

**NAME OF WORK :- DEVELOPMENT OF AMBAPANI ECO-TOURISM SITE, AT. VYARA DIST: TAPI
(Construction work of Dormitory)**

ITEM WISE SPECIFICATION

Item No:- 1

Excavation for foundation upto 1.5M depth including sorting out and stacking of useful materials and disposing of the excavated stuff up to 50M. Lead (B) Dense or Hard Soil

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.4.0.0. (A) P.No.29.

Item No:- 2

Excavation for foundation upto 1.5M depth including sorting out and stacking of useful materials and disposing of the excavated stuff up to 50M. Lead (B) Hard Rock

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No. 4.001. (C) P.No.32

Item No:- 3

Providing and laying cement concrete 1:3:6 (1-Cement : 3- coarse sand : 6- machine cut stone aggregates 40 mm nominal size) and curing complete excluding cost of formwork in (A) Foundation and Plinth

The relevant specification shall be followed as per General Technical specification for Building work booklet It. No. 5.3.2. (A) P.No.38 except that using for including the cost of form work for G.FLOOR instead of excluding the cost of form work.

For form work use the relevant specification shall be followed as per General Technical specification for Building work booklet It.No.9.1 (A) P.No.63

Consolidated item shall be measured and paid for actual size of RCC member casted on **Cubic meter** basis.

Item No:- 4

Providing and laying controlled cement concrete M.250 and curing complete including the cost of formwork and excluding reinforcement for reinforced concrete work in (A) Foundations, footings and Mass concrete. footing

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.5.8.3.(A) P.No.47 except that using for including the cost of form work for G.FLOOR instead of excluding the cost of form work.

For form work use the relevant specification shall be followed as per General Technical specification for Building work booklet It.No.9.1 (A) P.No.63

Consolidated item shall be measured and paid for actual size of RCC member casted on Cubic meter basis.

Item No: - 5

Filling available excavated Earth (Excluding Rock) in trench plinth side of foundation. in layer not excluding 20 cm in depth consolidation each deposited layer by ramming and watering etc. complete

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.4.12. P.No.35

Item No:- 6

Filling foundation and plinth with murrum or selected soil in layer of 20 cm in thickness including ramming watering and consolidating etc. complete

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.4.004. P.No.35.

Item No:- 7

Providing and laying controlled cement concrete M-250 and curing etc. complete including the cost of form work and reinforcement for reinforced concrete work in (c) Slabs, Landings, Shelves, Balconies, Lintel, Beams, Girders and Cantilever upto floor two level. G.F

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.5.8.2.(C) P.No.47+ 5.4.13 P.46 including the cost of form work and excluding cost of reinforcement for reinforced concrete work for Floor Two Level instead of excluding the cost of form work.

For form work use the relevant specification shall be followed as per General Technical specification for Building work booklet It. No. 9.1 (H) (1) P.65

Consolidated item shall be measured and paid for actual size of RCC member casted on Cubic meter basis

Item No:- 8-9

Providing and laying controlled cement concrete M250 and curing etc. complete including the cost of form work and reinforcement for reinforced concrete work in (C) Chhajja, Lintel for Floor Two Level

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.5.8.2.(C) P.No.47+ 5.4.13 P.46 + 5.4.13(A) including the cost of form work and excluding cost of reinforcement for reinforced concrete work for Floor Two Level instead of excluding the cost of form work.

For form work use the relevant specification shall be followed as per General Technical specification for Building work booklet It. No. 9.1 (L) P.66

Consolidated item shall be measured and paid for actual size of RCC member casted on Cubic meter basis.

Item No:- 10

Providing and laying controlled cement concrete M-250 and curing complete including the cost of form work but excluding the cost of reinforcement for reinforced concrete work in (d) Columns, slabs, Beams Up to Plinth level.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.5.8.3.(D) P.No.47 except that using for including the cost of form work for G.FLOOR instead of excluding the cost of form work.

For form work use the relevant specification shall be followed as per General Technical specification for Building work booklet It.No.9.1 (G) (I) P.No.65

Consolidated item shall be measured and paid for actual size of RCC member casted on Cubic meter basis.

Item No:- 11

Providing and laying controlled cement concrete M-250 and curing complete including the cost of form work but excluding the cost of reinforcement for reinforced concrete work in stair Case (E) Staircases excluding landing up to floor two level. G.F

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.5.8.3.(C) P.No.47 except that using for including the cost of form work for G.FLOOR instead of excluding the cost of form work.

For form work use the relevant specification shall be followed as per General Technical specification for Building work booklet It.No.9.1 (H) (1) P.No.65

Consolidated item shall be measured and paid for actual size of RCC member casted on Cubic meter basis.

Item No:- 12

Providing IS Mark TMT FE 500D bar reinforcement for RCC work including bending & placing in position complete up to All floor Level

1.0. GENERAL

This work shall consist of furnishing and placing TMT Fe-500 Conforming to IS 1786 2008 reinforcement Providing and applying anticorrosive treatment with polymer base materials to the steel reinforcement including descaling the dust and applying the preventive coating of approved make etc. complete, 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 may be either **TMT Fe-500** tensile steel, high strength deformed bars. They may be uncoated or coated with epoxy or with approved protective coatings.

2.2. T.M.T. bars reinforcement for R C C work shall conform IS 432 (Part II) 1966 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, all 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 bending 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 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 T.M.T. 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

$$CE = C + \frac{Mn}{6} + \frac{Cr + Mg + V}{5} + \frac{Ni + Cu}{15}$$

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 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 spalling 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.

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

10.9. 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 and PAYMENT

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

Sr. No	Diameter of steel	weight of steel per running meter	Sr. No	Diameter of steel	weight of steel per running meter
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	40mm	9.86 Kg Rmt

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

Reinforcement shall be measured in length including hooks, if any, separately for different diameters as actually used in work, excluding overlaps. From the length so measured, the weight of reinforcement shall be calculated in tonnes on the basis of IS 1732. Wastage, overlaps, couplings, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire or other methods for binding and placing shall not be measured and cost of these items shall be deemed to be included in the rates for reinforcement..

The contract unit rate for coated uncoated reinforcement shall cover the cost of material, fabricating, transporting, storing, bending, placing, binding and fixing in position as shown on the drawings as per these specifications and as directed by the Engineer, including all labour, equipment, supplies, incidentals, sampling, testing and supervision.

The unit Rate for coated reinforcement shall be deemed to also include cost of all material, labour, tools and plant, royalty, transportation and expertise required to carry out the work. The rate shall also cover sampling, testing and supervision required for the work. **No Payment shall be given for Lap.**

The rate shall be for a unit of **One Kg.**

Item No: - 13-15

Providing and laying uncoursed rubble masonry brought to the course with Local hard stone of Equivalent Region approved quality in foundations and plinth and Superstructure in Lime Mortar 1:1.5 (1-Lime : 1.5-coarse sand including levelling up etc. complete Extra for Stone work in superstructure above plinth level upto floor two level (B) Conventional. complete as directed by engineer-in-charge.

1.0. Materials:

The cement mortar shall conform to M-11. Stone shall conform to M-16.

2.0. Workmanship

2.1. Dressing of stones:

Stone used for un coursed rubble masonry work shall be hammer dressed on the sides, and beds in which such a way as to close with the adjacent stone in the masonry work as strongly as possible. The face stones shall be dressed in such a manner as to give a specified pattern such as polygonal facing etc. The face of the stones shall be so dressed that bushing on the exposed face shall not project by more than 40 mm. from the general wall surface and on the face to be plastered, it shall not project by more than 19 mm., not shall have depressions more than 10 mm. from the average wall surface.

2.2. Laying:

All the stone shall be sufficiently wetted before laying to prevent absorption of water from mortar. The wall shall be built true to plumb (of true to required batter when so specified). All connected walls in a structure shall be raised up informally and regularly. However, if for any specific reason,

one part of masonry is required to be left behind the wall shall be raked back at an angle not steeper than 45. Vertical toothed joints in masonry shall not be allowed. The work shall be carried out regularly and masonry of any day wall is not raised by more than 1 meter in height.

2.3. The stone shall be laid in an uncoarsed fashion, or random facing etc. However, the masonry is required to be brought to level at various stages viz. plinth level window sill level, roof level and any other level specifically shown in the drawings. This may be done first by adjusting the laying of stone to one level and then by providing levelling coarse of cement concrete 1:6:12 (1 cement: sand: 12 graded stone aggregate 20 mm. nominal size) or as otherwise specified.

2.4. Proper bonding shall be achieved by closely filling in adjacent stones as well as by using bond stones or through stones as described herein below. Face stones shall extend back sufficiently, and bond well with the masonry. The stone shall be carefully set to break joints and avoid formation of vertical joints. The depth of stone from the face of wall inwards shall not be less than weight or breadth at the face. The hearing or interior filling of the wall shall consist of rubble stones which may be of any shape. Neither the face stone nor the hearing stone shall be so small to pass through circular ring of 150 mm. internal diameter in any direction nor shall any of them shall have minimum thickness 100 mm.

2.5. Ail stone shall be carefully laid, hammered down by a wooden mallet into position and solidly embedded in mortar, chips and spawns of stone may be used wherever necessary to avoid thick mortar bends or joints at the same time ensuring that no hollow space is left anywhere in the masonry. The chips used shall not be more than 20% by volume of masonry. The hearting shall be laid nearly level with face stones except that at about one meter intervals vertical bond stone or plumes projecting about 150 to 200 mm. shall be firmly embedded to from vertical bounding in masonry.

2.6. Bond stone:

Bond stones or through stones running right across the thickness of the wall shall be provided in wall up to 600 mm. thick. In thicker walls two stones overlapping each other by at least 150 mm. shall be provided across the thickness of the wall to form bond stones. There shall be at least one bond stone for every 0.5 sq. mt of wall surface. The bond stone shall be marked by a distinguishing letter during construction for subsequent verification and shall be laid staggered in sub sequent layers.

2.7. Quoins:

The quoins or corners stones shall be selected stone neatly dressed with hammer and/or chisel to form the required corner angle and laid header and stretcher alternatively, the bed top surface of quoins shall be chiselled dressed to give horizontal joints. The quoins shall have a uniform chisel draft of at least 25 mm. width at four edges of each exposed face, all the edges of the same face being in one plane. No quoins stone shall be smaller than 0.025 cum. In volume.

