

NAME OF WORK: -

Construction of new Chief Minister House Deputy Superintendent of Police office building at Minister Enclave, Gandhinagar.(Providing additional facilities in Minister Enclave, Gandhinagar)

ITEM WISE SPECIFICATION

Item No 1 Excavation for foundation Up to 1.50 m depth including sorting out and stacking of the useful materials and disposing off the excavated stuff up to 50 meter lead. (A) loose or soft soil.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It.No.4.0.0. (A) P. No.21.**

Item No 2 Excavation for foundation from depth 1.50 m to 3.00 m including sorting out and stacking of the useful materials and disposing off the excavated stuff up to 50 metre lead. (B) Dense or Hard soil.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It.No.4001 (B) P. No. 25**

Item No 3 Excavation for foundation from depth 3.00 m to 5.00 m including sorting out and stacking of the useful materials and disposing off the excavated stuff up to 50 metre lead. (B) Dense or hard soil.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It.No.4002 (B) P. No. 26**

Item No 4 Filling available excavated Earth (Excluding Rock) in trench plinth side of foundation etc. in layer not exceeding 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.27**

Item No 5 Filling in plinth with sand under floors including watering, ramming consolidating and dressing etc. complete.

The natural sand shall be obtained from river or nala or sea. It shall be clear, sound, properly, graded, free from organic materials silt clay etc. and shall be got approved by the Engineer-in-charge. The natural sand shall be obtained and brought from the source approved by the Engineer-in-charge. The material shall be well graded.

The sand to be used for the work shall have C.B.R. not less than 10% and shall be got approved from the engineer-in-charge before collection at the site of work.

Stacking shall be done by filling in the standard steel boxes of 2 m x 1.5 m x 0.5 m size which shall be supplied by the Department if available on rent. Otherwise contractor shall make his own arrangements. No deduction

for voids shall be made from the gross measurements. Where any doubt exists as to whether the quantity of stacks of sand is not confirming with the cubical content of the standard pharas (2 m x 1.5 m x 0.5 m) shall be got corrected by the contractor if so ordered by the Engineer-in-charge for which no extra payment shall be claimed by the contractor. If the quantity of sand in any stack is found less than the standard measurement box then the entire collection shall be paid on the basis of the quantity so found. Regular stacks shall be done by the contractor on a fairly level ground.

The payment shall be on cubic meter basis without deduction for voids. The contractor shall maintain all stacks in regular and proper size till the whole materials is not measured and finally accepted by the Department. The spreading of materials shall not be allowed till the materials are fully stacked and completed.

The rate includes cost of collection, conveyance to the site with all lead and lift and filling the boxes including all labour, tools, equipment and other incidental expenses. The rates quoted are inclusive of all such tools, duties, fees, royalties, taxes, etc.

Mode of Measurement and Payment:

The item shall be measured and payment shall for unit of **one cubic meter**

Item No 6 Filling in foundation and plinth with murrum or selected soil in layers of 20 cm Thickness including watering, ramming 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.28

Item No 7 Anti-Termite System: Providing and laying of permanent piping technology anti termite treatment before flooring work by installing LLDP (Low linear density polyethylene) tube of 8 mm O.D. & 6.4 mm I.D. with inbuilt pressure compensation chip every 30 cm interval in the tube, having working pressure of 2 Kg/cm² and release rate of 1.9 Ltr/hour fixed by P-clips and nails. The LLDP pipe shall be installed at the entire periphery of the building and at internal network of building at a depth of 20 to 200 mm under floor at every 2 to 3 mtr. c/c distance (adjusted as per building layout) & Ends of loop pass through a PVC elbow of minimum 32 mm ID at junction box of wall and floor level, entering into a steel reinforced grooved flexible pipe of minimum 22 mm ID leading into junction box and the loops shall terminate in junction boxes & test every junction during injecting chemicals for termite control treatment. The anti-termite chemical Imidacloprid 30.5% SC mix as per IS-6313 (part III) shall be injected by the pressure pump diluted with water @ 10.5 ml/5 ltr of water at the rate of 2 Kg/sq.cm @ 5 Ltr/SMT. The contractor shall submit approved line plan for piping system and junction boxes dully approved by Engineer-in-Charge with bond of 5 year warranty. (i)Anti Termite chemical injected area (Chemical injecting incl. labour cost)

