rate 95 rs/sqft). Complete

FOR FRAMES

The frame shall be prepared from Green Marble stone slab as per item description

2.0. Workmanship :

2.1. All members of the frames shall be exactly at right angles. The right angle shall be checked from inside surface of the respective members.

2.2. All members of frames shall be straight without any warp or bow and shall have smooth surface well planed on the three sides exposed at right angles to each other. The surface touching the wall may not be planed unless it is required in order to straighten up the member or to obtain the overall size, within the tolerances specified.

FOR SHUTTERS

2.2. Shutters:

2.3.1 The shutter shall be flush door of specified thickness. The shutter shall be covered with 9 mm thick marine ply & finished with 4 mm thk veneer finished with PU polish on both sides of brand & pattern shall be as shown in the drawing or as directed.

2.3.2 The teak wood moulding shall be provided on shutter as per detailed drawings.

2.3.3 Stainless steel hands, studs, and laminated shall be carried out as per detailed drawing / as directed by Architect office.

2.5. Fixtures & Fastenings: 2.5.1. The hinges shall be of stainless steel. The hinges, bolts, and other items of stainless steel with moving parts shall be properly oiled by the contractor before handing over the building. The rate shall include SS hinges including fixing with screws. The size and number of hinges shall be as per table given in annexure-1. All fixtures and fastening shall be as per detailed item description.

3.0. Mode of measurements & payment:

3.1. The rate for shutter with frames and painting includes cost of providing block and clear for keeping the shutter in open position as directed.

3.2. The dimensions of the door shall be measured clear size of the opening.

3.3. The rate shall be for a unit of **one sq. metre.**

Item No 27: Providing and fixing FRP frame size 100x50 mm and 28mm thick FRP depress panel shutter having extra reinforcement on sides & edges in Gel coat finish. The core of the shutter & frame is to be filled up with injected fire retardant grade polyurethane foam done in situ alongwith embedded wooden pieces for stiffening & also taking hinges & fixtures. The whole FRP frame & shutter is to be water proof weather proof, termite proof & resistance to mild acid/alkali. Rates are to be inclusive of S.S hinges with necessary screws & aluminium fixtures & fastenings & fastener sleeve.

1. Materials:

1.1. materials required Providing and fixing double shutter f.r.p. door for shall conform by EIC .

2.0 Workmanship: The item covers the requirement of preparation of shutters for doors, windows, clerestory windows, their supply and fixing.

2.2. Timber panelling:

2.2.1 double shutter f.r.p. door frame 100 x 50 mm size and 28 mm thick shutter with 3.2 mm high dencified molded wood fiber skin with steel hinges finish, enamel paint as approved by this office.

2.2.2 The faces of the panel as well as various pieces of the panel shall be closely filled to the sizes of the grooves.

2.2.3. Finishings of the corners of raised panel edges shall be done as shown in drawings or as directed.

2.4. Fixtures & Fastenings:

The rate shall include anodised aluminium butt hinges including fixing with iron screws. The size and number of hinges shall be as per table given in annexure-1.

4 Mode of measurements & payment:

5 The rate for shutter includes cost of providing block and clear for keeping the shutter in open position as directed.

6 The dimensions of the shutter shall be measured clear size of the shutter in close position between the grooves of the frame.

6.0. The rate shall be for a unit of one sq. metre.

Item No. : 30 Pro. And fixing single layer water proof gypsum board 12.5 mm thick sections using water proof board of size 1220 mm x 1830 mm x 8.0 mm suspended by GI suspender channel of size 25 mm x 3 mm with intermediate channel of size 18 mm x 40 mm x 0.8 mm at 1220 mm center to center ceiling section of size 40 mm x 35 mm x 0.55 mm at 457 mm c/c and perimeter channel A of size 20 mm x 27 mm x 30 mm x 0.5 mm at edges & drops incl.paper tap sand sofit cleat, anchor fastener, scotch bolt connecting cleat,joining compound top coat on ceiling incl.making necy.opening for light fitting,diffuser etc. comp. as per detail drawing as directed

In general the work shall be carried out as per the standard specifications and as per the instructions of Engineer in Charge. Work shall be carried out as per item description.

The relevant specification shall be followed but for 12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- (Part I) :2011.

136 Material & workmanship:

Frame:

The frame work shall be made as described in the item above. Gypsum Board Gypsum Board is formed by enclosing and bonding together a core gypsum plaster (a calcium sulphate mineral) with or without fiber between two sheets of highly durable paper. The gypsum boards shall be non- resonant, dimensionally stable and possesses flame retardant qualities. The boards shall conform to IS : 2095 and gypsum plaster shall conform to IS:2547. The surfaces of the board shall be true and free from imperfection that would render the board unfit for use with or without decoration. Types Gypsum plaster boards are classified according to their use. Gypsum Wall Board with Reduced Water Absorption Rate These boards have additives in the core and / or the paper liners to reduce the water absorption rate. They may be suitable for special applications in buildings where reduced absorption properties are required to improve the performance of the board. Unless stated otherwise, decoration may be applied to the face. Gypsum Wall Board with Improved Core Cohesion at High Temperatures These boards have mineral fibers and / or other additives in the gypsum core to improve core cohesion at high temperatures. They have a face suitable for direct decoration. Gypsum Plaster Base Board These boards have a face suitable to receive gypsum plaster and may be perforated during primary manufacture. Gypsum Plaster Base Board with improved Core Cohesion at High Temperatures These boards have mineral fibers and / or other additives in the gypsum core to improve core cohesion at high temperatures. They have a face suitable to receive gypsum plaster and may be perforated during primary manufacture. Physical Requirements Dimensions The width, length and thickness of the boards shall be as given in Table 6. The lengths of the two longitudinal of the boards shall not differ more than + 3 mm per meter length of the diagonal.

Tolerance

The tolerance on dimension shall be as given below: -

Type	Tolerance in mm on		
	Width	Length	Thickness
Gypsum Wall Board	0 to – 5	0 to –6	+ 0.6
Gypsum Base Board			
Non-perforated	0 to –8	0 to –6	+ 0.6
Perforated	0 to –8	0 to –10	+ 0.6

Transverse Strength

Breaking load for gypsum plaster boards, shall be in accordance with Table 5 given below:

TABLE 5 : Breaking Load of Gypsum Plaster Boards

Type of Board	Thickness mm	Breaking load, Transverse Direction N	Min. Longitudinal Direction N
(1)	(2)	(3)	(4)
Plaster Board	9.5	140	360
	12.5	180	500
	15.0	220	650
Base Board	9.5	123	180
	12.5	165	235

TABLE 6 : Dimensions of Gypsum Plaster Boards

Type of Board	Width inmm	Length inmm	Thicknessmm
(1)	(2)	(3)	(4)
Wall Board	600, 900 and 1200	1800 to 3600 in steps of 100 mm	9.5, 12.5 and 15
Base Board	400 and 900	1200, 1500 and 1800	9.5 and 12.5

Rabbit Wire Mesh:

Rabbit Wire mesh shall then be fixed to the underside of wooden strips and their junctions with the battens with nails at pitch of 15 to 20 cm as ordered by the Engineer-in-Charge. The rabbit wire mesh shall be straight, tight and perfectly true to planes and slopes and without any sagging and shall be slightly below the underside of the laths to allow the plaster to encase the metal round.

Plaster Of Paris:

The plaster of Paris shall be of the calcium-sulphate semi-hydrate variety. Its fineness shall be such that when sieved through a sieve of IS sieve designations 3.35 mm for ten minutes after drying the residue left on it shall be not more than 1% by weight. It shall not be too quick setting. Initial

setting time shall not be less than 13 minutes. The average compressive strength of material determined by testing 5 cm cubes after removal from moulds, after 24 hours and drying in an oven at 40 degree C till weight of the cubes is constant, shall not be less than 84 kg per square meter.

Applications:

The material will be mixed with water to a workable consistency. Plaster of Paris shall be applied to the underside of the laths over the rabbit wire mesh in suitable sized panels and finished to a smooth surface by steel trowels. The plaster shall be applied in such a manner that it fully fills the gaps between the laths and the thickness over the laths is as specified in the description of the item. The joints shall be finished flush to make the ceiling in one piece. The finished surface shall be smooth and true to plane, slopes or curves as required.

Mode of measurement & payment:

Length and breadth of superficial area the finished work shall be measured correct to a cm. Area shall be calculated in square meter correct to two places of decimal. No deduction will be made of openings of area up to 40 square decimeter nor shall extra payment be made either for any extra material or labour involved in forming such openings.