2.8. Jamb Stones:

The jamb stone shall be made with stone specified for quoins, that the stone provided on the jambs shall have their length equal to thickness of wall up to 600 mm. and a line of headers shall be provided for walls thicker than 600 mm. as specified for bond.

2.9. Joints:

All the joints shall be filled with mortar and width shall not exceed 25 mm. when plastering of pointing is not required to be done, the joints shall be struck flush and finished simultaneously while laying the stone. Otherwise, the joints shall be raked to a minimum depth of 20 mm. by a racking tool, during progress of laying while the mortar is still green.

2.10. Scaffolding:

Single or double scaffolding shall be used. The scaffolding shall be strong and sound. The holes left in masonry for supporting scaffolding shall be filled and made good before plastering.

2.11. Curing:

Green work shall be protected from rains by covering the same. Masonry shall be kept constantly moist on all the faces for a period of at least 7 days. The top of masonry shall be flooded at close of the day.

3.0. Mode of measurements and payment

3.1. All work shall be measured based on finished dimensions and measured net except where otherwise specified. Only specified dimensions shall be allowed. Anything extra shall be ignored.

The masonry work in foundation and plinth shall be measured under this item. No deduction shall be made, not extra payment made for the following:

- (a) Ends of joints, beams, spots, girders, rafters, purloins, trusses, corbels, etc. each up to 500 sq. cm. in section.
 - (b) Opening each up to 0.1 sq.m.
 - (c) Wall plates and bed plates, bearing of chhaja and like up to 10 cm. depth (bearing of floor and roof slabs shall be deducted from masonry).
 - (d) Drain holes and recesses for cement concrete blocks to embed hold fasts for doors windows.
 - (e) Building in the masonry iron fixtures pipes up to 300 mm. dia. hole fasts of doors and windows.
 - (f) Forming theses in masonry up to section of 350 sq.cm.
- 3.2. The rate shall be for a unit of one cubic meter.

Item No-14

Half brick masonry in common burnt clay building bricks having crushing strength not less than 35 Kg/Sq.Cm. in Cement mortar 1:4 (1- Cement : 4 -coarse sand) in foundation and plinth
(B) Conventional

1.0. Materials.

Bricks shall be followed for bricks, wetting, laying of bricks, joints, curing , except that the bricks M* be used shall be conventional bricks instead of modular bricks.

2.0. Workmanship.

- 2.1. Relevant specifications of bricks, wetting and laying of bricks, joints, curing etc. shall conform to item No. 6.19 (A) except that the brick work of half bricks shall be carried out 6.19. (A) Except that the brick work of half bricks shall be carried out.
- 2.2. Cement mortar used in masonry work shall be in proportion of 1 part of cement and 4 parts of sand volume.
- 2.3. All bricks shall be laid stretch wise, breaking joints with those in the upper and lower courses. The wall shall be taken truly plumb. All course shall be laid truly horizontal and all vertical joints shall be truly vertical. The bricks shall be laid with frogs upwards, a set of masons tools shall be maintained on work as required for frequent checking.

3.0. Mode of measurement and payment

- 3.1. The half brick masonry work in foundation and plinth shall be measured under this item, the limiting dimensions shall not exceed those shown in the plan or as directed. Any work done extra over the specified dimensions shall be ignored.
- 3.2. The relevant specifications of item No. 6.12 shall be followed. The length shall be measured **nearest to** one cm.

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

Item no.16

Providing 15 mm thick cement plaster in single coat on fair side brick/concrete wall for interior plastering up to floor two level finished even and smooth in with Floating coat of neat cement.
(i) cement Mortar 1:3 (1 cement : 3 Sand).

1.0. Materials

1.1. Water shall conform to M-1. The cement mortar of proportion **1:4** shall conform to M-13.

2.0. Workmanship

2.1. Scaffolding:

Wooden bullies, bamboos, planks, trestles and other scaffolding shall be sound. These shall be properly examined before erection and use. Stage scaffolding shall be provided for ceiling plaster which shall be independent of the walls.

2.2. Preparation of back ground:

2.2.1. The surface shall be cleaned of all dust, loose mortar droppings, traces of algae, efflorescence and other foreign matter by water or by brushing. Smooth surface shall be toughened by wire brushing if it is not hard and by hacking if it is hard. In case of concrete surface, if a chemical retarded has been applied to the form work, the surface shall be roughened by wire brushing and all the resulting dust and loose particles cleaned off and care shall be taken that none of the readers if left on the surface. Trimming of projections on brick/concrete surfaces where necessary shall be carried out to get an even surface.

2.2.2. Raking of joints in case of masonry where necessary shall be allowed to dry out for sufficient period before carrying out the plaster work.

2.2.3. The work shall not be soaked but only damped evenly before applying the plaster. If the surface becomes dry, such area shall be moistened again.

2.2.4. For external plaster, the pestring operation shall be started from top floor and carried downwards. For internal plaster, the plastering operations may be started wherever the building frame and cladding work are ready and the temporary supports of the ceiling resting on the wall of the floor have been removed. Ceiling plaster shall be completed before starting plaster to walls.

2:3. Application of plaster:

2.3.1. The plaster about 15x15 cms. Shall be first applied horizontally and vertically at not more than 2 meters intervals over the entire surface to serve as gauge. The surfaces of these gauges shall be truly in plane of the finished plastered surface. The mortar

shall then be applied in uniform surface slightly more than the specified thickness, then brought to a true surface by working a wooden straight edge reaching across the gauges with small upward and sideways movements at a time. Finally, the surface shall be finished off true with a trowel or wooden float according as a smooth or a smooth or a sandy granular texture is required Excessive troweling or overworking the float shall be avoided. All corners, arises, angles and junctions shall be truly vertical or horizontal as the case may be and shall be carefully finished. Hounding or chamfering, corners, arises junctions etc. shall be carried out with proper templates to be size required.

- 2.3.2. Cement plaster shall be used within half an hour after addition of water and mortar or plaster which is partially set shall be rejected and removed forthwith from the site.
- 2.3.3. In suspending the work at the end of the day, the plaster shall be left out clean to the line both horizontally and vertically, when recommencing the plaster, the edges of the old work shall be scraped clean and wetted with cement putty before plaster is applied to the adjacent areas to enable the two to properly join together. Plastering work shall be closed at the end of the day on the body of the wall and nearer than **15 cm.** to any corners or arises. It shall not be closed on the body of features such as plaster bands and cornices not at the corners or arises. Horizontal joints in plaster work shall not also occur on parapet tops and copings as these invariably lead to leakage. No portion of the surface shall be left out initially to be packed up later on.
- 2.3.4. Each coat shall be kept damp continuously till the next coat is applied or for a minimum period of 7 days. Moistening shall commence as soon as plaster is hardened sufficiently. Soaking of walls shall be avoided and only as much water as can be readily absorbed shall be used, excessive evaporation on the sunny or windward side of building in hot air or dry weather shall be prevented by hanging matting or gunny bags on the outside of the plaster and keeping them wet.
- 2.3.5. The plastering work shall be in single coat on brick / concrete walls for interior plastering up to floor two level, finished even and smooth **in C.M. 1:4.**
- 2.3.6 The coat of cement and fine sand mortar of proportion 1:1 (15 mm thick about) shall be applied to the plastered surface with a trowel to provide uniform texture while the base coat is still plastic.
- 2.3.7. In any continuous face of wall the finishing treatment should be carried out continuously and day lo day breaks made to coincide with architectural breaks in order to avoid unsightly Junctions
- 2.3.8. **Curing:** All the plaster work shall be kept damp continuously for a period 7 days.
- 2.3.9. Providing necessary grooves between structural members as directed by Engineer in charge.

3.0. Mode of measurements & payment

- 3.1.** The rate shall include the cost of all materials, labour and scaffolding etc. involved in the operations described under workmanship.
- 3.2.** All plastering shall be measured in square meters unless otherwise specified. Length breadth or height shall be measured correct to a centimeter.
- 3.3.** Thickness of the plaster shall be exclusive of the thickness of the key i.e. grooves or open joints in brick work, stone work etc. or space between laths. Thickness of plaster shall be average thickness with minimum **15 mm** at any point on this surface.
- 3.4.** This item includes plastering for **all floors**.
- 3.5.** The measurement of wall plastering shall be taken between the walls or partition (dimensions before plastering being taken) for length and from the top of floor or skirting to ceiling for height. Depth of cover of cornices if any shall be deducted.
- 3.6.** Soffits of stairs shall be measured as plastering on ceilings, following soffits shall be measured separately.
- 3.7.** For jambs, soffits, sills etc. for openings not exceeding 0.5 sq. met each in area for ends of joints beams, posts, girders, steps etc. not exceeding 0.5 sq.mt each in area and for openings exceeding 0.5 sq.mt and not exceeding 3.00 sq.mt. in each area deductions and additions shall be made in the following manners.
- (a) No deductions shall be made for ends of joints, beams, posts etc. and openings not exceeding 0.5 sq. mt each and no addition shall be made for reveals, jambs, soffits, sills etc. of these openings, for finish to plaster around ends of joints, beams posts etc.
- (b) Deduction for openings exceeding 0.5 sq. mt but not exceeding 3 sq.mt. each shall be made as follows and no addition shall be made for reveals, jambs, soffits, sills etc. of these openings, (i) When both faces of all wall are plastered with same plaster, deduction shall be made for one face only, (ii) When two faces of wall are plastered with different types of plasters or if one face is plastered and the other pointed, deductions shall be made from the plaster or pointing on the side of frame for door, window etc. on which width of reveals is less than that on the other side but no deductions shall be made on the other side. Where width of reveals on both faces of all are equal, deductions of 50% of area of opening on each face shall be made from areas of plaster and / or pointing as the case may be.
- 3.8.** For openings having door frames equal to or projecting beyond the thickness of wall, full deduction for opening shall be made from each plastered face of the wall.
- 3.9.** In case of openings of area above 3 sq.mt. each, deduction shall be made for openings but jambs, soffits and sills shall be measured.
- 3.10** The payment shall be made for a unit of 1.0 sq.mt of work done over and above the finishing of work of base coat.
- 4.0.** The rate shall be for a unit of **one sq. meter**.