The relevant specifications of Building Booklet It. No.20.00.9.+22.00.10+22.00.11 Page No139 shall be followed as well as following points:-

Anti-Termite System: Providing and laying of permanent piping technology anti-termite treatment before

flooring work by installing LLDP (Low linear density polyethylene) tube of 8 mm O.D. & 6.4 mm I.D. with inbuilt pressure compensation chip every 30 cm interval in the tube, having working pressure of 2 Kg/cm² and release rate of 1.9 Ltr/hour fixed by P-clips and nails. The LLDP pipe shall be installed at the entire periphery of the building and at internal network of building at a depth of 20 to 200 mm under floor at every 2 to 3 mtr. c/c distance (adjusted as per building layout) & Ends of loop pass through a PVC elbow of minimum 32 mm ID at junction box of wall and floor level, entering into a steel reinforced grooved flexible pipe of minimum 22 mm ID leading into junction box and the loops shall terminate in junction boxes & test every junction during injecting chemicals for termite control treatment. The anti-termite chemical Imidacloprid 30.5% SC mix as per IS-6313 (part III) shall be injected by the pressure pump diluted with water @ 10.5 ml/5 ltr of water at the rate of 2 Kg/sq.cm @ 5 Ltr/SMT. The contractor shall submit approved line plan for piping system and junction boxes dully approved by Engineer-in-Charge with bond of 5 year warranty.(i)Anti Termite chemical injected area (Chemical injecting incl. labour cost)

Contractor shall submit approved line plan for General insecticide pest control treatment approved By Engineer-in- charge with bond of 5 Years warranty.

The rate shall be measured of including all material and labour work charge included.

Mode of Measurement and Payment:

The Item shall be measured and payment for a unit of finished work in Sq mt

Item No 8 Providing and laying controlled cement concrete M.150 for curing complete including cost of formwork and excluding reinforcement for reinforced concrete work in (A) Foundations, footings, Base of columns and Mass concrete. PCC

The relevant specification shall be followed as per General Technical specification for Building work booklet It. No. 5.8.1. P. No. 38 & It. No. 9.1 (A). P. No. 54

Item No 9 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 foundation footings, base of columns and mass concrete.

The relevant specification shall be followed as per General Technical specification for Building work booklet It. No. 5.8.3 (A). P. No. 40 & It. No. 9.1 (A). P. No. 54

Item No 10 Providing and laying controlled cement concrete M-250 for curing complete including cost of formwork but excluding the cost of reinforcement for reinforced concrete work in Columns, pillars, posts and struts For All Floor Level.

The relevant specification shall be followed as per General Technical specification for Building work booklet It. No. 5.8.3 (D). P. No. 40 & It. No. 9.1 (G). P. No. 56

Item No 11 Providing and lying controlled concrete M-200 and curing complete including cost of form work but excl. reinforcement for reinforced concrete work in Grade Slabs

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 5.8.2 (C). P. No. 40.**

Item No 12 Providing and lying controlled concrete M-250 and curing complete including cost of form work but excl. reinforcement for reinforced concrete work in Slabs For All Floor Level.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 5.8.3 (C). P. No. 40 & It. No. 9.1 (B) (I). P. No. 56**

Item No 13 Providing and lying controlled concrete M-250 and curing complete including cost of form work but excl. reinforcement for reinforced concrete work in Plinth Beam & Beams For All Floor Level.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 5.8.3 (C). P. No. 40 & It. No. 9.1 (H) (I). P. No. 56**

Item No 14 Providing and lying controlled concrete M-250 and curing complete including cost of form work but excl. reinforcement for reinforced concrete work in Lintel For All Floor Level.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 5.8.3 (C). P. No. 40 & It. No. 9.1 (H) (I). P. No. 56**

Item No 15 Providing and lying controlled concrete M-250 and curing complete including cost of form work but excl. reinforcement for reinforced concrete work in Chajjas For All Floor Level.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 5.8.3 (C). P. No. 40 & It. No. 9.1 (L). P. No. 57**

Item No 16 Providing and lying controlled concrete M-250 and curing complete including cost of form work but excl. reinforcement for reinforced concrete work in Sill / Coping For All Floor Level.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 5.8.3 (C). P. No. 40 & It. No. 9.1 (J). P. No. 57**

Item No 17 Providing and laying TMT Bar Fe 500D reinforcement for RCC work including bending, binding and placing in position complete for all floors.