For openings exceeding 40 square decimeter in area, deduction in measurements shall be made but extra will be payable for any extra material or labour involved in making such openings.

Curved surfaces shall also be measured and paid as flat surfaces.

Any sunk or raised moulding in the plaster shall be included and not paid for separately.

The rate shall include the cost of all materials and labour involved in all the operation described above including all scaffolding, staging etc. The frame work mentioned as above supporting the ceiling will be included.

The rate includes all raised or sunk moulding or for any patterned finishing of the surface.

The rates include all materials, labour, tools and plants in satisfactory completion of work as specified above.
The rates shall be for unit of one Sq.mt. of finished work in plan.

Item No. 33: Providing and fixing concealed center point to wall ceiling & floor CPVC (SDR 13.5) PIPE having National Sanitation Foundation (NSF) seal for potable water of following dia. nominal bore tube fittings and clamps including making good the wall, ceiling and floor etc. complete.[A] 15 mm.

In general, the work shall be carried out as per the standard specifications of P.W.D. / C.P.W.D./ GWSSB relevant drawings and as per the instructions of Engineer in Charge. The work shall be carried out as per item description.

U.P.V.C. Pipes

Pipes shall conform to IS 13592: 1992 (Type A). The internal and external surfaces of the pipes shall be smooth and clean and free from grooving and other defects. The end shall be clearly cut and shall be square with the axis of the pipe. The end may be chamfered on the plain sides. Slight shallow longitudinal grooves or irregularities in the wall thickness shall be permissible provided the wall thickness remain within the permissible limit.

Colour of Pipe:

Surface colour of the pipes shall be as specified.

Marking:

Each pipe shall be clearly and indelibly marked with the following information at intervals not more than 3 meter.

- (a) Manufacturer's name or trade mark.
- (b) Nominal outside dia of pipe.
- (c) Type 'A'
- (d) Batch number.

The pipe may also be marked with standard mark.

Dimensions:

UPVC water pipes shall be of the dia, as specified and shall be in nominal lengths of 2,3,4 or 6 meters either plain or with sliding / grooved socket, unless shorter lengths are required at junctions with fittings. The sizes, weights, sockets and tolerances of pipes shall be as shown in Table 1,2,3 &

4. Tolerance on specified length shall be + 0.10mm.

TABLE -1 DIMENSIONS OF PIES

(All dimensions in mm)

Nomin al Outsid e Diamete r	Mean Outside Diameter		Outside Diameter at any Point		Wall Thickness S Type A	
	M in	M ax	M in	M ax	M in	M a x
25	20	20.3	24.5	25.5		
32	32	32.3	31.5	32.5		
40	40	40.3	39.5	40.5		
50	50	50.3	49.4	50.6	1.4	1.8
63	63	63	63	63	1.	1

	3	.3	2. 2	.8	5	. 9
75	7 5. 0	75 .3	7 4. 1	75 .9	1. 8	2 .2
100	1 1 0. 0	11 0. 4	1 0 8. 6	11 1. 4	2. 1	2 .6

TABLE -2

MINIMUM WALL THICKNESS OF SOCKETS ON PIPES

(All dimensions in mm)

Nominal Outside Diameter	S 2 Min Type A	S 3 Min Type A
75	1.6	1.0
110	2.0	1.2

TABLE -3

DIMENSIONS FOR SLIDING SOCKETS

(All dimensions in mm)

Nominal Outside Diameter	Socket Depth, C	Mean Inside Diameter of Socket at Midpoint, DI	
		Min	Max
25	19.0	25.1	25.3
32	22.0	32.1	32.3
40	26.0	40.1	40.3
50	31.0	50.1	50.3
63	37.5	63.1	63.3
75	43.5	75.1	75.3
110	61	110.1	110.4

TABLE -4

DIMENSIONS OF GROOVED SOCKET

(All dimensions in mm)

Nominal Outside Diameter	Inside Diameter of Socket, D1	Inside Diameter of Beading, D2	Length of Beading and Neck	Neck of B	Length of beading beyond beading C
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					A		
	M i n	M a x	M i n	M a x	M i n	M a x	M i n
7 5	7 5 3	7 6 2	8 4 5	8 5 5	2 0	5	3 5
1 1 0	1 1 0 4	1 1 1 3	1 2 0 3	1 2 1 3	2 6	6	3 2

Fixing and Jointing

Pipes shall be either fixed on face of wall or embedded in masonry as specified.

Plain pipes shall be secured to the walls at all joints with PVC pipe clips by means of 50 x 50x 50 mm hard wood plugs, screwed with MS Screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement: 4 coarse sand). The clips shall be kept about 25mm clear off finished face of wall, so as to facilitate cleaning of pipes.

Pipes shall be fixed perfectly vertical or to the lines as directed. The pipes shall be fitted to fittings with seal ring conforming to IS: 5382 allowing 10mm gap for thermal expansion.

Installation in Wall/Concrete:

The walls/concrete slots should allow for a stress-free installation. Pipes and fittings to be inserted into the slots without a cement base, have to be applied first with a thin coat of PVC solvent cement followed by sprinkling of dry sand (medium size) and then allowed to dry. The process gives a sound base for cement fixation. This process is repeated while joining PVC material to CI/AC materials.

Fittings:

Fittings used shall be of the same make as that of the PVC pipes and shall have a minimum wall thickness of 3.2mm. The fittings shall be supplied with proved socketed ends with square grooves and provided with Rubber Gasket conforming to IS: 5382. The plain ends of the fittings should be chamfered. The fittings shall be joined with the help of Rubber lubricant.

Note: These pipes shall be used only in shaft or unexposed location to avoid damage to these pipes due to willful act.

Method of Measurement and Payment

The measurement shall be recorded in running meter of pipe length laid along the centerline of axis of pipeline including tees, enlarges, reducers and bends, correct up to 0.01 m length. No payment shall be made for overlaps etc. The payment shall be made after completion of whole made item as mentioned in price bid on Running Meter basis and 15% shall be withheld for satisfactory hydraulic testing.

The rate includes cost of all materials, tools, plants and labour involved in satisfactory completion of work as specified above.

The rate shall be for a unit of one Rmt of actual work done.

Item No. 34: Providing and fixing concealed center point to wall ceiling & floor CPVC (SDR 13.5) PIPE having National Sanitation Foundation (NSF) seal for potable water of following dia. nominal bore tube fittings and clamps including making good the wall, ceiling and floor etc. complete. [C] 25 mm.

Specification Same as per item no. 33

Item No. 35: Providing laying and jointing in true line and level 40 mm dia. U.P.V.C. Pipe (SCH -40) line including fittings approved by Engineer In charge. Pipe shall be fixed on the wall with the help of clamp at every two meter C/C or shall be concealed as directed including necessary fittings etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials.

Specification Same as per item no. 33

Item No. 36: Providing laying and jointing in true line and level 110 diameter U.P.V.C. SWR Type B pipe conforming to IS 13592-1992 with one end plain and other end socketed with rubbering, & fitting conforming to ISI 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed on wall using of PVC clamp of the size 110 mm diameter x 149 mm length x 145 mm high at every 2000 mm centre to centre or shall be concealed in walls as directed including necessary fittings such as bends, shoes etc. including testing of pipes and joints and jointed with adhesive solvent cement including cost of all materials.

Specification Same as per item no. 33

Item No. 45: providing and fixing Single Lever Tall Basin Mixer (Johnson T6146C) with on water supply pipe lines of 15mm dia with or with extension piece but with a flange etc. complete to the satisfaction of EIC and approved Johnson/ cera make.

Scope of Work: Providing, fixing and commissioning of Chrome Plated (CP) Brass Single Lever Tall Basin Mixer (specifically Johnson Model: T6146C or approved Cera make) suitable for countertop/table-top wash basins. The work includes connecting the mixer to 15mm nominal bore water supply lines, including all necessary accessories, to the entire satisfaction of the Engineer-in-Charge (EIC).

1. Technical Standards & Make

- **Approved Make:** Johnson (Model Ref: T6146C) or equivalent approved make such as Cera, as per the Engineer-in-Charge (EIC) discretion.
- **Material Composition:** The body must be cast from high-quality virgin brass ingots to ensure durability and resistance to de-zincification.
- **Finish:** High-quality Chrome Plating (minimum 10 to 15 microns) providing a mirror-finish, salt spray tested to withstand corrosive environments.