Item No:- 17

Providing 10mm thick cement plaster in single coat on brick/concrete walls for interior plastering upto floor two level and finished even and smooth in (i) Cement mortar 1:3 (1-cement:3-sand) Extra over items 58 to 64 for finishing with a floating coat of neat cement slurry.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.17.58.(ii)/P.120 +17.69&17.91/ P.121 +17.94(II)/ P.122 with Mala troveled finish etc. complete. Floor Two Level

The rate shall be for a unit of **one square meter**

Item No:- 18

Providing and laying polished Kota stone slab flooring over 20mm (Average) thick base of cement mortar 1:6 (1-cement : 6-coarse sand) or L.M. 1.1.5 (1-Lime putty :1.5 - coarse sand) laid over and jointed with grey cement slurry mixed with pigment to match the shade of slab including rubbing and polishing etc. complete. (A) 25mm thick

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.14.43 (A) / P.No.98

The payment shall be made on **square Meter** basis of the finished work.

Item No:- 19

Providing and laying 18 mm thick polished granite stone machine cut in single piece (Max. available) in tread,Riser, sill and jambs of door/window frame laid over 10 mm thick cement mortar 1 : 3 (1 cement : 3 coarse sand) and jointed with grey cement slurry with matching pigment incl. rubbing and polishing rounding edge etc. complete colour and shed as approved by architect engineer in charge

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.14.44 / P.No.99 except mirror polished Blue Kota Stone instead of machine Polished granite stone 18mm thick

The payment shall be made on **square Meter** basis of the finished work.

Item No:- 20-21

Providing and laying white glazed tiles 6 mm. Thick in flooring treads of steps and landings laid on a Bed of 12 mm. Thick cement mortar 1:3 (1 cement : 3 coarse sand) pointing in white cleaned jointed with white cement slurry

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.14.29. / P.No.167 except that using for coloured glazed tiles of the size 300 mm x 450 mm x 6 mm of approved brand or any equivalent brand and quality as per directed by Engineer-in-charge instead of white glazed tiles 6mm thick.

The payment shall be made on **square Meter** basis of the finished work.

Item No-22

Providing and laying white glazed tiles 6mm thick skirting risers of steps and dedo on 10mm thick cement plaster 1:3 (1-Cement : 3-Coarse sand) & jointed with white cement slurry.

Water shall conform to M-I. Cement mortar shall conform to M-I 1. tiles shall conform approved make..

2.0. Workmanship

2.1. Preparation of Surface:

In case of brick masonry wall, the joints shall be raked out to a depth of at least 15 mm. while the masonry is being laid. In case of concrete wall the surface shall be chiseled and rough end with wire brushes. The surface shall be cleaned and wetted thoroughly before commencing the laying work.

2.2. Laying

2.2.1. The wall surface shall be covered with 10 mm. thick plaster of cement mortar 1:3 mix and allowed to harden. The plaster shall be rough end with wire brushes both way. The back of tiles shall be floated with grey cement slurry and edges with white cement slurry set in bedding mortar. The tiles shall be gently tapped in position one after the other keeping the joints as thin as possible. Top of skirting or Dedo shall be truly horizontal and the joints vertical or as per required pattern.

2.2.2. Risers of steps, skirting and Dedo shall rest on top of treads or flooring. Where full size tiles cannot be fixed, they shall be cut to the required size and the edges be smoothed.

2.2.3. The joints shall be cleaned and flush pointed with white cement. The surface shall be kept wet for seven days. After curing the surface shall be washed clean.

3M. Mode a/measurements and payment

3.1. The rate shall include the cost of all material and labor required for various operations described above. Risers of steps, skirting and Dedo shall be measured in square metres. Length and height shall be measured along the finished face of the skirting or Dedo including curves, where special such as covers, internal and external angles, etc., used. The length and height shall be measured correct to the centimeter except in case of risers and skirting where height shall be measured correct to 3 mm.

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

Item No-23

Providing and laying Vitrified tiles 8 to 10 mm thick, 24" x 24" in skirting risers of steps and dedo on 10mm thick cement plaster 1:3 (1-cement : 3-coarse sand) and jointed with white cement slurry

1.0. Materials

Water shall conform to M-I. Cement mortar shall conform to M-I 1. tiles shall conform approved make..

2.3. Workmanship

2.4. Preparation of Surface:

In case of brick masonry wall, the joints shall be raked out to a depth of at least 15 mm. while the masonry is being laid. In case of concrete wall the surface shall be

chiselled and rough end with wire brushes. The surface shall be cleaned and wetted thoroughly before commencing the laying work.

2.5. Laying

2.5.1. The wall surface shall be covered with 10 mm. thick plaster of cement mortar 1 '6 mix and allowed to harden. The plaster shall be rough end with wire brushes both way. The back of tiles shall be floated with grey cement slurry and edges with white cement slurry set in bedding mortar. The tiles shall be gently tapped in position one after the other keeping the joints as thin as possible. Top of skirting or dado shall be truly horizontal and the joints vertical or as per required pattern.

2.5.2. Risers of steps, skirting and dado shall rest on top of treads or flooring. Where full size tiles cannot be fixed, they shall be cut to the required size and the edges be smoothed.

2.5.3. The joints shall be cleaned and flush pointed with white cement. The surface shall be kept wet for seven days. After curing the surface shall be washed clean.

3M. Mode of measurements and payment

3.2. The rate shall include the cost of all material and labour required for various operations described above. Risers of steps, skirting and dado shall be measured in square metres. Length and height shall be measured along the finished face of the skirting or dado including curves, where special such as covers, internal and external angles, etc., used. The length and height shall be measured correct to the centimeter except in case of risers and skirting where height shall be measured correct to 3 mm.

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

Item No. 24

Providing and fixing flush door shutters, solid core construction with frame of first-class hardwood with cross board and face veneer or plywood face panels, including anodized aluminum butt hinges with necessary screws. (B) Non-decorative type and block board core anodized aluminum butt hinges in flush door shutters (2) 35 mm thick.

Material:-

1. 35 mm thk. Flush door shall conform to Approved by consultant. Item , Plywood shall conform to Approved by consultant and approved make item. Anodized aluminum butt hinges shall conform to approved make.

2. Laminate both side 1 mm thk. , Stainlesteel fixture like a handle, aldrop , tower bolt stopper conform to approve make .

Workmanship:- the shutter ready to 35 mm thk both side laminate and paint work , fixing proper place stainless steel fixture

As per 10.13 Pg. No.61 Shall be followed for work.

Mode of measurement & payment :-

The rate shall be for a unit of one sq. meter.

Flush door , Laminate , S.S Fixture (Stopper , Aldrop , Tower Bolt , Handle , paint , Hinges rate shall be included.

Item No:- 25

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 along with 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.

1.0 MATERIAL

1.1. FRP Frame size 100x50

1.5 to 2.0 mm thick fire retardant grade FRP skin in depressed panel shall be of approved make as approved by Engineer in charge

FRP skin depressed panel shall be of water proof weather proof termite proof mild acid and alkali proof, sound proof and fire resistance

FRP frame size as per required and 38mm shutter shall be in standard factory made members fabricated in factory including necessary stainless steel fixtures and fastenings of approved brand and make as approved by Engineer in Charge

Whole section shall be of water proof weather proof termite proof mild acid and alkali proof, sound proof and fire resistance

The frame shall be of best quality and free from any defect

1.2. FRP flush single shutter 35mm thick

FRP Shutters of 38 mm thick in standard design of FRP and 3.12 mm hide and dandified molded wood primer coated skin on both side of shutter skin is to be confirmed to ASTM D - 1037 pressed under hot process over wood style 65 x 27 mm top and bottom rail and lock rail 125 mm x 27 mm including stainless steel hinges with necessary aluminum fixture and fastening remaining hole of portion is to be filled up with PUF and shutters is to be finished in gel coat

Whole section shall be of water proof weather proof termite proof mild acid and alkali proof, sound proof and fire resistance

The shutters shall be of best quality and free from any defect

2.0. S. S. FIXTURES AND FASTNINGS

2.1 Hinges,

Hinges shall be of approved make. shall be Free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

The hinges shall be of best quality and free from any defect

2.2 Handles,

Handles shall be of approved make. shall be Free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

The handles shall be of best quality and free from any defect

2.3 Bolts,

All bolts shall be of approved make. shall be Free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

The bolts shall be of best quality and free from any defect

3.0 WORKMANSHIP

3.1. The Work of FRP door shall be done with extreme finishing. The FRP Shutters and granite frame shall be fixed in position in true line and level and shall be fitted as directed by Engineer in charge with all required fixtures and fastenings shall be fitted at right place as shown in the drawing and as directed by Engineer in charge.

3.2. The back of each Stone slab to be fixed shall be smeared with cement paste of matching colour and the Stone slab shall then be gently tapped against the surface, with a wooden mallet. The skirting shall be done only after the fixing is completed. Any pipes coming out of the wall through the dado or skirting shall only be at the intersection of the horizontal and vertical joints. The Stone slab shall not have staggered joints. The joints shall be true to entire line both ways and vertical joints shall be in line with joints or flooring. Stone slab shall be fixed as close as possible to the adjoining tiles and any difference in the thickness of the Stone slab shall be evened out in the cement paste so that all the tiles faces are set in conformity with one another. The skirting shall project uniformly and not more than 6 mm, thickness beyond the finished surface above. Top of skirting or dado shall be truly horizontal. The risers of steps, skirting or dado shall rest on top of treads of flooring. Wherever required the Stone slab shall be cut (saw n) and thin edges smoothed before use.

4.0 Mode of Measurement and Payment

4.1. The unit rate of FRP door shall include the cost of all materials, cost of all necessary fixtures and fastenings, labour charges for fixing frames, doors and fixing the FRP door in wall at the place shown in drawing and as instructed by Engineer in charge, all tools and plant required for assembling and fixing in position, finishing as per direction of the Engineer-in-charge, and all other incidental expenses for preparing door frame and shutter of specified size to complete the door structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and making walls good by plaster patch colour etc as required

4.2. The FRP door shall be measured for its length or width and height, limiting dimensions to those specified on plan or as directed.