GENERAL

This work shall consist of furnishing and placing TMT Fe-500D Conforming to IS 1786:2008 reinforcement, bars (intentioned) of the shape and dimensions shown on the drawings and conforming to these

Specifications or as approved by the Engineer in charge.

MATERIAL

TMT Bars

Reinforcements may be either TMT Fe-500D tensile steel, high strength deformed bars. They may be uncoated or coated with epoxy or with approved protective coatings.

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

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

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

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

Pitch

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

Binding wire

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

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

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

PROTECTION OF REINFORCEMENT

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.

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.

Workmanship

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.

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

BENDING OF REINFORCEMENT

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

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

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.

PLACING OF REINFORCEMENT

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.

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.

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

In case of beam an 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.

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.

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.

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.

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

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.

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

Lapping

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

Welding

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.

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.

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

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 bend 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

Unless otherwise specified a 'U' type hook at the end of each bar shall invariably be provided to main

reinforcement. The radius of the bane shall not be less then twice the diameter of the round bar and the length of the straight part of the bar beyond the end of the curve shall be at least four times of the diameter of the round bar. In case of bars which are not round and in case of deformed bars, the diameter shall be taken as the diameter of circle having an equivalent effective area. The hooks shall be suitably encased to prevent any spiting of the concrete

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

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.

Whenever indicated on drawing or desired the Engineer in charge bars shall be joined by coupling which shall have a cross section sufficient to transmit the full stresses of bars The end of the bars that are joined 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

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 arc 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

MODE OF MEASUREMENTS & 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.

Mode of Measurement and Payment:

The item shall be measure and rate shall be for a unit of One Kg.

Item No 18 Providing cement vata (10cm. x 10 cm. size) quarter round in cement mortar 1:1 including neat cement finishing, watering etc. complete.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It.**

No. 17.0.0.1 P.No.109

Mode of Measurement and Payment:

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

Item No 19 **Brick work using common burnt clay conventional building bricks having crushing strength not less than 35 Kg/Sqm. in Foundation and Plinth in cement mortar 1:6 (1 cement : 6 fine sand) including curing etc. complete.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It. No. 6.13 (B) P.No.44.

Mode of Measurement and Payment:

The item shall be measure and rate shall before a unit of one cubic meter

Item No 20 **Brick work using common burnt clay conventional building bricks having crushing strength not less than 35 Kg/sqcm. in Super structure for All floors in cement mortar 1:6 (1 cement : 6 fine sand) including curing etc. complete.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.6.19.(B) P.No.46 + 6.20 / P.46 except that using for cement mortar 1:6 (1cement 6 fine sand) instead cement mortar 1;5 (1cement 5 fine sand)

Mode of Measurement and Payment:

The item shall be measure and rate shall be for a unit of one cubic meter

Item No 21 **Half brick masonry in common burnt clay conventional building bricks having crushing strength not less than 35 Kg/Sq.cm. in C.M. 1:4 (1 cement : 4 coarse sand) including curing etc. complete for all floors.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.6.30. (i) (B) P.No.46 + 6.33(B) /P48.

Mode of Measurement and Payment:

The item shall be measure and rate shall before a unit of one square meter

Item No 22 **Providing 10 mm thick Mala cement plaster with 1x1 cm grooves in single coat on brick/concrete wall/ceiling for interior plastering upto floor two level finished even and smooth including scaffolding, curing etc. complete. In Cement mortar 1:3(1 cement: 3 fine sand) for all floors.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.17.58.(II)/P.105 +17.69. P1 106 & 17.91/ P.107+17.94(II)/ P.107 For All Floor coat 10mm ceiling

Mode of Measurement and Payment:

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

Item No 23 **Providing 20 mm thick double coat Mala cement plaster with 1x1 cm grooves on interior brick/concrete work for plastering comprising of base coat of 12 mm thick cement plaster in Cement mortar 1 : 4 (1 cement : 4 coarse sand) in rough finishing and 8 mm thick top coat of cement mortar 1 : 2 (1 cement : 2 coarse sand) finished with trowel including scaffolding curing and 1 cm x 1 cm grooves at junction of structural members etc. complete for all floors.**

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

It.No.17.95/P.No.107 except that using for with 1x1cm grooves on interior brick / concrete work for 20mm thick double coat mala cement plaster base coat of 12 mm thick cement plaster in cement mortar (1 Cement: 4 coarse sand) in rough finishing and 8 mm thick top coat of cement mortar 1:2 (1 Cement: 2 Coarse sand) finished etc. comp. For Ground floor instead of 20mm thick sand face cement plaster base coat of 12 mm thick cement plaster in cement mortar (1 Cement : 3 coarse sand) in rough finishing and 8 mm thick top coat of cement mortar 1:1 (1 Cement : 1 Coarse sand) All floor

Mode of Measurement and Payment:

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

Item No 24 20 mm thick double coat sand faced with 1x1 cm grooves cement plaster on walls at any height consisting of 12 mm thick backing coat of C.M. 1:3 (1 cement : 3 sand) and 8 mm thick finishing coat of C.M. 1:1 (1 cement :1 sand) etc. complete.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.17.95 P.No.107 with sand faced cement Gutka plaster 1x1cm Groves at junction of structure member etc. complete.

Item No 25 Finishing wall with 100% acrylic emulsion weatherproof paint on wall surface to give an required shape even shade after thoroughly brushing the surface to remove all dirt, and remains of loose powdered materials etc. complete for any height as directed by Architect.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.18.51 P.No.119. For weather proof exterior 100% acrylic emulsion paint for All Floor

Mode of Measurement and Payment:

The item shall be measure and rate shall be for a unit of one Sq.Mt.

Item No 26 Wall painting (two coats) with plastic emulsion paint of approved brand and manufacture on new wall surface to give an even shade including two coats of putty & two coats of primer of approved brand including thoroughly brushing the surface free from mortar dropping and other foreign matter and sand papered smooth for all floors as directed by Architect.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.18.57 / P.No.120

For Lapy

1.0. Materials :

1.1. (Putty) and primer shall be of approved brand and manufacture. The Lapy (Putty) shall be required colour and shade and the same shall conform to I.S. 428-1969.

2.0. Workmanship:

2.1. Scaffolding: Where scaffolding is required, it shall be erected in such a way that as far as possible no part of scaffolding shall rest against the surface to be paint. A properly secured strong and well tied suspended platform

(Joola) may be used for Lapy (Putty). Where ladders are used, pieces of old gunny bags shall be tied at top and cotton to prevent scratches to the walls and floors. For Lapy (Putty) to ceiling, proper stage scaffolding shall be erected where necessary.

2.2. Preparation of surface :

2.2.1. The undecorated surface to be Lapy (Putty) shall be thoroughly brushed off from dust, dirt, grease, mortar dropping and other foreign matter and sand papered smooth. New plaster surface shall be allowed to dry for atleast 2 months before applications of Lapy (Putty).

2.2.2. All unnecessary nails shall be removed. Pitting in plaster shall be made good with plaster of paris mixed with dry Lapy (Putty) of colour to be used. The surface shall then be rubbed down again with a fine grade sand paper and made smooth. A coat of Lapy (Putty) shall be applied over the patches. The surface shall be allowed to dry thoroughly before the regular coat of Lapy (Putty) is allowed. The surface affected by moulds, moss, fungi algae lichens, efflorescence etc. shall be treated in accordance with I.S. 2395 (Part I) 1966. Before applying Lapy (Putty), any unevenness shall be made good by applying putty made of plaster of paris mixed with water on entire surface including filling up the undulation and then sand papering the same after it is dry. 2.3. Priming coat:

2.3.1. A priming coat or Lapy (Putty) prime of approved manufacture and shade shall be applied over the papered surface in case of new work on undecorated surface. If the Lapy (Putty) priming is done after the wall surface dries completely, the Lapy (Putty) primer shall be applied.