2. Material Specifications: Components and Accessories

- **Cartridge:** High-performance ceramic disc cartridge for smooth, drip-free operation, tested for a minimum of 300,000 cycles.
- **Aerator:** Integrated honeycomb-structured aerator to provide a splash-free, foam-flow stream while optimizing water consumption.
- **Inlets:** Braided stainless steel flexible hoses (350mm to 450mm length) of 15mm nominal bore, capable of withstanding high pressure and temperature variations.
- **Extension & Flange:** Provision and fixing of CP extension pieces (where required for height adjustment) and a heavy-duty CP wall flange to cover the pipe-to-fitting junction.
- **Body Material:** The fixture must be cast from high-grade virgin brass ingots to ensure longevity and resistance to de-zincification.
- **Finish:** High-quality Chrome Plating (conforming to IS: 4827) with a minimum thickness of 10-15 microns to ensure a salt-spray resistant, mirror-finish surface.

3. Installation & Accessories:

- **Supply Connections:** The rate includes providing and fixing two heavy-duty stainless steel braided flexible hoses (15mm dia) of required length.
- **Extensions & Flanges:** Provision of CP brass extension pieces and decorative CP flanges to cover the junction of the pipe and the mixer, ensuring a neat and aesthetic finish.
- **Sealing:** Use of food-grade rubber gaskets and O-rings at the base of the mixer to prevent any water seepage into the vanity or countertop.

4. Workmanship and Acceptance

- The installation must be carried out by a skilled plumber.
- Any damage to the washbasin or countertop during installation shall be rectified by the contractor at no extra cost.
- **Final Approval:** The work shall be completed to the entire satisfaction of the Engineer-in-Charge (EIC). The contractor must provide the manufacturer's warranty card to the department upon completion.

5. Key Technical Compliance & Audit Points:

- **Standard:** The product must strictly comply with **IS: 8931** (Copper alloy fancy single taps and combination tap assembly).
- **Performance:** The mixer must operate efficiently under a working pressure range of 0.5 bar to 5.0 bar.
- **Warranty:** The contractor must submit the manufacturer's warranty card (minimum 10 years for leakage/manufacturing defects) to the Department upon completion.
- **Rate Inclusion:** The quoted rate is comprehensive and includes the cost of the main fixture, all internal/external accessories, labor for fixing, testing, wastage, and all applicable taxes (GST).
- **Testing:** Final payment shall be processed only after a successful leak-test under static pressure conducted in the presence of the department's technical representative.
- **Unit of Measurement:** The payment will be made per "Number" (Each piece successfully installed and tested).

6. Acceptance Criteria: The item will be accepted only if it bears the original br and marking and is found to be in pristine condition without any scratches or plating defects. The final installation must be aesthetically aligned and functionally perfect as per the EIC's instructions.

Item No. 46: providing and fixing Single Lever wall mount Tap (Johnson T6086C) with concealed body for wall mounted (Johnson T0068C) with on water supply pipe lines of 15mm dia with or with extension piece but with a flange etc. complete to the satisfaction of EIC and approved Johnson/ cera make.

Scope of Work: Providing, fixing and commissioning of Chrome Plated (CP) Brass Single Lever Wall Mounted Basin Mixer with Concealed Body (specifically Johnson Model: T6086C for Upper Part and T0068C for Concealed Body, or approved Cera make). The work includes fixing the concealed body inside the wall and the exposed parts (Handle & Spout) after tiling, connecting to 15mm nominal bore water supply lines with all necessary accessories, to the entire satisfaction of the Engineer-in-Charge (EIC).

1. Technical Standards & Make

- **Approved Make:** Johnson (Exposed: T6086C | Concealed: T0068C) or equivalent approved make such as Cera, as per the Engineer-in-Charge (EIC) discretion.
- **Material Composition:** The main concealed body and the external spout must be cast from high-quality virgin brass ingots to ensure durability and resistance to de-zincification (rust-proof).
- **Finish:** High-quality Chrome Plating (minimum 10 to 15 microns) providing a mirror-finish, salt spray tested to withstand corrosive environments and prevent tarnishing.
-

2. Material Specifications: Components and Accessories

- **Concealed Body:** Heavy-duty brass body designed for in-wall installation with high-precision threading for leak-proof joints.
- **Cartridge:** High-performance ceramic disc cartridge for smooth, drip-free operation, tested for a minimum of 300,000 cycles.
- **Aerator:** Integrated honeycomb-structured aerator in the spout to provide a splash-free, foam-flow stream while optimizing water consumption.
- **Spout & Handle:** Ergonomically designed CP brass spout and single-control lever for easy operation of water flow and temperature.
- **Flange:** Heavy-duty decorative CP wall flanges to neatly cover the junction where the spout and handle meet the tiled wall.

3. Installation & Accessories

- Internal Fixing: The concealed body must be installed at the correct depth within the wall masonry/groove before plastering and tiling. It must be perfectly leveled.
- Supply Connections: Connection to 15mm dia supply lines using standard brass fittings, ensuring all internal joints are sealed with high-quality Teflon tape or sealants.
- Protection: The plastic protection cover (sleeve) provided with the concealed body must remain in place until the tiling work is complete to prevent cement/dust entry.
- Sealing: Use of high-grade rubber gaskets and silicone sealants where necessary to ensure no water seeps behind the tiles.

4. Workmanship and Acceptance

- Skilled Labor: The installation must be carried out by a skilled plumber experienced in concealed plumbing systems.
- Damage Control: Any damage to the wall tiles, plaster, or the fixture during installation shall be rectified by the contractor at no extra cost.
- Final Approval: The work shall be completed to the entire satisfaction of the EIC. The contractor must provide the manufacturer's warranty card upon completion.

5. Key Technical Compliance & Audit Points

- Standard: The product must strictly comply with IS: 8931 (Copper alloy fancy single taps and combination tap assembly).
- Performance: The mixer must operate efficiently under a working pressure range of 0.5 bar to 5.0 bar.
- Warranty: The contractor must submit the manufacturer's warranty card (minimum 10 years for leakage/manufacturing defects) to the Department.
- Rate Inclusion: The quoted rate is comprehensive and includes the cost of the concealed body, exposed parts (handle/spout), extension pieces, flanges, labor, pressure testing, and all applicable taxes (GST).
- Testing: Final payment shall be processed only after a successful pressure test of the concealed part (before tiling) and a final leak-test of the exposed parts.
- Unit of Measurement: The payment will be made per "Number" (Each Set) successfully installed and tested.

6. Acceptance Criteria

The item will be accepted only if it bears the original brand marking and is found to be in pristine condition without any scratches, dents, or plating defects. The final installation must be aesthetically aligned, plumb, and functionally perfect as per the EIC's instructions.

Item No. 47: providing and fixing cp BRASS Bathroom 3 Inlet Single Lever High Flow Concealed Diverter make-Johnson (T3439C) with concealed body (Johnson T0066C) quarter turn of approved Johnson/ cera make and as approved by the consultants.

Scope of Work: Providing, fixing and commissioning of Chrome Plated (CP) Brass 3-Inlet Single Lever High Flow Concealed Diverter (specifically Johnson Model: T3439C for Upper Part and T0066C for Concealed Body, or approved Cera make). The work includes internal piping integration, fixing the concealed body inside the wall, and installing the exposed lever/plate after tiling, to the entire satisfaction of the Engineer-in-Charge (EIC) and Consultants.

1. Technical Standards & Make

- Approved Make: Johnson (Exposed: T3439C | Concealed Body: T0066C) or equivalent approved make such as Cera, as per the EIC/Consultant's discretion.
- Material Composition: The internal concealed body must be cast from high-grade virgin brass for maximum pressure resistance and durability.
- Finish: The exposed plate and lever must have high-quality Chrome Plating (minimum 10 to 15 microns) providing a mirror-finish, salt spray tested for long-lasting shine.

2. Material Specifications: Components and Accessories

- 3-Inlet Body (High Flow): The concealed part (T0066C) must have three inlets (Hot, Cold, and Overhead Shower/Spout) designed for high-flow water discharge, suitable for bucket filling and overhead showers.
- Cartridge: Equipped with a high-performance ceramic disc cartridge for smooth, quarter-turn or single-lever operation, tested for 300,000+ cycles.
- Diverter Mechanism: Must feature a smooth-functioning diverter button/lever to switch water flow between the spout and the overhead shower.
- Wall Plate: A heavy-duty CP brass or stainless-steel decorative flange/plate to cover the concealed assembly neatly on the tiled surface.

3. Installation & Accessories

- Concealed Fixing: The internal diverter body must be fixed securely inside the wall at the recommended depth before plastering. It must be perfectly vertical and horizontal (leveled).
- Supply Connections: Connection to 15mm dia supply lines using brass/CPVC fittings. All joints must be tested for leakages under high pressure before tiling.
- Protection: The manufacturer-provided protective sleeve must remain on the body during construction to prevent debris/cement from damaging the cartridge.