4.3. The rate shall be for a unit of **one square meter**.

Item No-26

Providing and fixing window having extruded aluminum Colour Powder Coated section frame main outer size 95mm x 24mm x 1.17mm @ wt.of 0.738 Kg/mt, horizontal Three track member size 92mm x 31.75mm x 1.30mm @ Wt.1.07 Kg/mt, vertical member of size 92mm x 31.75mm

x 1.50mm ,@ Wt. 1.06 Kg/mt with sliding shutters of horizontal member size 40 mmx18mm x1.29mm @ wt.of 0.456 Kg/mt, vertical member of size 40mm x 18mm x 1.29 mm @ wt.of 0.456Kg/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.

Scope of work:- Providing and fixing window having extruded aluminum Colour anodized section frame main outer size 63.50 x 38.10 x 1.95 mm(of Jindal Section no:4605,@ Wt 1.094 Kg / Rmt), horizontal two track member size 61.85 mm x 31.75 mm x 1.20mm (of Jindal Section no: 8687 @ wt.of 0.695 Kg/mt), vertical member of size 61.85 mm x 31.75mm x 1.30 mm (of Jindal Section no:8758 @ wt.of 0.0.659 Kg/mt) with sliding shutters of horizontal member size 40mm x 18mm x 1.29mm (of Jindal Section no:8949 @ wt.of 0.456Kg/mt), vertical member of size 40mm x 18mm x 1.29mm (of Jindal Section no:8947 @ wt.of 0.456Kg/mt/ Section 8948, @ 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.

Mode of Measurement :- The rates shall be paid for unit of Sqm.

Item No.27

Structural steel work (Confirming to IS 4923-1997) riveted, bolted or welded in built-up for all type sections, in framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete as per the structural designs and directions of Engineer in charge.

1.0 MATERIALS:

1.1 Structural Steel:

1.1.1 All structural steel shall conform to I.S. 226-1965. The steel shall be free from the defects mentioned in I.S. 226-1975 and shall have a smooth finish. The material shall have a smooth finish. The material shall be free from loose mill scale, rust pits or other defects affecting the strength and durability. Rivet bars shall conform to I.S. 1148-1973.

1.1.2 When the steel is supplied by the Contractor test certificates of the manufactures shall be obtained according to I.S. 226-1975 and other relevant Indian Standards.

2.0 WORKMANSHIP:

2.1 The M. S. Grill shall be prepared as per the drawings or as directed for fixing to wooden frames of windows etc.

2.2 The grill shall be fabricated to the designs and patterns shown in the drawings and the weight shall be as directed and the joints shall be riveted or welded as shown in the plan or as directed. The grill so formed shall be fixed into the frames of the windows etc., before they are erected in position. The outside strip frame of the grill shall be housed to its full thickness into the recess cut into the frame of the windows etc. The grill shall be fixed to the frame with number of bolts and nuts or screws viz. bolt nut/screw per 30 cm. of the length of outer strip subject to a minimum of 2 nos. on each side of the frame or as indicated in the drawings or as directed.

2.3 The bolts and nuts or screws shall be counter sunk and shall be fixed with the top of their heads flush with the face of frame strips.

3.0 MODE OF MEASUREMENT AND PAYMENT:

3.1 No payment shall be made for weight of screws, bolts, nuts etc. Only weight of grill shall be paid.

3.2 The rate shall be for unit of one Kg.

Item No:-28

Providing and fixing 90 cm Height Stainless Steel Railing made from anticorrosive 304 grade S S pipe of 50 mm dia (16 Gauge) as hand rail with S S 304 grade Baluster of 38 mm dia (16 Gauge) as a vertical support fixed in RCC slab at 1.2m c/c including three horizontal S S pipes of 25 mm dia (16 Gauge) at equal distance fixed by 18.75 mm dia (16 Gauge) S S pipe with baluster including accessories as per detailed drawing as directed etc. complete.

General

Providing and fixing 90 cm Height Stainless Steel Railing made from anticorrosive 304 grade S S pipe of 50 mm dia (16 Gauge) as hand rail with S S 304 grade Baluster of 38 mm dia (16 Gauge) as a vertical support fixed in RCC slab at 1.2m c/c including three horizontal S S pipes of 25 mm dia (16 Gauge) at equal distance fixed by 18.75 mm dia (16 Gauge) S S pipe with baluster including accessories as per detailed drawing as directed etc. complete.

Material

anticorrosive 304 grade S S pipe of 50 mm dia (16Gauge) as hand rail

S S 304 grade Baluster of 38 mm dia for vertical and horizontal support

And including accessories as per detailed drawing as directed etc. complete.

The material shall be free from loose miles scale rust piles or other affective strength and durability.

Workmanship

Fixing 90 cm Height Stainless Steel Railing made from anticorrosive 304 grade S S pipe of 50 mm dia (16 Gauge) as hand rail with S S 304 grade Baluster of 38 mm dia (16 Gauge) as a vertical support fixed in RCC slab at 1.2m c/c including three horizontal S S pipes of 25 mm dia (16 Gauge) at equal distance fixed by 18.75 mm dia (16 Gauge) S S pipe with baluster including accessories and shall be fixing by welding in true line and level and slope the railing shall be powder coats lines as per standards.

If stainless tell wall brackets of required size fixed in wall including providing and fixing the same with stainless steel wall brackets of approved type design and quality as directed by engineering in- charged

Mode of measurement and payment

The item shall be measured for its length limiting dimensions to those specified on place of directed. The rat shall be for a unit of one square meter.

The Payment will be made on Running meter basis of the finished work.

The rate s hall be for all consolidate item of unit of one running meters

Item No:- 29

Providing and fixing PVC SWR Nahni trap IS 14735 for drain - 100 mm diameter with jali of the following nominal diameter of self cleansing design with C.I scread down or hinged grating including the cost of cutting and making good the walls.

The relevant specifications of Building Booklet It. No.23.87 Page No.164 shall be followed expect use PVC SWR Nahni trap IS 14735 for drain - 100 mm diameter with jail instead of cast iron (spun)nahni trap

Item No:- 30

Providing and fixing S.W. gully trap with C.I. grating brick masonry chamber and water tight C.I. cover with frame of 300mm x 300mm size (inside) with standard weight (i) Square mouth traps (B) 150mm x 100mm size P or R type

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.24.19.(I) P.No.176

Item No:- 31

Constructing brick masonry chamber for underground C.I. Inspection chamber and bends with bricks having crushing strength not less than 35Kg. Cm² in C.M. 1:5 precast RCC cover 455mm x 610mm internal dimensions with frame (R.C.C. top slab with 1:2:4 mix (1-cement :2- coarse sand :4-graded stone aggregate 20mm size) foundation concrete 1:5:10 inside plaster 15mm thick with cement mortar 1:3 finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete (i) Inside dimensions 455mmx 610mm and 450mm deep for single pipe line.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No. 24.44(i) P.No.183

Item No:- 32

Providing and fixing screw down bib taps of following size.(A) Brass screw down bib tap polished bright. (i) 15mm dia.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.23.95 (A) II P.No.170

Item No:- 33

Providing and fixing pillar tap, capstan head, screw down high pressure with screws, shanks and back nuts. (i) 40mm dia.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.23.92 (A) P.No.170

Item No:- 34

Providing and fixing pillar tap, capstan head, screw down high pressure with screws, shanks and back nuts. (i) 32mm dia.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.23.89 (A) P.No.170

Item No:- 35-37,38

Providing and fixing wash down water closet (European type, W.C. Pan) with integral P or S trap including jointing the trap with soil pipe in Cement Mortar 1:1 (1-Cement : 1-fine sand) (Seal and cover to be measured and paid for separately) (A) vitreous China Pattern :(i) in white colour

The relevant specifications of Building Booklet It. No.23.112 (A)(I) Page No.165 shall be followed

Mode of measurement-

The item shall be measured and paid on Number basis of consolidated item of work

Item No:- 36

Providing and fixing 12.5 Litres low level flushing cistern with a pair, of C.I. or Mild brackets, complete with fittings such as lead valve less syphon, 15mm nom.nal size brass ball valve with polythene float, C.P brass handle unions and couplings for connections, with inlet, outlet and overflow pipes, 40mm dia. porcelain enamelled flush bend including cutting holes in walls and making good the same connecting the flush bend with cistern and closet (overflow pipe to be measured and paid for separately) (A) Vitreous China (I) In white colour

The low level flushing tank shall be of 12.5 litres capacity. It shall conform to I.S. 774-1971. The flushing vaster shall be of best quality and free from any defects. The flushing tank shall have outlet 32 mm. diameter The outlet shall be connected with W.C. Pan by lean pipe or P.V.C. pipe as specified. The flushing tank shall be provided with inlet and outlet for fixing G.I. inlet pies and over-flow pipes. The flushing castern shall be provided with chromium plated handle for flushing. The flushing tank shall be provided with brackets of cast iron so that it can be fixed on wall at specified height. The brackets shall Conform to I.S. 775-1970.

Item No:- 39

Providing and fixing washbasin with single hole for pillar tap with C.I. or M.S. brackets painted white including sutting holes and making good the same but excluding fittings.(A) Vitreous China:(ii) Flat Back washbasin 550 mm x v 400mm size. (i) In white colour. (A) 32mm dia. and M.I. fisher union for washbasin or sink. (A) 32mm dia.; (A) Vitreous China:(ii) Flat Back washbasin 550 mm x v 400mm size. (i) In white colour.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.23.127. / P.No.167 + It.No.23.135 (A) / P.No.168+It.No 23.136.(A)/ P.No.168 +It.No 23.96.(A)/ P.No.171+It.No.23.95 (A) / P.No.170

Item No:- 43

Providing erecting and fixing double coated Syntex PVC. (ISI) water tank of required capacity each with all necessary fittings and connection etc. complete on terrace.

1.0 MATERIAL

1.1.PVC Water tank

Double coated ISI water tank of specified capacity and of approved in litters of approved make and quality

Net capacity shall be net volume of water stored between the lowest level of overflow and lowest specified level.