2.3.2. Application of Primer shall be done as under: The primer shall be applied with a brush on the clean dry and smooth surface. Horizontal strokes shall be given first and vertical strokes shall be applied immediately afterwards. This entire operation will constitute one coat. The surface shall be finished as uniformly as possible leaving no brush marks. It shall be allowed to dry for at least 48 hours before oil bound Lapy (Putty) or Paint is applied.

2.3.3. Oil bound Lapy (Putty) is not recommended to be completion of wall plaster.

2.4. Preparation of Lapy (Putty) : applied within six months of the 2.4.1. The Lapy (Putty) shall be diluted with water or any other prescribed thinner in a manner recommended by the manufacture only. Sufficient quantity of Lapy (Putty) required for a day's work shall be prepared.

2.5. Application of Lapy (Putty) coat:

2.5.1. For undecorated surfaces, after the primer coat is dried for at least 48 hours, the surface shall be lightly sand papered to make it smooth for receiving the Lapy (Putty), taking care not to rub out the priming coat. All loose particles shall be dusted off after rubbing. Minimum two coats of Lapy (Putty) shall be applied with brushes in horizontal strokes followed immediately by vertical strokes which together shall constitute one coat. The subsequent coats shall be applied after a time interval of atleast 24 hours between consecutive coats to permit proper drying of the proceeding coat. The finished surface shall be even and uniform without patches, brush marks, Lapy (Putty) drops etc.

2.5.2. Sufficient quantity of Lapy (Putty) shall be mixed to finish one room at a time. The application of a coat in each room shall be finished in one operation and no work shall be started in any room which cannot be completed on the same day.

2.5.3. 15 cm. double bristled Lapy (Putty) brush shall be used. After day's work brushes shall be thoroughly washed in hot water soap solution and hung down to dry. Old brushes which are dirty and caked! with Lapy (Putty) shall not be used on the work.

2.6. Protective measurements : The surfaces of doors, windows, floors, articles of furniture etc. and such other parts of the buildings as are not to be Lapy (Putty) shall be protected from being splashed upon. Such surfaces shall be cleaned of Lapy (Putty) splashes if any.

3.5 Specifications for Curing, Finishing, Precautions,

Mode of Measurement and Payment:

The item shall be measure and rate shall be for a unit of one square meter

Item No 27 Painting (two coats) with plastic emulsion paint of approved brand and manufacture on Ceiling and sloping surface to give an even shade including two coats of putty & two coats of primer of approved brand including thoroughly brushing the surface free from mortar dropping and other foreign matter and sand papered smooth for all floors as directed by Architect.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.18.57 / P.No.120 & It.No.18.60 / P.No.121.

For Lapy

1.0. Materials :

1.1. (Putty) and primer shall be of approved brand and manufacture. The Lapy (Putty) shall be required colour and shade and the same shall conform to I.S. 428-1969.

2.0. Workmanship:

2.1. Scaffolding: Where scaffolding is required, it shall be erected in such a way that as far as possible no part of scaffolding shall rest against the surface to be paint. A properly secured strong and well tied suspended platform (Joola) may be used for Lapy (Putty). Where ladders are used, pieces of old gunny bags shall be tied at top and cotton to prevent scratches to the walls and floors. For Lapy (Putty) to ceiling, proper stage scaffolding shall be erected where necessary.

2.2. Preparation of surface :

2.2.1. The undecorated surface to be Lapy (Putty) shall be thoroughly brushed off from dust, dirt, grease, mortar dropping and other foreign matter and sand papered smooth. New plaster surface shall be allowed to dry for atleast 2 months before applications of Lapy (Putty).