4. Workmanship and Acceptance

- Skilled Installation: The work must be performed by a skilled plumber. The alignment of the lever and plate must be aesthetically perfect.
- Rectification: Any damage to the wall, waterproofing, or tiles during installation shall be repaired by the contractor at no extra cost.
- Final Approval: The system must be demonstrated to the EIC to ensure the diverter switches correctly between the shower and spout without any internal mixing or leakage.

5. Key Technical Compliance & Audit Points

- Standard: The product must strictly comply with IS: 8931 (Copper alloy fancy single taps and combination tap assembly).
- Performance: Designed to work efficiently even at low pressure, but capable of handling high-flow requirements.
- Warranty: The contractor must submit the manufacturer's warranty card (minimum 10 years for leakage/manufacturing defects) to the Department.
- Rate Inclusion: The quoted rate is comprehensive and includes the concealed body, exposed lever/plate, internal jointing materials, labor, pressure testing, and all applicable taxes (GST).
- Testing: Static pressure testing is mandatory for the concealed part before the wall is closed.
- Unit of Measurement: The payment will be made per "Number" (Each Set) successfully installed and tested.

6. Acceptance Criteria

The item will be accepted only if it bears the original brand marking (Johnson/Cera) and is free from any surface scratches or manufacturing defects. The final installation must be functionally perfect and aesthetically aligned with the bathroom's interior as per the EIC's instructions.

Item No. 49: providing and fixing cp BRASS Bathroom 3 Inlet Single Lever High Flow Concealed Diverter make-Johnson (T3439C) with concealed body (Johnson T0066C) quarter turn of approved Johnson/ cera make and as approved by the consultants.

Scope of Work: Providing, fixing and commissioning of Chrome Plated (CP) Finish Health Faucet / Hand Shower set (specifically Johnson Model: S3248C, or equivalent approved make). The work includes fixing the faucet head, 1.0-meter-long flexible tube, wall hook/bracket, and CP flange, connected to the water supply point, to the entire satisfaction of the Engineer-in-Charge (EIC) and Consultants.

1. Technical Standards & Make

- Approved Make: Johnson (Model: S3248C) or equivalent approved make as per the EIC/Consultant's discretion.
- Material Composition: The faucet body must be manufactured from high-quality engineering-grade material/brass to ensure durability and resistance to high water pressure.
- Finish: High-quality Chrome Plating (CP) to provide a smooth, mirror-finish that is easy to clean and resistant to corrosion.

2. Material Specifications: Components and Accessories

- Faucet Head: Ergonomically designed spray head with a smooth trigger operation for controlled water flow.
- Flexible Tube: 1.0-meter-long heavy-duty PVC/braided tube (approx. 8mm internal dia) capable of withstanding high pressure and frequent twisting without leakage or bursting.
- Wall Hook / Bracket: A sturdy wall-mounted hook/holder made of CP ABS or Brass to securely hold the faucet head when not in use.
- Flange: A decorative CP wall flange to cover the connection point where the tube meets the water supply outlet.

3. Installation & Accessories

- Supply Connection: The faucet must be connected to the 15mm Dia water supply point (Angle Valve) using a leak-proof washer and Teflon tape.
- Mounting: The wall hook must be fixed at a convenient height and position as per the site requirement using SS screws and PVC grip plugs.
- Sealing: All joints must be perfectly watertight to prevent any dripping or seepage.

4. Workmanship and Acceptance

- Installation: The work must be carried out by a skilled plumber. The faucet head must be easy to operate, and the tube should be free from kinks or tangles.
- Rectification: Any damage to the wall tiles or the fixture during installation shall be rectified by the contractor at no extra cost.
- Final Approval: The work shall be completed to the entire satisfaction of the EIC. The contractor must ensure the trigger mechanism works smoothly under actual water pressure.

5. Key Technical Compliance & Audit Points

- Standard: The product must meet the standard performance requirements for sanitary fittings.
- Performance: The trigger and tube must be tested to withstand standard domestic water pressure without any bulge or leakage.
- Warranty: The contractor must submit the manufacturer's warranty card to the Department upon completion of the work.
- Rate Inclusion: The quoted rate is comprehensive and includes the Health Faucet head, 1m flexible tube, wall hook, CP flange, SS screws, labour, testing, and all applicable taxes (GST).
- Unit of Measurement: The payment will be made per "Number" (Each Set) successfully installed and tested.

6. Acceptance Criteria

The item will be accepted only if it bears the original brand marking and is found to be in pristine condition without any scratches or defects. The final installation must be functionally perfect and aesthetically aligned as per the EIC's instructions.

Item No. 54: Providing erecting and fixing double coated ISI water tank of required capacity each with all necessary fittings and connection etc. complete on terrace.

Scope of Work: Providing, erecting, and fixing of Double Coated Polyethylene Water Storage Tank (ISI Marked) of required capacity on the terrace. The work includes hoisting the tank to the terrace, providing and fixing all necessary inlet, outlet, overflow, and washout fittings, and making all required pipe connections, complete to the entire satisfaction of the Engineer-in-Charge (EIC).

1. Technical Standards & Make

- **Approved Make:** Sintex, Supreme, Prince, or equivalent ISI marked brands as approved by the EIC/Consultants.
- **Standard Compliance:** The tank must strictly conform to **IS: 12701** (Rotationally Moulded Polyethylene Water Storage Tanks).
- **Construction:** The tank must be **Double Coated (2-Layer)**. The outer layer should be UV-stabilized to prevent damage from sunlight, and the inner layer should be food-grade material to ensure safe drinking water.

2. Material Specifications: Components and Accessories

- **Tank Body:** Manufactured from 100% virgin food-grade plastic material. The tank must be seamless, one-piece molded with a smooth internal and external surface.
- **Lid:** Must be provided with a threaded or hinged lockable lid to prevent dust, insects, and rainwater from entering the tank.
- **Fittings (Connections):** The rate includes providing and fixing heavy-duty Brass/CPVC/GI tank nipples (connectors) for:
 - Inlet pipe connection.
 - Outlet pipe connection.
 - Overflow pipe connection (with a mosquito-proof mesh/cap).
 - Washout/Drain pipe connection at the bottom.
- **Ball Valve:** Provision and fixing of a high-quality ISI marked Ball Valve (Float Valve) at the inlet to prevent water wastage from overflowing.

3. Installation & Placement

- **Surface Preparation:** The tank must be placed on a perfectly leveled, smooth, and firm RCC/Masonry platform that covers the entire base of the tank. No part of the tank base should hang over the edge.
- **Erection:** The contractor is responsible for hoisting (lifting) the tank to the required height/terrace safely.
- **Pipe Integration:** All pipe connections (15mm, 20mm, or 25mm as per site requirements) must be made using proper sealants/washers to ensure 100% leak-proof joints.

4. Workmanship and Acceptance

- **Installation:** The work must be carried out by skilled technicians. The tank must be cleaned from the inside before commissioning.
- **Rectification:** Any damage to the terrace waterproofing or the tank itself during hoisting/installation shall be rectified by the contractor at no extra cost.
- **Final Approval:** The work shall be completed to the satisfaction of the EIC. The tank will be tested by filling it to full capacity to check for leaks or structural bulges.

5. Key Technical Compliance & Audit Points

- **ISI Marking:** Each tank must bear the **ISI 12701** mark and the manufacturer's name/batch number embossed on the body.
- **UV Resistance:** The tank must be suitable for outdoor use and withstand high temperature variations without cracking or losing strength.
- **Rate Inclusion:** The quoted rate is comprehensive and includes the **cost of the tank, all tank nipples/fittings, ball valve, lid, hoisting charges, labor for fixing, testing, and all applicable taxes (GST)**.
- **Unit of Measurement:** The payment will be made per "**Litre**" (**Ltr**) capacity or per "**Number**" (**Each**) as specified in the Bill of Quantities (BOQ).

6. Acceptance Criteria

The item will be accepted only if it is found to be in pristine condition without any cracks, dents, or manufacturing defects. The final installation must be functionally perfect, leak-proof, and placed securely as per the EIC's instructions.

Item No. 63: Providing and fixing Stone cladding work in Exterior wall including Fitting and scaffolding as directed by EIC. Rs.300/Sft

Scope of Work: Providing and fixing Stone Cladding work on exterior walls of the building. The work includes supplying the stone, surface preparation, fixing with approved adhesive or mortar, pointing, cleaning, and providing necessary scaffolding for working at heights, complete to the entire satisfaction of the Engineer-in-Charge (EIC).