1.2. Nipple

Galvanize pipe nipple shall be of approved make and of best quality

1.3. Ball valve

Ball valve shall be of approved make and of best quality

1.4. Connections

Connections shall be of approved make and of best quality

2.0 WORKMAN SHIP

2.1. Tank shall be approved quality and standard make. The material of tank and lead and fittings which may come in contact of water should be such that it does not impart any taste, colour or odour. It does not have any toxic effect and it does not contaminate the water. Thereby making it unpotable.

2.2. The tank shall be fixed properly in a level position and making all required necessary correction like inlet outlet flushing overflow and air vent. Tank shall be satisfying the standards of public health.

3.0 MODE OF MEASUREMENT and PAYMENT

3.1. The unit rate PVC tank shall include the cost of all materials, tools and plant required for lifting to required height with all lead and lift, placing and fixing in position, all required specials and jointing adhesive compound, finishing as per direction of the Engineer-in-charge, and all other incidental expenses for producing PVC water tank work of specified diameter to complete the structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

3.2. The PVC water tank work shall be measured for its number limiting to specified capacity to those specified on plan or as directed. The rate shall be for a unit of one number.

3.3. The payment will be made **on litter basis** of the finished work.

Item No: -44

Providing and supplying in standard length ISI mark rigid unplasticized PVC pipes suitable for potable water with ringgit joint including cost of rings, as per IS specification no. 4985/1988 including all local and central taxes, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to the departmental stores and including cost of jointing material etc. complete. 1.One coupler / ring shall be provided with each full-length pipe cost of which is included in rates below. (C) Test Pressure 6 Kg/cm² (90mm Dia Pipe)

The relevant specifications of Building Booklet It. No.23.8. Page No.162 shall be followed expect use 90 diameter P.V.C conforming to IS 13592-1992 with one end plain and other end socketed with rubber ring, and fittings 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 160 mm diameter x 210 mm length x 196 mm height at every 2000 mm center to center or shall be concealed instead of 6 kgs sq.cm. working pressure polythene pipes.

Item No: -45

Providing and supplying in standard length ISI mark rigid unplasticized PVC pipes suitable for potable water with ring joint including cost of rings, as per IS specification no. 4985/1988 including all local and central taxes, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to the departmental stores and including cost of jointing material etc. complete. 1. One coupler / ring shall be provided with each full-length pipe cost of which is included in rates below. (C) Test Pressure 6 Kg/cm² (110mm Dia Pipe)

The relevant specifications of Building Booklet It. No.23.8.(E) Page No.162 shall be followed except use 110 mm diameter P.V.C (Type B) conforming to IS 13592-1992 with one end plain and other end socketed with rubber ring, and fittings 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 height at every 2000 mm centre to centre instead of 6 kgs sq.cm. working pressure polythene pipes of 50mm

Item No. 46 to 50

Providing laying and jointing in true line and level 15mm dia. U.P.V.C. Pipe (SCH- 40) for cold water including fittings make PRINCE / SUPREME / ASTRAL / FINOLEX or equivalent as approved by Engineer in Charge. Pipe shall be fixed on the wall with the help of clamp at every two metre C/C or shall be cancelled as directed including necessary fittings etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials.

Material :-

UPVC 15 ,25 , 32 , 40 ,50 mm dia. SCH-40 pipe with UPVC with necessary fittings conforming as per IS-13592-92.

Tee/Bend, Plain and Y-Shoe and PVC Clamp are also as per IS.

uPVC has a resistivity of greater than 10¹⁴ Ohm. cm, and has good insulating properties. uPVC has a thermal conductivity of 0.13 W/m/OC, which is only a fraction of the thermal conductivity of steel.

The pipe shall be of make Finolex / Prince / Supreme only as approved by Engineer-in-charge conforming to relevant I.S. specification.

Workmanship:-

Specification shall be followed as per Item No. 23.8, Pg. No. 144 of G.T.S. Booklet for Building works except that work shall be carried out for UPVC (Sch-40) Pipe instead of PVC Pipe.

UPVC Pipe 15 ,25 ,32 , 40 , 50 mm should be fixed with Tee / Bend plain and Y-Shoe with necessary Adhesive / solution. In proper line & level. As directed by Engineer-in-charge.

The uPVC pipes shall have most hygienic means of fluid transportation and capable in fighting attacks by fungi and are not subject to contamination. The inside surface which is extremely smooth, does not support any growth, encrustation or fuming, and no odour or taste is transmitted to the fluid being conveyed.

The uPVC pipes shall have Chemical Resistance, Flexible, Fire Resistance, Electrical Resistance.

Material shall got approved prior to execution of work. Work shall be carried out as per the instruction of consultant / Engineer-in-charge.

Mode of measurements & payment:-

Rates are in inclusive of all types of labour, loading, unloading, fixing, erecting, etc

Rate shall be for a unit of one Rmt

Item No. 51

Providing, laying and jointing in true line and level 160 diameter U.P.V.C (Type B) conforming to IS 13592-1992 with one end plain and other end socketed with rubber ring, & fittings 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 160 mm diameter x 210 mm length x 196 mm height at every 2000 mm center to center 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.

1.0 Materials:-

The P.V.C. shall not attached by various chemicals. It shall be rust proof and does not support combustion. The pipe shall have a minimum thickness of 3.2 mm. The inner surface shall be smooth and restriction free. The U.V. stabilized UPVC type 'B' pipes of 110 mm. diameter with working pressure of 10 Kg. per Sq Cm. shall be used to conform to IS-4985-2000, rubber ring shall conform to IS 5382 to the pipes shall be of best quality and make ,M.S. Bracket as approved by the Engineer in charge.

2.0 Workmanship:-

The pipes shall be fixed securely to the wall with clips as directed. Jointing of pipes shall be done with special quality and rubber ring. All pipes shall be fixed truly vertical and horizontal unless unavoidable. The guide line indicated by the manufacturer regarding handling, transportation, storing, laying and jointing of pipes shall be best in view during execution and as per directed by Engineer in charge.

All soil pipes shall be carried up above the roof and shall have a wire balloon guard or a cowl.

The ventilating pipe or shaft shall be carried out to a height of at least one metre above the outer covering of the roof of the building or in the case of windows in a gable wall or a dormer windows, it shall be carried upto the ridge of the roof or at least two meters above the top of the windows. In case

of flat roof to which access for use is provided, it shall be carried out upto a height of at least one metre above the parapet or two meters measured vertically from the top of any windows in opening which may exist upto a horizontal distance of five meters from the vent pipe into such building and in no case shall be carried out to a height less than three meters.

Where ventilating pipes are carried in pipe shafts, the shafts shall be of a minimum size of one metre. If the shafts roof also used to give light and air to rooms, the ventilating pipes must be carried out to a horizontal distance at roof level not less than five metre from the site of the shaft.

The connection between the main pipe and branch pipes shall be made by using branches and bends with access doors for cleaning.

The waste from lavatories, kitchens basins, sinks, baths and other floor traps shall be separately connected to respective stacks of upper floors. The waste stack of lavatories shall be connected directly to main hole while the waste slack of other shall be separately discharged over gully trap.

Pipe shall be fixed on wall using Bracket @ every 2000 mm center to center keeping pipe line away from wall surface or shall be concealed in walls as directed.

3.0 Mode of measurement and payment:-

The description shall unless otherwise stated be held to include where necessary conveyance and delivery conveyance and delivery handling, unloading, storing, hoisting, all labour for finishing to required shape and size, testing, fitting in position straight cutting and water return of packing etc.

The length shall be measured in running meter basis of finished work. The length shall be taken along the centerline of the pipe and fittings. The pipes fixed to walls ceiling floors etc. shall be measured and paid under this item.

All the work shall be measured in decimal systems as fixed in its places. Dimensions shall be measured to the nearest 0.01-metre.

All measurements of cutting shall unless otherwise stated be held to include the consequent wastage.

In case of fitting of unequal bore the largest bore shall be measured for the test.

Testing of pipe lines fittings and joints include for providing all plant and appliances necessary for obtaining necessary access to the work to be tested and carrying out the test.

The rate include P.V.C. pipe, solution, labours for fixing complete and cutting also wastage.

The rate shall be for a unit of one running metre including all the necessary pipe fitting.

Item No:- 52

Wall painting (two coats) with plastic emulsion paint of approved brand and manufacture on undecorated wall surface to give an even shade including thoroughly brushing the surface free from mortar droppings and other foreign matter and sand papered smooth.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.18.57 / P.No.136

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

Item No:- 53

Providing and fixing tiles roofing with manglore tiles including teak reepers of sizes 50mm x 25mm.

The relevant specification shall be followed as per General Technical specification for Building work booklet I

The rate shall be for a unit of **one Running meter**.

Item No:- 54

Providing and laying water proofing treatment with china mosaic tiles flooring over avg 50 mm C.C. 1:2:4 bedding for maintaining slope for plain and curve surface & 12 mm to 20 mm of broken piece not more than 2.5CM of ceramic / glazed tiles (one for more colour as directed) to be laid over cement mortar bedding of C M 1:3 (1 cement : 3 sand) contain water proofing materials per bag of cement useas specified by manufactured and slops to be tempered to bring mortar up to surface with using white cement and colour pigment including rounding of junctions and extending them up to 15 cm along the wall and curing with bends any patens or design as per drawing and cleaning by using oxalic acid etc. complete.

1.0 Material

Water shall confirm Material Specification no M- 1

Cement shall confirm Material Specification no M- 3

Sand shall confirm Material Specification no M- 6

Crushed stone aggregates shall confirm Material Specification no M- 12

Brick aggregates shall confirm Material Specification no M- 14

White Cement Shall confirm Material Specification no M- 4

Water proofing compound shall be done as per Specification no 17.70 Page No. 121

Chemicals and compounds of approved shall be of approved quality and make. The proportion of the compound shall be of specified proportion as specified by the manufacturer

2.0 Workmanship

Cleaning the slab surface by mechanical means or wire brush to remove old paint, dust, dirt and all loose material

(a) Providing first layer of C.M. 1 4 of 40 mm thickness mixed with water proofing compound at rate prescribed by manufacturer, including putting of brick bats of average thickness 40 mm Well immersed in water laid uniformly on first layer of mortar including applying cement slurry @ rate of 0.08 bag sqm. on fixed layer of brick bats including maintaining necessary slope

(B) providing second layer 40 mm thick C.M 1 4 mixed with water proofing compound as directed, including finishing smooth with cement slurry as directed complete.

(C) after finishing the whole terrace shall be flooded with water for a period of two weeks as directed

The waterproofing material of approved quality shall be mixed with the cement slurry as per specified proportion as directed by the manufacturer of the compound and as directed by The engineer in charge the mixture shall be applied uniformly to the surface in required coats as directed by the engineer in charge

A guarantee bond on appropriately stamped paper shall be given by the contractor to the department in the manner and form prescribed below

FORM OF GUARANTEE BOND

I We (Contractor) hereby guarantee that water proofing work will remain leakage proof for period of 3 years after completion of the work of water proofing treatment as per the terms and conditions of the contract and leakage that might be caused in building where the water proofing treatment is done we hereby Guarantees to make good any loss of damages suffered by the Government of Gujarat and further grantee to redo effective work without claiming any extra cost

2.1 This guarantee shall remain in force for the period of 5 years from the completion of the work under the contract and it shall remain binding to the contractor for period of 5 Years.

2.2 The deposit at the rate of 50% of the cost of this item the running and final bills shall be recovered and retained for the first one years after completion of the guarantee period balance of guarantee period and shall be refunded only after the completion of the guarantee period.

3.0 MODE OF MEASUREMENT and PAYMENT

3.1 The unit rate of water proofing treatment shall include the cost of all materials, tools and plant chemicals and compounds required for water proofing, Applying the same to specified surface as per drawings, finishing, painting with three coats, etc, and all other incidental expenses for producing water proofing work to complete the structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

The rate of water proofing shall include the cost of all labour, materials chemicals and compounds tools and plant scaffolding and all incidental expenses as described herein above.

3.2 The water proofing work shall be measured for its length and width, limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one sq. Meter

3.3 The payment will be made on sq. meter basis of the finished work.

Item No: - 55

Providing & Fixing Bunk Bed, as per refer architect detail Drawing made with Wooden finishes, with laminated/veneer coated shade approved by architect, also include with Spring Bed mattress 5"thk. 5year warranty with, Bedsheet, Blanket and Pillow with standard size as per Architect Selection The rate also includes for all necessary items required to complete the job as per design /drawing and consultant's instructions. Bed Size (6'L x 3'W x 7'H)

Scope of Work

The work includes providing all materials, labor, equipment, and tools necessary for the fabrication, assembly, delivery, and installation of a custom wooden bunk bed. This includes integrated laminate/veneer finishes, heavy-duty hardware, safety features, a 5-inch spring

mattress, and a complete bedding set, all conforming to the architect's detailed drawings and approval.

2. Material Specifications

Component	Material Description	Approved Makes / Standards
Main Framework	Seasoned, chemically treated Hardwood (e.g., Teakwood / Marandi wood) moisture content $\leq 12\%$.	First-grade local premium
Panels & Base	18mm & 12mm Commercial / Marine Grade BWP (Boiling Water Proof) Ply.	Century Ply / Greenly / Kit ply
Visible Finish	1.0mm Premium Laminate OR 4mm Natural Timber Veneer (as per architect's choice).	Greenlam / Century Laminates / Merino
Polishing (Veneer)	Melamine / PU (Polyurethane) Matt or Gloss coat with approved shade stain.	Asian Paints (Acolyte) / ICA
Adhesives	Water-resistant synthetic resin adhesive.	Fevicol SH / Marine
Hardware / Fasteners	Heavy-duty MS/SS concealed brackets, sleek Allen-key bolts, and anti-corrosive screws.	Hafele / Hettich / Ebco

3. Execution & Construction Details

- **Dimensions:** Overall size shall be 6' Length \times 3' Width \times 7' Height' strictly adhering to the architect's spatial layout.
- **Structure:**
 - The main vertical posts and horizontal load-bearing members must be made of solid hardwood to ensure zero structural wobble.
 - The mattress base support must be a minimum 12mm thick BWP plywood, adequately supported by hardwood cross-runners.
- **Safety Features:**
 - The top bunk must feature a continuous safety guardrail (minimum 12" height above the mattress top) on all exposed sides.
 - An integrated wooden ladder with wide, slip-resistant steps must be securely fastened to the main frame.

- All exposed edges of plywood, veneer, or laminate must be neatly chamfered, edge-banded, or lipped with solid wood bidding to avoid sharp corners.
 - **Finishing:** All internal, non-visible surfaces must be finished with a balancing white laminate or 2 coats of wood primer and enamel paint. External surfaces must feature seamless pasting of veneer/laminate without visible air bubbles or glue gaps.
-

4. Bedding & Soft Furnishings

Note: All soft furnishings must strictly match the color palette and fabric material selected by the architect prior to procurement.

- **Mattress (Qty: 2):**
 - Thickness: 5 inches.
 - Type: High-performance Pocket Spring or Bonnell Spring mattress with a high-density foam comfort layer and breathable quilted upholstery.
 - Warranty: Minimum 5-year manufacturer warranty certificates must be handed over to the client upon installation.
 - **Bedsheet (Qty: 2 Sets):** Standard single bed size (60" x 90"), minimum 200 to 300 Thread Count (TC), 100% Cotton, color/pattern as per selection.
 - **Pillow (Qty: 2):** Standard size (18" x 27"), filled with hypoallergenic microfiber/hollow fiber, complete with pillowcases matching the bedsheet.
 - **Blanket/Duvet (Qty: 2):** Standard single size, lightweight, all-weather AC quilts/duvets with washable covers.
-

5. Mode of Measurement and Rate Inclusions

- **Unit of Measurement:** Per Number (Each complete Bunk Bed unit).
- **Rate Includes:**
 - Cost of all wood, ply, laminates, veneers, polishing, adhesives, and premium hardware.
 - Cost of 2 nos. 5" spring mattresses and 2 complete sets of bedding (pillow, sheets, blankets).
 - Fabrication, transport, handling, and flawless onsite installation.
 - Clearing of all debris and handover of the unit in a clean, usable condition.

Item No: - 56

Providing & Fixing Wardrobe Storage unit 900 mm X 450-750 mm table-top along with height as per architectural detail made of 19mm thick plywood, with Laminate shutters/Glass Sliding Sutter, sides and bottom, with middle shelf in 19mm thick plywood with 1mm thick laminate on top face, complete with 5mm teakwood lipping on all exposed edges of plywood and all necessary

accessories including polishing/painting as specified in the detail drawing and to The rate also includes for all necessary items required to complete the job as per design /drawing and client/consultant's instructions.

1. Scope of Work

The work includes providing all materials, labor, tools, and equipment required for the complete fabrication, assembly, and on-site installation of a custom wardrobe storage unit. This features a table-top section, heavy-duty 19mm plywood carcass, laminate or glass sliding shutters, drawers, shelves, solid wood lipping, and premium hardware, completely finished as per the architect's drawing and instructions.

2. Material Specifications

Component	Material Description	Approved Makes / Standards
Carcass & Shelves	19mm Commercial / BWP (Boiling Water Proof) Grade Plywood.	Century Ply / Greenply / Kit ply
Back Panel / Drawer Bottom	6mm or 9mm Commercial / BWP Grade Plywood.	Century Ply / Greenply / Kit ply
External Finish	1.0mm Thick Premium High-Pressure Laminate (HPL).	Greenlam / CenturyLaminates / Merino
Internal Finish	0.8mm White Balancing/Liner Laminate or as specified.	Greenlam / Merino / Equivalent
Sliding Shutters	Option A: 19mm ply with 1mm laminate. Option B: Aluminum profile frame with 5mm toughened/tinted glass.	Hafele / Saint-Gobain / Asahi
Wood Lipping	First-grade seasoned Teakwood (minimum 5mm thick).	First Quality CP Teak
Polishing / Painting	Premium Melamine/PU wood polish for teak wood lipping.	Asian Paints / ICA / Berger

Component	Material Description	Approved Makes / Standards
Hardware / Fittings	Heavy-duty top/bottom sliding tracks, soft-close hinges, drawer slides, handles, and locks.	Hafele / Hettich / Ebco

3. Dimensional Requirements

- **Width:** 900 mm
- **Depth:** Variable from 450 mm to 750 mm (integrated table-top zone) as per detailed design.
- **Height:** Floor-to-ceiling or floor-to-lintel height strictly as indicated in the architectural sections/drawings.

4. Construction & Execution Details

- **Carcass Construction:**
 - The entire outer box, vertical partitions, and horizontal shelves must be built using 19mm thick plywood.
 - Joints must be structurally sound, put together using high-strength synthetic resin adhesive (e.g., Fevicol SH) and countersunk anti-corrosive screws.
- **Table-top Section:**
 - The depth changes smoothly from 450 mm to 750 mm to form an integrated table-top surface.
 - The top surface must be finished with a seamless 1.0mm thick architect-approved laminate, ensuring no sharp edge or visible bubble.
- **Shutters (Sliding Mechanism):**
 - Shutters must slide smoothly on heavy-duty, concealed top-hung or bottom-rolling tracks equipped with a soft-close mechanism.
 - Glass sliding shutters must use a rigid, powder-coated or anodized aluminum frame holding a minimum 5mm thick toughened glass.
- **Edging & Finishes:**
 - All exposed edges of the plywood (including internal shelves, shutters, and carcass edges) must be factory or site-glued with a 5mm thick solid Teakwood lipping.
 - The teakwood lipping must be neatly planed flush with the laminate surface, chamfered/rounded off, and finished with clear Melamine/PU polish to the approved gloss/matt shade.
 - All internal, non-visible sides of the wardrobe must be pasted with a minimum 0.8mm liner laminate for easy cleaning.

5. Hardware & Accessories

The rate must include a complete set of high-grade hardware fittings:

- Anodized aluminum or stainless steel brush-finish handles/profile handles (minimum 150mm–300mm length).
 - Heavy-duty telescopic drawer channels (for any internal drawers).
 - Multipurpose premium locks with duplicate keys.
 - Concealed air vents/louvers if required by the design.
-

6. Mode of Measurement and Rate Inclusions

- Unit of Measurement: Per Number (Each completed unit) OR Per Square Meter/Square Foot of front elevation, as specified in the Bill of Quantities (BOQ).
- The Rate Includes:
 - Supply of all plywood, glass, aluminum profiles, laminates, teakwood, adhesives, and hardware.
 - All carpentry fabrication, edge lipping, polishing of wooden trims, and glass installation.
 - Transport, handling, and secure anchoring/fixing to the wall/floor.
 - Clearing out all wood shavings, dust, and glue marks, handing over the wardrobe in a pristine, "ready-to-move-in" condition.