1. Material Specifications

- Stone Type: High-quality natural stone (Sandstone, Granite, Slate, or Stone Tiles) of approved color, texture, and thickness (usually 12mm to 25mm) as per the architectural design.
- Quality: The stone must be hard, sound, durable, and free from cracks, decay, or weathering. All stones must be of uniform size or as per the pattern directed by the EIC.
- Bonding Material: Use of high-strength polymer-modified cementitious adhesive (conforming to IS: 15477) or rich cement mortar (1:3 ratio) for secure bonding to the wall surface.

2. Scaffolding & Safety

- Scaffolding: The rate includes providing and erecting sturdy double-legged steel/bamboo scaffolding to reach the exterior wall heights.
- Safety: The contractor is responsible for the safety of the workmen and must ensure the scaffolding is stable and secure throughout the execution of the work.

3. Execution & Workmanship

- Surface Preparation: The base wall surface must be cleaned of all dust, oil, and loose mortar. The surface should be roughened (hacking) to ensure a strong mechanical bond.
- Fixing: Stones must be fixed in perfect line, level, and plumb. The joints should be uniform and as per the design (Dhadoo or Pointed joints).
- Mechanical Anchors: For stones fixed at higher levels or for heavy stones, stainless steel (SS) pins or clamps must be used if directed by the EIC to prevent falling.
- Pointing & Finishing: Joints must be filled with matching stone grout or pigmented cement to ensure a neat and waterproof finish. The stone surface must be cleaned of any mortar stains immediately.

4. Workmanship and Acceptance

- Skilled Labor: The work must be carried out by experienced stone masons.
- Final Appearance: The finished wall should have a uniform appearance without any visible gaps, crooked lines, or loose stones.
- Curing: The cladding work must be properly cured with water for a minimum of 7 days to achieve full strength.

5. Key Technical Compliance & Audit Points

- Rate Inclusion: The rate of Rs.300/Sft is comprehensive and includes the cost of stone, adhesive/mortar, grout, mechanical anchors (if any), scaffolding charges, labor for fixing, cleaning, curing, and all applicable taxes (GST).
- Wastage: The rate includes all cutting and wastage of stone.
- Alignment: Any stone found to be out of line or level shall be removed and refixed by the contractor at no extra cost.
- Unit of Measurement: The payment will be made on a Square Foot (Sft) basis for the actual net area of cladding visible on the wall.

6. Acceptance Criteria

The cladding will be accepted only if the stone is of approved quality and the installation is found to be structurally sound and aesthetically pleasing. The final surface must be free from any efflorescence (white powder) or cement stains as per the EIC's instructions.

Item No. 64: (Storage UNIT) Providing and fixing storage unit with 18 mm thick box and shutters from 25mm ply with 1.0 mm laminate of approved shade in exterior side and 0.8 mm laminate of approved shade in interior side vertical and horizontal surface 19mm plywood with inside 0.8mm and outside 1mm laminate finish. provide one 18mm self with 0.8mm laminate .All teak wood bidding should be finished with 1mm laminate with required pattern/drawing rack and with lock, handles ,drawer, channels,, hinges etc. complete. Including side luggage self of 75mm x 50mm size teak wood patti with pupolish completa . all materials and labor etc. complete as per detail drawing and instruction of engineer- in charge.

1. SCOPE OF WORK

The work consists of providing, fabricating, and installing a high-quality storage unit featuring an 18 mm thick internal box and 19 mm/25 mm shutters and structural panels. The scope includes precise laminate application on both exterior and interior surfaces, teak wood edging (bidding) with PU polish, and the installation of all functional hardware (locks, handles, drawer channels, and hinges) as per the detailed drawings and instructions of the Engineer-in-Charge (EIC).

2. MATERIAL SPECIFICATIONS

- **Plywood (Structural & Panels):**
 - **Top Surface:** 25 mm thick Moisture Resistant (MR) grade plywood.
 - **Vertical Supports:** 25 mm thick MR grade plywood.
 - **Front Shutters & Side Boxes:** 19 mm thick MR grade plywood.
 - **Internal Shelves & Drawer Boxes:** 18 mm/19 mm thick MR grade plywood.
- **Laminate Finish:**
 - **Exterior Side:** 1.0 mm thick laminate of approved shade and texture.
 - **Interior Side:** 0.8 mm thick off-white (or approved shade) laminate on all vertical and horizontal internal surfaces.
- **Adhesive:** All laminates and joints shall be bonded using marine-grade waterproof adhesive (Fevicol Marine or equivalent).
- **Edging & Polish:** All exposed teak wood bidding (patti) for luggage shelves (size 75 mm x 50 mm) shall be finished with high-quality PU polish.

3. HARDWARE AND ACCESSORIES

All hardware must be of approved make and fitted as per standard carpentry practices:

- **Hinges:** Heavy-duty Brass hinges.
- **Drawer Channels:** Stainless Steel (S.S.) sliding channel sets.
- **Locks:** Quality locks for all shutters and drawers.
- **Handles:** S.S. handles or knobs of approved design.
- **Others:** Magnetic catchers, Abro tape for temporary fixing, and necessary screw nails.

4. CONSTRUCTION AND WORKMANSHIP

- **Fabrication:** The unit shall be assembled strictly as per the dimensions (Sample Size: 2.50 m x 0.75 m x 0.75 m).
- **Joinery:** All joints must be square, plumb, and true to line. Plywood edges must be covered with teak wood bidding before laminate application.
- **Drawer Units:** A total of four drawer units shall be integrated as per the analysis, ensuring smooth and silent operation.
- **Finish:** Laminates must be applied without air bubbles or visible seams at the edges.
-

5. TESTING AND ACCEPTANCE

- **Inspection:** The EIC will inspect the quality of the MR plywood and the thickness of the laminates before fabrication.
- **Operational Check:** All drawers and shutters must be tested for smooth movement and proper locking.
- **Surface Quality:** The final unit must be free from scratches, adhesive stains, or uneven polish.

6. MODE OF MEASUREMENT AND PAYMENT

- **Unit of Measurement:** Payment shall be made on a **Cubic Metre (CMT)** basis of the finished storage unit.
- **Rate Inclusion:** The comprehensive rate of **₹21,574.00 per 1.00 CMT** (as per the approved rate analysis) includes all materials, specialized labor for carpentry, hardware, taxes, and contractor profit.

Item No. 65: Window Curtains : Providing and fixing black-out roller blinds of "Aerolux" or equivalent make of any color and size for windows, with super-soft mechanism using clutch and springs housed in aluminum channel fixed to the masonry/ RCC surfaces by use of brackets. The fabric to be of 100% polyester yarn, cut of site-specific size cut using ultra-sonic machines to avoid threads coming out from its edges. The rubberized coating over the fabric to enhance blacking out of the space. complete at all levels and heights. Complete or as directed as per architect drawing and as per instruction of architect & engineer in charge.

1. SCOPE OF WORK

The work consists of providing, fabricating, and fixing premium quality black-out roller blinds on windows at all levels and heights. The scope includes the supply of 100% polyester fabric with rubberized coating, installation of a super-soft clutch mechanism, and securing the assembly to masonry or RCC surfaces, complete as per architectural drawings and instructions of the Engineer-in-Charge (EIC).

2. MATERIAL SPECIFICATIONS

- **Approved Make:** "Aerolux" or an equivalent approved brand as directed by the architect.
- **Fabric Composition:** The blinds shall be manufactured from 100% high-quality polyester yarn.
- **Coating:** The fabric must feature a specialized rubberized coating on one side to ensure 100% black-out performance and thermal insulation.
- **Fabric Cutting:** All fabric panels must be cut to site-specific sizes using ultra-sonic cutting machines to ensure sealed edges and prevent any fraying or loose threads.
- **Mechanism:** A super-soft operating mechanism comprising a high-grade clutch and spring system housed within a durable aluminum channel.
-

3. COMPONENTS AND ACCESSORIES

- **Aluminum Channel:** Extruded aluminum headrail/channel to house the internal mechanism, finished to resist corrosion.
- **Brackets:** Heavy-duty mounting brackets (top or face fix) designed for secure attachment to RCC or masonry.
- **Control Chain:** High-tensile operation chain for smooth manual adjustment of the blinds.
-

4. INSTALLATION AND WORKMANSHIP

- **Mounting:** The roller blinds must be fixed perfectly plumb and level. Brackets shall be secured using high-quality fasteners to ensure the assembly remains stable during frequent operation.
- **Operation:** The super-soft mechanism must allow for effortless lifting and lowering of the blinds without sticking or excessive noise.
- **Site-Specific Fit:** Blinds must be measured and fabricated to provide maximum window coverage with minimal light gaps at the edges.
-

5. TESTING AND ACCEPTANCE

- **Black-out Test:** Upon installation, the blinds will be tested to ensure they effectively block out external light as per project requirements.
- **Operational Check:** Each blind must be operated multiple times in the presence of the EIC to verify the clutch and spring mechanism.
- **Edge Inspection:** Edges will be inspected to confirm ultra-sonic cutting quality; any fabric showing loose threads or fraying shall be rejected.

6. MODE OF MEASUREMENT AND PAYMENT

- Unit of Measurement: Payment shall be made on a Square Metre (SQM) or Square Foot (SQFT) basis of the actual area of the blinds installed.
- Rate Inclusion: The comprehensive rate includes the cost of the fabric, mechanism, aluminum channels, brackets, fasteners, labor for fixing at any height, and all applicable taxes.
- Final Approval: Work is deemed complete only after the final inspection and approval by the Architect and Engineer-in-Charge.
-

Item No. 66 : 6 SEATER DINING TABLE : Provide and supply Nilkamal Jewel Six Seater Dining Set (Walnut) dining table of 1.50m length 0.90m width and 0.75 m height made of Solidwood and melamine finished with PU polish and 6 chairs 450 mm width 524mm length and 900mm height with 2" cushion as per drawing or image provided by consultant and suggested by engineer in charge.

1. SCOPE OF WORK

The work consists of providing and supplying a premium six-seater dining set, specifically the Nilkamal Jewel Dining Set (Walnut Finish). The scope includes the delivery, assembly, and placement of one dining table and six matching cushioned chairs as per the architectural layout and instructions of the Engineer-in-Charge (EIC).

2. DINING TABLE SPECIFICATIONS

- Model: Nilkamal Jewel Dining Table.
- Dimensions: 1500 mm (Length) x 900 mm (Width) x 750 mm (Height).
- Material: Constructed from high-quality Solid Wood (Rubberwood) to ensure structural rigidity and resistance to warping.
- Finish: The wood must be treated with a Walnut stain, followed by a premium Melamine finish and topped with a PU (Polyurethane) polish for enhanced heat and moisture resistance.
- Tabletop: The top must feature smooth, rounded edges with a clear, uniform wood grain appearance.

3. DINING CHAIR SPECIFICATIONS (6 NOS.)

- Model: Nilkamal Jewel Dining Chair.
- Dimensions: 450 mm (Width) x 524 mm (Depth/Length) x 900 mm (Height).
- Construction: Solid wood frame matching the table's material and walnut finish.
- Upholstery/Cushion: * The seat must be equipped with a 2-inch (50 mm) thick high-density foam cushion.
 - The fabric must be premium-grade upholstery in a shade matching the "Jewel" series standard, securely fixed to the seat frame.
- Ergonomics: The backrest must be ergonomically designed with vertical or horizontal slats as per the official Nilkamal Jewel design.

4. WORKMANSHIP AND ASSEMBLY

- Joints: All joinery must be executed using industrial-grade fasteners and wood glue to ensure the set remains wobble-free.
- Leveling: The table and chairs must be perfectly leveled on the floor. Use of high-quality floor protectors (buffers) at the base of each leg is mandatory.
- Surface Quality: The final finish must be free from bubbles, scratches, or uneven polishing patches.

5. COMPLIANCE AND ACCEPTANCE

- Brand Verification: The contractor must provide proof of purchase/original invoice from an authorized Nilkamal dealer. Each piece must bear the original Nilkamal branding/stickers where applicable.

- **Inspection:** The EIC or Consultant will inspect the set for any transit damage or manufacturing defects before acceptance.
- **Warranty:** The contractor shall hand over the manufacturer's warranty card to the department upon successful supply.

6. MODE OF MEASUREMENT AND PAYMENT

- **Unit of Measurement:** Payment shall be made on a "Per Set" (Each) basis, where one set constitutes one table and six chairs.
- **Rate Inclusion:** The rate is comprehensive and includes the cost of the table, six chairs, cushions, polishing, transportation, hoisting to the required floor, assembly labor, and all applicable taxes (GST).

Item No. 67 : Three seated sofas :Providing and supplying Nilkamal Rippon 3 Seater sofa or equivalent make Width 209 cm (82.3" Inch), Depth 82 cm (32.3" Inch), Height 92.5 cm (36.4" Inch), Seating Height 47.5 cm (18.7" Inch), springs ensures exceptional comfort Elegant fabric and leatherette upholstery for luxurious comfort Circular shaped armrests and tufted backrest with buttons add a touch of luxury Rose gold legs provide support and a chic and modern aesthetic Built from robust MDF and Neem wood for enhanced durability.

1. SCOPE OF WORK

The work consists of providing and supplying a premium three-seater sofa, specifically the Nilkamal Rippon 3 Seater Sofa or an equivalent approved make. The scope includes delivery, assembly, and placement at the designated location as per the instructions of the Engineer-in-Charge (EIC).

2. DIMENSIONAL SPECIFICATIONS

- Overall Width: 209 cm (82.3 inches).
- Overall Depth: 82 cm (32.3 inches).
- Overall Height: 92.5 cm (36.4 inches).
- Seating Height: 47.5 cm (18.7 inches).

3. CORE STRUCTURE AND DURABILITY

- **Frame Material:** The internal load-bearing frame must be constructed using a combination of Solid Neem Wood (naturally termite-resistant) and high-quality MDF (Medium Density Fiberboard) for enhanced structural stability.
- **Support System:** The seat base must be equipped with S-Springs (Zig-zag springs) and high-tensile webbing to ensure a bounce-back effect and prevent sagging after prolonged use.

4. CUSHIONING AND FOAM DENSITY

- **Seat Cushioning:** Must feature high-resilience (HR) foam with a minimum density of 28 kg/m³ to 32 kg/m³ to provide optimal support and comfort.
- **Backrest & Armrest:** Padded with low-density super-soft foam (approx. 22-24 kg/m³) to provide a plush, luxurious feel.
- **Tufting:** The backrest must feature deep-button tufting to keep the foam in place and enhance the aesthetic appeal.

5. UPHOLSTERY AND FINISH

- **Material:** A premium combination of Elegant Fabric and Leatherette. The fabric must be high-GSM, anti-pilling, and breathable.
- **Legs:** The unit must be supported by four heavy-duty metal legs with a Rose Gold electroplated finish.

- Design Features: Circular-shaped armrests and a tufted backrest as per the original "Rippon" design.

6. WORKMANSHIP AND INSTALLATION

- Stitching: All seams must be double-stitched with high-tenacity nylon thread to prevent bursting under pressure.
- Floor Protection: Each rose gold leg must be fitted with anti-skid PVC bushes/protectors to prevent scratches on the flooring.
- Assembly: The sofa must be delivered in a semi-knocked-down (SKD) or fully assembled state and checked for stability (wobble-free) on-site.

7. COMPLIANCE AND ACCEPTANCE

- Brand Verification: The contractor must submit the original tax invoice from an authorized Nilkamal dealer to ensure the product is not a local counterfeit.
- Warranty: A minimum of 1-year manufacturer warranty (or as per Nilkamal standard) must be provided.
- Final Inspection: The EIC will verify the foam's "sink-in" quality and the finish of the rose gold legs before approving the payment.

8. MODE OF MEASUREMENT AND PAYMENT

- Unit of Measurement: Payment shall be made on a "Per Number" (Each) basis.
- Rate Inclusion: The comprehensive rate includes the cost of the sofa set, all internal springs/foam/fabric, rose gold legs, transportation, hoisting, assembly, and all applicable taxes (GST).

Item No. 68 : CENTER TABLE:-Manufacturing and Supply of Center Table

Coffe table size 650 (L) x 650 (D) x 400 (H)

1. Wood Framing - Base frame round molded 25x50 mm Sq. thick CP teakwood duly polished with mahogany melamine finished .

2. Top Glass made of 10 mm thick clear toughen glass with crystal edges .

3. Glass support shall be button fitted on all corner.& have pvc buffers at bottom.

1. SCOPE OF WORK

The work consists of the manufacturing, supply, and placement of a premium wooden center table (coffee table). The scope includes the fabrication of a seasoned teakwood base frame, application of a mahogany melamine finish, and the provision of a heavy-duty toughened glass top, complete as per the instructions of the Engineer-in-Charge (EIC).

2. DIMENSIONAL SPECIFICATIONS

- Length (L): 650 mm.
- Depth (D): 650 mm.
- Height (H): 400 mm.