Item No: - 57

Providing and installing Side Table in the Barracks room are having 600mm X 600 mm along with height as per architectural detail table-top out of post-formed laminate top of approved design with smooth edges and having necessary structural frame made out of pre-laminated ply fins of the same design as the top and SS tubes , 16G, brush finished. HOF/BP-ergo/Haworth or equivalent. Complete and directed by consultant instruction. The rate also includes for all necessary items required to complete the job as per design /drawing and consultant's instructions.

1. Scope of Work

The work includes providing all materials, labor, tools, transport, and equipment required for the complete fabrication, assembly, and flawless installation of a custom-designed 600mm x 600m Side Table in the barracks room area. The unit features a post-formed laminate tabletop,

structural framework made from pre-laminated plywood fins, and heavy-gauge, brush-finished Stainless Steel (SS) tubes, built to premium commercial standards and installed as per the architect's and consultant's instructions.

2. Material Specifications

Component	Material Description	Approved Makes / Brands
Tabletop Substrate	18mm or 25mm thick High-Density Fiber Board (HDF) / Moisture-Resistant (MR) Plywood suitable for post-forming.	Greenpanel / Action TESA / CenturyPly
Tabletop Surface	Post-forming grade Premium Laminate (0.8mm to 1.0mm thick) of approved color and design.	Greenlam / CenturyLaminates / Merino
Structural Fins	18mm thick Pre-Laminated Plywood (both sides laminated) matching the design/shade of the tabletop.	CenturyPly / Greenply / Kitply
Metal Framework	Stainless Steel (SS) Grade 304 Tubes, 16 Gauge (16G thickness), Brush-finished / Dull-satin finish.	Jindal Stainless / Tata Steel / Ratnamani
Adhesives	High-strength heat-resistant contact adhesive for post-forming.	Fevicol SR 998 / Marine / Loba
Hardware / Levelers	Heavy-duty concealed connectors, heavy-duty SS screws, and adjustable nylon-base floor levelers.	Hettich / Hafele / Ebco

3. Dimensional Requirements

- Tabletop Size: 600mm x 600mm (Square)
- Height: As per the detailed architectural drawing (Standard side table height typically ranges between 450mm to 550mm).

4. Construction & Execution Details

- Post-Formed Tabletop:

- The tabletop must be constructed from a solid 18mm/25mm thick base, machine-profiled to create smooth, seamless, rounded edges (typically a half-round or bullnose profile).
- The post-forming grade laminate must be applied using specialized post-forming machinery with uniform heat and pressure to wrap around the edges smoothly. This ensures a completely seamless edge with no visible joints or sharp corners, eliminating water ingress and peeling.
- The underside of the tabletop must be finished with an approved balancing/liner laminate to prevent warping.
- **Under-Structure & Supports:**
 - **Pre-Laminated Fins:** The structural vertical support fins must be precision-cut from 18mm pre-laminated plywood. All exposed straight edges of these fins must be factory PVC edge-banded (minimum 2mm thick) using hot-melt glue to match the laminate design perfectly.
 - **SS Tube Frames:** The 16-gauge (16G) SS 304 tubes must be clean-cut, deburred, and integrated securely with the plywood fins to form a rigid, unyielding structural framework. All welds must be ground smooth, polished, and treated to present a uniform, high-quality brush/satin finish with no visible burn marks or weld spatters.
- **Assembly & Floor Interface:**
 - The entire assembly must use heavy-duty concealed knock-down fittings (e.g., minifix or allen-key bolts) to ensure structural stability over high-traffic usage in barracks.
 - The base of the table legs/fins must be fitted with heavy-duty adjustable nylon/SS floor levelers to compensate for any unevenness in the barracks flooring.

5. Quality & Benchmarking

The overall design, material density, and finish quality must meet or exceed the performance benchmarks set by premium modular furniture manufacturers such as HOF, BP-Ergo, Haworth, or a consultant-approved equivalent.

6. Mode of Measurement and Rate Inclusions

- **Unit of Measurement:** Per Number (Each completed Side Table unit).
- **The Rate Includes:**
 - Supply of post-forming laminates, HDF/plywood substrates, 16G SS tubes, and all premium hardware/levelers.
 - All factory processing, post-forming fabrication, welding, edge-banding, and satin polishing.
 - Safe packing, transportation, handling, and delivery to the barracks site.

- On-site installation, leveling, and cleaning to remove all labels, glue streaks, or dust.
- Final handover in an absolute pristine condition as directed by the consultant.

Item No: - 58

Providing and fixing 75 mm thk Wooden Partition in slab, level and plumb made out of 50 mm X 35 mm thk salwood framework @ 600 mm c/c with 18 mm thk commercial ply fixed on both the sides of the frame work etc. all complete as per architects instructions. , 75mm x 25mm cover moulding in TW as Trim on top and side The rate also includes for all necessary items required to complete the job as per design /drawing and client/consultant's instructions.

1. Scope of Work

The work includes providing all materials, labor, scaffolding, tools, and equipment required for the complete fabrication, assembly, and secure on-site installation of a 75 mm thick Wooden Partition. The partition must be erected perfectly level and plumb, running from the floor slab up to the true ceiling slab (or specified height), featuring a treated Salwood internal grid framework, 18 mm thick commercial plywood cladding on both faces, and premium Teakwood (TW) cover moldings/trims, fully finished as per the architect's detailed drawings and instructions.

2. Material Specifications

Component	Material Description	Approved Makes / Standards
Internal Framing	Seasoned, anti-termite treated Salwood (50mm x 35mm).	First-grade local premium
Cladding / Face Panels	18 mm thick Commercial Grade / BWR (Boiling Water Resistant) Plywood.	CenturyPly / Greenply / Kitply
Cover Moulding / Trim	Premium, seasoned Teakwood (TW) (75mm x 25mm section).	First Quality CP Teak
Anti-Termite Treatment	Oil-based or water-soluble wood preservative chemical.	Termiseal / Pest Control India
Adhesives	High-strength synthetic resin adhesive.	Fevicol SH / Marine
Fasteners & Hardware	Dash fasteners/anchor bolts (for slab anchoring), anti-corrosive wood screws, and headless nails.	Hettich / Fischer / Local Premium

Component	Material Description	Approved Makes / Standards
Finishing Materials	Wood primer, putty, and premium synthetic enamel paint or Melamine/PU polish (as per design).	Asian Paints / ICA / Berger

3. Dimensional & Layout Requirements

- **Total Partition Thickness:** 75 mm (comprising 39mm structural core + 36mm dual-side plywood cladding).
- **Internal Grid Spacing:** Maximum 600 mm center-to-center (c/c) both horizontally and vertically.
- **Teakwood Trim Size:** 75mm x 25mm perimeter molding.
- **Alignment:** Must be verified using digital water-levels and plumb-bobs to ensure absolute vertical alignment.

4. Construction & Execution Details

- **Framework Preparation & Anti-Termite Treatment:**
 - All Salwood members (50mm x 35mm) must be planned straight, free of major knots, shakes, or rot, and seasoned to a moisture content under 12%.
 - Before assembly, all wood surfaces must receive two liberal coats of an approved anti-termite and wood-preservative chemical.
- **Erection of the Framework:**
 - The framework must be securely anchored to the floor slab, side walls, and roof/suspended slab using heavy-duty steel dash fasteners or anchor bolts at intervals not exceeding 600 mm.
 - The internal grid must be formed with secure lap-joints or mortise-and-tenon joints at every intersection (600mm x 600mm grid), creating a rigid, non-yielding structure.
 - Additional horizontal noggings/bracing must be provided at heights where electrical switchboxes, fixtures, or wall-mounted equipment are to be installed.
- **Plywood Cladding:**
 - 18 mm thick commercial plywood sheets must be fixed to both sides of the Salwood frame.
 - The plywood must be applied using a combination of synthetic resin adhesive applied uniformly over the frame faces and anti-corrosive wood screws spaced at 200 mm intervals.

- All joints between plywood sheets must fall exactly on the center line of the Salwood studs, leaving a minor 1mm gap to allow for natural thermal expansion. Joints must be filled with a matching wood-filler/putty.
 - **Teakwood Cover Moulding (Trim):**
 - A 75mm x 25mm seasoned Teakwood cover molding must be fixed as a perimeter trim along the top ceiling junction, wall sides, and skirting line as specified in the drawing.
 - The molding edges must be neatly profiled or chamfered, and corner joints must be precision mitre-cut at exactly 45°.
 - Trims must be fixed using adhesive and headless nails, ensuring all nail heads are punched beneath the wood surface and filled seamlessly.
-

5. Finishing Works

- The Teakwood trims must be thoroughly sanded with progressively fine sandpaper, sealed, and finished with clear Melamine/PU polish or paint to the exact gloss/matt level approved by the architect.
 - The exposed plywood faces must be sanded flat, free of any glue stains or ridges, making them completely ready for final wallpaper, laminate pasting, or painting (painting/laminate spec to be covered under separate relevant BOQ items unless explicitly specified as a unified finish here).
-

6. Mode of Measurement and Rate Inclusions

- **Unit of Measurement:** Per Square Meter or Per Square Foot of the finished, visible vertical surface area.
- **The Rate Includes:**
 - Supply of all Salwood, 18 mm commercial plywood, 75mm x 25mm Teakwood profiles, and chemicals.
 - Anti-termite treatment of all structural wood components.
 - Scaffolding, staging, leveling, and structural anchoring to concrete slabs/walls.
 - All carpentry joinery, mitre-cutting, fixing, gluing, and surface preparation.
 - Polishing or painting of the Teakwood perimeter trims.
 - Clearing out all timber waste, wood shavings, dust, and cleaning the site prior to handover.