3. WOODEN FRAME AND BASE CONSTRUCTION

- Material: The base frame shall be manufactured from First Class Central Province (CP) Teakwood, seasoned to prevent warping or cracking.
- Section Size: The structural frame members shall have a minimum thickness of 25 mm x 50 mm.
- Design: The frame must feature round molded edges as per the architectural drawing to ensure a premium look and user safety.
- Finish: The wood must be finely sanded and finished with a high-quality Mahogany stain, followed by a Melamine polish for a durable, heat-resistant, and glossy surface.

4. GLASS TOP SPECIFICATIONS

- Material: The tabletop shall be made of 10 mm thick clear toughened glass (safety glass).
- Edge Treatment: All edges of the glass must be crystal-polished (diamond-edge polished) and beveled to ensure smoothness and aesthetic brilliance.
- Support System: The glass shall be securely supported by SS/Brass button fittings on all four corners to prevent displacement and ensure a uniform gap between the wood and glass.

5. WORKMANSHIP AND ACCESSORIES

- Joinery: All wooden joints must be mortise-and-tenon or industrial-grade dowel joints, reinforced with waterproof adhesive.
- Floor Protection: The bottom of the table legs must be fitted with high-quality PVC buffers to provide stability and protect the flooring from scratches.
- Surface Quality: The final melamine finish must be free from brush marks, dust inclusions, or uneven staining.

6. COMPLIANCE AND INSPECTION

- Material Verification: The EIC may inspect the CP teakwood frame before the polishing process begins to verify the wood quality.
- Glass Testing: The contractor must ensure the glass bears the "Toughened" mark/logo on one corner to verify its safety rating.
- Final Approval: The unit will be accepted only if it is found to be stable, wobble-free, and aesthetically aligned with the project's interior standards.

7. MODE OF MEASUREMENT AND PAYMENT

- Unit of Measurement: Payment shall be made on a "Per Number" (Each) basis.
- Rate Inclusion: The comprehensive rate includes the cost of seasoned CP teakwood, 10 mm toughened glass, button fittings, melamine polishing, labor for manufacturing, transportation, and all applicable taxes (GST).

Item No. 69: TV UNIT : (1.35 M X 0.25 M X 0.26 M) Provide and supply wall mounted tv made off 19mm ply and both side drawer and center portion empty, outer covered with 1mm laminate and inside 0.80mm laminate of required shade as per drawing or image provided by consultant and suggested by EIC.

1. SCOPE OF WORK

The work consists of providing, fabricating, and installing a premium wall-mounted TV console unit. The scope includes the construction of the main carcass with integrated drawers, application of decorative laminates on all surfaces, and secure mounting to the wall as per the detailed drawings and instructions of the Engineer-in-Charge (EIC).

2. DIMENSIONAL SPECIFICATIONS

- Overall Length: 1.35 Meters.
- Overall Depth: 0.25 Meters.
- Overall Height: 0.26 Meters.

3. MATERIAL SPECIFICATIONS

- Plywood: The entire unit carcass, shutters, and drawer boxes shall be fabricated using 19 mm thick Moisture Resistant (MR) grade plywood.
- Exterior Finish: All visible outer surfaces shall be finished with 1.0 mm thick laminate of approved shade and texture.
- Interior Finish: All internal surfaces, including the inside of drawers and the open center portion, shall be finished with 0.8 mm thick laminate of approved shade.
- Adhesive: Use of marine-grade waterproof adhesive (e.g., Fevicol Marine) for all bonding requirements to ensure durability.
- Edging: All exposed plywood edges must be finished with teak wood bidding or high-quality PVC edge banding as per the EIC's direction.

4. DESIGN AND CONFIGURATION

- **Storage:** The unit shall feature two side drawers (one on each end) equipped with smooth-motion S.S. sliding channels.
- **Center Portion:** The center section of the unit shall remain open/empty for the placement of media players or set-top boxes, with integrated cable management holes at the rear.
- **Mounting:** The unit must be wall-mounted using heavy-duty "L" brackets or concealed hanging hardware capable of supporting the unit's weight and additional equipment.

5. HARDWARE AND ACCESSORIES

- **Drawer Channels:** S.S. Sliding channel sets for smooth operation.
- **Handles/Knobs:** S.S. handles or "press-to-open" magnetic latches as per the consultant's design.
- **Fasteners:** High-quality star screws and PVC grip plugs for wall mounting.

6. WORKMANSHIP AND ACCEPTANCE

- **Fabrication:** All joints must be perfectly square and plumb. Laminates must be applied without air bubbles or visible seams at the edges.
- **Installation:** The unit must be fixed perfectly level. Any damage to the wall tiles or plaster during installation shall be rectified by the contractor at no extra cost.
- **Final Approval:** The unit will be accepted only if it matches the approved laminate shades and fulfills the structural requirements specified by the EIC.

7. MODE OF MEASUREMENT AND PAYMENT

- **Unit of Measurement:** Payment shall be on a "Per Number" (Each) basis.
- **Rate Inclusion:** The comprehensive rate includes the cost of 19 mm MR plywood, 1.0 mm and 0.8 mm laminates, S.S. hardware, wall-mounting accessories, labour for fabrication/fixing, and all applicable taxes (GST).

Item No. 70 : SLEEPING BED (1.95 m x 2.15 m x 0.37m)

Providing and fixing bed with 25mm ply with 1.0 mm laminate of approved shade in exterior side and 0.8 mm laminate of approved shade in interior side vertical and horizontal surface 19mm plywood with inside 0.8mm and outside 1mm laminate finish provide with two openable shutter at top with handles. Also provide six s.s. legs. All teak wood bidding should be finished with 1mm laminate and also provide two side box (600 x 400 x 450mm) with each two drawer made off 19mm ply, outer 1mm and inside 0.8mm laminate etc complete with all materials and labor as per detail drawing and instruction of engineer- in charge.

1. SCOPE OF WORK

The work consists of providing, fabricating, and installing a premium sleeping bed with integrated storage and two matching side tables. The scope includes structural assembly using 25mm and 19mm plywood, precise laminate application on all surfaces, teak wood edging (bidding), and the installation of all functional hardware and S.S. supports as per the detailed drawings and instructions of the Engineer-in-Charge (EIC).

2. DIMENSIONAL SPECIFICATIONS

- **Main Bed Unit:** 1.95 Meters (Width) x 2.15 Meters (Length) x 0.37 Meters (Height).
- **Side Tables (2 Nos.):** 0.60 Meters (Width) x 0.40 Meters (Depth) x 0.45 Meters (Height) each.

3. MATERIAL SPECIFICATIONS

- **Plywood (Moisture Resistant - MR Grade):**
 - **Main Bed Structure/Frame:** 25 mm thick M.R. Plywood for maximum load-bearing capacity.
 - **Vertical & Horizontal Surfaces/Shutters:** 19 mm thick M.R. Plywood.
 - **Side Table Carcass & Drawers:** 19 mm thick M.R. Plywood.
- **Laminate Finish:**
 - **Exterior Surfaces:** 1.0 mm thick laminate of approved shade and texture.
 - **Interior Surfaces:** 0.8 mm thick laminate (off-white or approved shade) on all internal vertical and horizontal surfaces.
- **Adhesive:** All laminates and joinery shall be bonded using marine-grade waterproof adhesive (Fevicol Marine or equivalent).
- **Edging:** All exposed edges must feature teak wood bidding finished with 1.0 mm laminate to match the exterior pattern.

4. DESIGN AND COMPONENTS

- **Bed Storage:** The bed top must feature **two openable shutters** to access the internal storage area, equipped with heavy-duty handles.
- **Bed Support:** The unit must be supported by **six Stainless Steel (S.S.) legs** of required height and strength to ensure stability and ease of cleaning underneath.

- **Side Tables:** Two independent side boxes, each featuring **two drawers** constructed of 19 mm plywood with smooth-motion S.S. sliding channels.

5. HARDWARE AND ACCESSORIES

All hardware must be of approved make and fitted as per standard carpentry practices:

- **Handles:** High-quality S.S. handles for bed shutters and side table drawers.
- **Drawer Channels:** S.S. Sliding channel sets for side tables.
- **Fasteners:** High-quality screw nails and hardware kits.

6. WORKMANSHIP AND INSTALLATION

- **Fabrication:** All joints must be perfectly square, plumb, and true to line.
- **Laminate Application:** Laminates must be applied without air bubbles or visible seams at the edges.
- **Assembly:** The bed must be assembled on-site to ensure it is wobble-free and the S.S. legs are perfectly leveled.

7. MODE OF MEASUREMENT AND PAYMENT

- **Unit of Measurement:** Payment shall be made on a "**Per Number**" (**Each**) basis or **Cubic Metre (CMT)** as specified in the Bill of Quantities (BOQ).
- **Rate Inclusion:** The comprehensive rate includes the cost of 25mm/19mm MR plywood, 1.0mm/0.8mm laminates, S.S. legs, hardware, labor for fabrication/fixing, and all applicable taxes (GST).

Item No. 71 : MATTRESS: (1.95M X 2.15 M X 0.15M) Provide and supply required size of mattress provide with memory foam with removable and washable cover of sleepwell or eql. Make as suggested by EIC.

1. SCOPE OF WORK

The work consists of providing and supplying a premium high-resilience memory foam mattress. The scope includes delivery, unpacking, and placement on the bed unit, complete with a specialized outer cover as per the instructions of the Engineer-in-Charge (EIC).

2. DIMENSIONAL SPECIFICATIONS To ensure a perfect fit with the fabricated bed unit, the mattress must strictly adhere to the following dimensions:

- Length: 2.15 Meters (approx. 84.6 inches).
- Width: 1.95 Meters (approx. 76.7 inches).
- Thickness/Height: 0.15 Meters (150 mm / 6 inches).

3. MATERIAL AND CORE COMPOSITION

- **Approved Make:** Sleepwell (Memory Foam Series) or an equivalent approved premium brand.
- **Primary Core:** The mattress must feature a dual-layer or multi-layer construction:
 - Top Layer: High-density Memory Foam (Visco-elastic foam) that contours to the body shape for pressure relief.
 - Base Support: High-resilience (HR) foam or bonded foam to provide structural integrity and prevent sagging.
- **Technology:** The foam must be treated with anti-microbial technology (e.g., Sleepwell's "Neem Fresche") to prevent dust mites, allergies, and breathing problems.

4. COVER AND HYGIENE FEATURES

- **Fabric:** The outermost layer must be a premium-grade, breathable knitted fabric.
- **Removability:** The mattress must be equipped with a removable and washable zippered cover to maintain long-term hygiene.
- **Finish:** The cover should be soft-to-touch, anti-pilling, and feature aesthetic quilting as per the manufacturer's premium range.

5. WORKMANSHIP AND DELIVERY

- **Condition:** The mattress must be delivered in original factory-sealed waterproof packaging to avoid dust or moisture during transit.
- **Placement:** The contractor is responsible for placing the mattress onto the bed and ensuring it is perfectly aligned with the bed frame edges.
- **Odor:** The mattress must be free from any strong chemical odors (low VOC emissions).

6. COMPLIANCE AND ACCEPTANCE

- **Brand Verification:** The contractor must submit the original tax invoice from an authorized dealer.
- **Warranty:** The contractor shall hand over the manufacturer's official warranty card (minimum 5–10 years as per standard) to the Department.
- **Inspection:** The EIC will verify the thickness, foam "rebound" quality, and the presence of the zippered cover before approval.

7. MODE OF MEASUREMENT AND PAYMENT

- Unit of Measurement: Payment shall be made on a "Per Number" (Each) basis.
- Rate Inclusion: The comprehensive rate includes the cost of the memory foam mattress, zippered washable cover, transportation, hoisting to the required floor, and all applicable taxes (GST).

Item No. 72 : BED SHEET: (2.50 M X 2.30M) Provide and supply required size of pure cotton bedsheet of required pattern and colour as suggested by eic.

1. SCOPE OF WORK

The work consists of providing and supplying premium quality pure cotton bedsheets. The scope includes the supply of the fabric in the required size, pattern, and color, complete with matching pillow covers, as per the instructions of the Engineer-in-Charge (EIC).

2. DIMENSIONAL SPECIFICATIONS

To ensure proper tucking and coverage for the king-size bed (1.95 m x 2.15 m), the bedsheet must strictly adhere to the following dimensions:

- Length: 2.50 Meters.
- Width: 2.30 Meters.

3. MATERIAL AND FABRIC QUALITY

- Fabric Type: 100% Pure Cotton (Mercerized) to ensure breathability, skin-friendliness, and a soft texture.
- Thread Count (TC): The fabric must have a minimum thread count of 250 TC to 300 TC (Threads per square inch) to ensure durability and a premium feel.
- Yarn Quality: High-quality combed cotton yarn to prevent pilling (forming of small balls on the fabric surface) after multiple washes.
- Dyeing: The fabric must be processed using high-quality reactive dyes to ensure colorfastness (no bleeding) during washing.

4. AESTHETICS AND DESIGN

- Pattern & Color: The specific pattern (Solid, Striped, or Printed) and color shall be as per the final selection and suggestion of the Engineer-in-Charge (EIC).
- Finish: The bedsheet must have a smooth, crisp finish and be free from any weaving defects, knots, or oil stains.

5. WORKMANSHIP AND ACCESSORIES

- Hemming: All four sides of the bedsheet must be neatly hemmed with a minimum of 10-12 stitches per inch using high-strength matching thread.
- Pillow Covers: The set must include two matching pillow covers (standard size: 45 cm x 70 cm) featuring the same fabric quality and a flap or zippered closure.
- Packaging: Each set must be delivered in original protective packaging to ensure it remains clean and moisture-free during transit.

6. COMPLIANCE AND ACCEPTANCE

- Shrinkage: The fabric must be pre-shrunk; maximum allowable shrinkage after the first wash shall not exceed 2-3%.
- Inspection: The EIC will verify the fabric "hand-feel," thread density, and color accuracy before accepting the supply.
- Replacement: Any bedsheet found with manufacturing defects, uneven dyeing, or incorrect dimensions shall be replaced by the contractor at no extra cost.

7. MODE OF MEASUREMENT AND PAYMENT

- Unit of Measurement: Payment shall be made on a "Per Set" (Each) basis, where one set constitutes one bedsheet and two pillow covers.
- Rate Inclusion: The comprehensive rate includes the cost of the pure cotton fabric, pillow covers, stitching, transportation, and all applicable taxes (GST).

Item No. 73 : PILLOW : (0.68 M X 0.45 M) Provide and supply required size of pillow made of microfiber of sleepweel make or etc with it's cotton cover as suggested by EIC.

1. SCOPE OF WORK

The work consists of providing and supplying premium quality microfiber pillows. The scope includes the supply of the pillow inserts and their respective cotton covers, ensuring they meet the comfort and size requirements as per the instructions of the Engineer-in-Charge (EIC).

2. DIMENSIONAL SPECIFICATIONS

To ensure ergonomic support and compatibility with the king-size bed and bedsheets, the pillows must strictly adhere to the following dimensions:

- Length: 0.68 Meters (approx. 27 inches).
- Width: 0.45 Meters (approx. 18 inches).

3. MATERIAL AND CORE COMPOSITION

- Approved Make: Sleepwell (Microfiber Series) or an equivalent approved premium brand.
- Filling Material: High-quality Super-Soft Microfiber (Polyester) filling. The fibers must be ultra-fine to provide a "down-like" feel and consistent support.
- Filling Weight: Each pillow must be adequately filled (typically 700g to 900g) to maintain its loft and shape over time.
- Hygiene Features: The filling must be hypoallergenic, non-toxic, and resistant to dust mites and fungal growth.

4. PILLOW SHELL AND COVER

- Primary Shell: The pillow must have an internal casing made of high-quality, breathable fabric to prevent fibers from leaking out.
- Outer Cover: The contractor shall provide a Pure Cotton Cover for each pillow. The fabric must be soft-to-touch, durable, and feature a high thread count.
- Closure: The cotton cover should be neatly stitched with an envelope-style or zippered closure as suggested by the EIC.

5. WORKMANSHIP AND DELIVERY

- Condition: All pillows must be delivered in original factory-sealed vacuum packaging to ensure they remain compressed and hygienic during transit.
- Bounce-back Quality: The pillows must exhibit excellent resilience, returning to their original shape immediately after use.
- Odor: The materials used must be odorless and free from any chemical residues.

6. COMPLIANCE AND ACCEPTANCE

- Brand Verification: The contractor must submit the original tax invoice from an authorized Sleepwell dealer.
- Warranty: Any manufacturer's warranty regarding the "clumping" or "lumpiness" of fibers must be handed over to the Department.
- Final Inspection: The EIC will verify the soft-feel, dimensions, and the quality of the cotton cover before approving the supply.

7. MODE OF MEASUREMENT AND PAYMENT

- Unit of Measurement: Payment shall be made on a "Per Number" (Each) basis.
- Rate Inclusion: The comprehensive rate includes the cost of the microfiber pillow, cotton cover, transportation, hoisting to the required floor, and all applicable taxes (GST).