Item No: - 59

Providing & fixing sofa made from 60 x 40 mm teak wood framework at every 600-700 mm along the length of the sofa, rubber-foam padding, as well as the fabric of sofa along all sides as per

detail drawing and approved by Architect, approved upholstery & SS legs , as per design etc complete .The rate shall apply for all heights & all levels.As per design by Architect.,The rate includes the cost of all necessary item

1. Scope of Work

The work includes providing all materials, labor, specialized tools, transport, and equipment required for the complete fabrication, assembly, padding, upholstery, and installation of a custom lounge sofa. The unit shall feature a robust structural internal framework made of treated 60mm x 40mm Teak wood members, premium high-density rubber-foam cushioning, architect-approved fabric upholstery on all visible sides, and heavy-duty Stainless Steel (SS) support legs. The work must be executed flawlessly at all heights and levels, strictly conforming to the architect's detailed drawings and instructions.

2. Material Specifications

Component	Material Description	Approved Makes / Standards
Internal Structural Frame	Premium, seasoned, and chemically treated Teak Wood (60mm x 40mm section), free of knots/rot.	First Quality CP Teak / Premium Burma Teak
Frame Panels / Seat Base	12 mm to 18 mm thick Boiling Water Proof (BWP) Marine Grade Plywood.	CenturyPly / Greenply / Kitply
Cushioning Core (Seat)	High-Density Rubber-Foam / Polyurethane (PU) Foam (Minimum 40 to 50 Density) for sag-free comfort.	Sleepwell / Featherlite / Eurofoam
Cushioning Core (Backrest)	High-Resiliency (HR) Soft Foam (Minimum 28 to 32 Density) wrapped in 100 GSM polyester webbing.	Sleepwell / Featherlite
Upholstery Fabric	Premium, heavy-duty upholstery fabric (minimum 30,000 Martindale rub count), stain-resistant.	D'Decor / Raymond / Atmosphere / Approved Make
Support Legs	Stainless Steel (SS Grade 304) heavy-gauge legs, brush-finished or mirror-polished as per design.	Ebco / Hafele / Hettich
Webbing & Springs	High-tensile elastic webbing straps (minimum 50 mm wide) or zig-zag tension springs.	Elite / Standard Premium

Component	Material Description	Approved Makes / Standards
Adhesives & Fasteners	Specialized rubber-foam adhesive, synthetic resin, anti-corrosive wood screws, and heavy pneumatic staples.	Fevicol SR 998 / Fevicol SH

3. Structural Framework & Construction Details

- **Teak Wood Framework:**
 - The structural skeleton of the sofa must be built using heavy 60mm x 40mm Teak wood members.
 - The members must be spaced tightly at intervals of 600 mm to 700 mm along the length of the sofa to guarantee absolute structural rigidity under heavy, continuous load.
 - All joints must be traditional carpentry joints (mortise-and-tenon or heavy lap joints), reinforced with synthetic resin adhesive and heavy-duty, countersunk anti-corrosive wood screws.
- **Seat & Back Suspension:**
 - The seat base frame must be interwoven with high-tensile elastic webbing bands stretched tightly using mechanical web-stretchers, or fitted with heavy-gauge zig-zag springs to prevent future sagging.
 - A protective layer of heavy-duty canvas or thick breathable fabric must be laid over the springs/webbing before placing the foam layer.

4. Padding, Cushioning & Upholstery

- **Rubber-Foam Padding:**
 - The seat padding must consist of a dual-layer system: a firm base layer of 40/50 density rubber-foam for deep support, topped with a softer comfort layer.
 - The backrest and armrests must be padded with high-resiliency 28/32 density foam, carefully contoured and sculpted to match the architect's ergonomic profiles.
 - The entire foam assembly must be wrapped in a layer of 100 GSM polyester wadding/dachron to prevent the fabric from rubbing directly against the foam, ensuring smooth, wrinkle-free upholstery lines.
- **Fabric Upholstery Application:**
 - The architect-approved fabric must be neatly stretched, aligned perfectly with the grain/pattern of the textile, and secured onto all sides of the sofa using pneumatic stapling guns.

- All visible stitching must be perfectly straight, executed with high-strength nylon thread, featuring double-lock stitching or piping/piping-trims where indicated in the architectural detail.
- The bottom underside of the sofa must be neatly sealed with a breathable, dust-resistant black non-woven polypropylene liner cloth.

5. Support Base (SS Legs)

- The sofa must be raised on architect-approved Grade 304 Stainless Steel (SS) legs.
- The legs must feature a flawless, uniform brush-finished/dull-satin surface with no visible grind or weld marks.
- Each leg must be bolted securely into the internal Teak wood corner blocks using heavy-duty metric bolts.
- The bottom of each SS leg must be equipped with integrated, non-marking nylon or rubber sliders to protect the flooring from scratches.

6. Mode of Measurement and Rate Inclusions

- Unit of Measurement: Per Running Meter (RMT) / Running Foot (RFT) along the center-line length of the sofa, OR Per Number (Each individual sofa unit), as specified in the Bill of Quantities (BOQ).
- The Rate Includes:
 - Supply of 60 x 40mm seasoned Teak wood, BWP plywood, high-density rubber foam, and premium upholstery fabric.
 - Supply and installation of heavy-gauge Grade 304 SS legs with floor protectors.
 - All carpentry, web stretching, foam cutting, shaping, and precision tailoring/stitching.
 - Work execution at all heights, floor levels, and locations across the site without any extra lead or lift charges.
 - Final steam-cleaning/vacuuming of the upholstery fabric and handing over the sofa unit in a spotless, premium condition.

Item No: - 60

Providing & supplying Centre/Corner tepoy with teak wood frame and laminated plywood top of 18mm plywood, as per design. Wooden edges/surfaces to be finished in stained melamine polish. Minimum size of table - 600 x 600 x 450 mm with necessary hardware as per design, complete.

1. Scope of Work

The work includes providing all materials, labor, tools, equipment, transport, and handling required for the complete fabrication, assembly, finishing, and delivery of a custom Center or Corner Tepoy. The unit features a premium solid Teak Wood structural frame and an 18mm thick plywood top finished with high-pressure laminate. All exposed wooden surfaces and edges must be finished in a rich, stained melamine polish conforming strictly to the architect's design, detailed drawings, and instructions.

2. Material Specifications

Component	Material Description	Approved Makes / Standards
Structural Frame & Legs	First-grade, seasoned, and chemically treated Solid Teak Wood, free of knots, shakes, or defects. Moisture content	First Quality CP Teak / Premium Grade
Tabletop Substrate	18mm thick Commercial Grade or BWR (Boiling Water Resistant) Plywood.	CenturyPly / Greenply / Kitply
Tabletop Finish	1.0mm thick Premium High-Pressure Laminate (HPL) of approved shade, texture, and design.	Greenlam / CenturyLaminates / Merino
Wooden Edging / Beading	Solid Teak Wood lipping profiles, machine-planed and profile-cut to match the top design.	First Quality CP Teak
Polishing Materials	Premium Melamine Polish (Matt or Gloss finish) with high-grade wood stains.	Asian Paints (MelaMix) / ICA / Woodtech
Adhesives & Fasteners	High-strength synthetic resin adhesive, concealed joinery fasteners, and anti-corrosive wood screws.	Fevicol SH / Marine / Hettich
Floor Protection	Heavy-duty, non-marking nylon or rubber buffers/levelers.	Ebco / Local Premium

3. Dimensional Requirements

- Length: Minimum 600 mm
- Width: Minimum 600 mm
- Height: Minimum 450 mm

- *(Final dimensional variations to be executed strictly as per the detailed architectural drawings.)*
-

4. Construction & Execution Details

- **Teak Wood Framework & Joinery:**
 - The under-structure, main supporting rails, and legs must be crafted from solid, hand-selected Teak Wood members of structural dimensions specified in the drawing.
 - All structural joints must be executed using traditional, high-strength carpentry joinery (such as mortise-and-tenon or heavy lap joints), reinforced with synthetic resin adhesive and concealed countersunk screws. No exposed screw heads are permitted on visible wooden faces.
 - **Tabletop Fabrication:**
 - The core of the tabletop must be made from a single piece of 18mm thick plywood to prevent warping.
 - The top surface must be finished with a flawless application of 1.0mm thick architect-approved laminate, pressure-glued uniformly without air bubbles, ripples, or glue telegraphing.
 - The underside of the plywood must be sealed with a balancing/liner laminate to ensure structural stability over time.
 - **Edging & Profiles:**
 - All exposed edges of the 18mm plywood top must be lipped with a solid Teak Wood profile.
 - The Teak wood lipping must be planed perfectly flush with the laminate surface and smoothly rounded or chamfered to eliminate sharp corners.
 - **Stained Melamine Polishing:**
 - All solid Teak wood legs, framework, and edge lipping must be thoroughly machine-sanded and hand-sanded with progressively fine sandpaper (up to 320 grit) to achieve an ultra-smooth base.
 - An architect-approved wood stain must be applied uniformly to achieve the desired tone (e.g., walnut, charcoal, natural teak, or dark oak).
 - The surfaces must then be sealed and finished with a minimum of 2 coats of premium Melamine Polish to provide a durable, scratch-resistant, and heat-resistant barrier. The final finish must be completely free of runs, brush marks, or dust inclusions.
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5. Hardware & Floor Protection

- The base of each Teak wood leg must be fitted with integrated, heavy-duty nylon buffers or adjustable glides to protect the flooring from scratches and allow easy movement.

- Any necessary knock-down or concealed joining hardware must be of heavy-gauge, rust-resistant material.
-

6. Mode of Measurement and Rate Inclusions

- **Unit of Measurement:** Per Number (Each completed Tepoy unit).
- **The Rate Includes:**
 - Supply of all premium solid Teak wood, 18mm plywood, 1.0mm laminate, and specialized adhesives.
 - All carpentry fabrication, joinery, edge-beading, and profiling.
 - Surface preparation, staining, and application of the high-grade melamine polish finish.
 - Supply and installation of floor protection buffers.
 - Safe packing, transportation, handling, site delivery, and placement.
 - Cleaning and wiping down the unit to present it in a pristine, handover-ready condition as directed by the consultant.

Item No.: - 61 to 133 (Electric Work)

For Item No. 61 to Item No. 133 specifications shall be followed as per attached Specifications of Electrical work.

Sign of Contractor

**Executive Engineer
Tapi (R & B) Division
Vyara**