2.2.2. All unnecessary nails shall be removed. Pitting in plaster shall be made good with plaster of paris mixed with dry Lapy (Putty) of colour to be used. The surface shall then be rubbed down again with a fine grade sand paper and made smooth. A coat of Lapy (Putty) shall be applied over the patches. The surface shall be allowed to dry thoroughly before the regular coat of Lapy (Putty) is allowed. The surface affected by moulds, moss, fungi algae lichens, efflorescence etc. shall be treated in accordance with I.S. 2395 (Part I) 1966. Before applying Lapy (Putty), any unevenness shall be made good by applying putty made of plaster of paris mixed with water on

entire surface including filling up the undulation and then sand papering the same after it is dry. 2.3. Priming coat:

2.3.1. A priming coat or Lapy (Putty) prime of approved manufacture and shade shall be applied over the papered surface in case of new work on undecorated surface. If the Lapy (Putty) priming is done after the wall surface dries completely, the Lapy (Putty) primer shall be applied.

2.3.2. Application of Primer shall be done as under: The primer shall be applied with a brush on the clean dry and smooth surface. Horizontal strokes shall be given first and vertical strokes shall be applied immediately afterwards. This entire operation will constitute one coat. The surface shall be finished as uniformly as possible leaving no brush marks. It shall be allowed to dry for at least 48 hours before oil bound Lapy (Putty) or Paint is applied.

2.3.3. Oil bound Lapy (Putty) is not recommended to be completion of wall plaster.

2.4. Preparation of Lapy (Putty) : applied within six months of the 2.4.1. The Lapy (Putty) shall be diluted with water or any other prescribed thinner in a manner recommended by the manufacture only. Sufficient quantity of Lapy (Putty) required for a day's work shall be prepared.

2.5. Application of Lapy (Putty) coat:

2.5.1. For undecorated surfaces, after the primer coat is dried for at least 48 hours, the surface shall be lightly sand papered to make it smooth for receiving the Lapy (Putty), taking care not to rub out the priming coat. All loose particles shall be dusted off after rubbing. Minimum two coats of Lapy (Putty) shall be applied with brushes in horizontal strokes followed immediately by vertical strokes which together shall constitute one coat. The subsequent coats shall be applied after a time interval of at least 24 hours between consecutive coats to permit proper drying of the proceeding coat. The finished surface shall be even and uniform without patches, brush marks, Lapy (Putty) drops etc.

2.5.2. Sufficient quantity of Lapy (Putty) shall be mixed to finish one room at a time. The application of a coat in each room shall be finished in one operation and no work shall be started in any room which cannot be completed on the same day.

2.5.3. 15 cm. double bristled Lapy (Putty) brush shall be used. After day's work brushes shall be thoroughly washed in hot water soap solution and hung down to dry. Old brushes which are dirty and caked with Lapy (Putty) shall not be used on the work.

2.6. Protective measurements : The surfaces of doors, windows, floors, articles of furniture etc. and such other parts of the buildings as are not to be Lapy (Putty) shall be protected from being splashed upon. Such surfaces shall be cleaned of Lapy (Putty) splashes if any. 3.5 Specifications for Curing, Finishing, Precautions,

Mode of Measurement and Payment:

The item shall be measured and rate shall be for a unit of one square meter

Item No 28	Providing and laying 600x600 mm' Polished vitrified 8 mm thick tile (soluble Salt) flooring of Standard Company pattern ,Colour and Shade laid on 20 mm thick cement mortar 1:6 (1 cement : 6 coarse sand) on new surface and jointed with coloured cement slurry including finished with flush pointing & cleaning the surface etc complete for all floors as directed by Architect or Engineer in charge.
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The Item shall be executed as per the relevant specifications of general technical specification for building work booklet Item No.14.43(A)/ page No. 86 except that using P & L 600x600 mm polished vitrified 8 mm thick tile flooring over 20 mm (average) base of cement mortar 1:6 (1cement : 6 coarse sand) on new surface or fixing on existing flooring by adhesive materials and jointed with colour cement slurry including finished with flush pointing & cleaning the surface etc. instead of kotah stone and 12mm thick base of cement mortar shall be applied instead of 10mm thick. Including finished with flush pointing & cleaning the surface etc. complete for polished vitrified tile as approved by engineer in charge.

Mode of Measurement and Payment:

The Item shall be measured as finished work in Sqm.

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

Item No 29 Providing and laying Polished vitrified 8 mm thick tile (soluble Salt) of Standard Company pattern ,Colour and Shade in Skirting laid on 10 mm thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with white cement slurry with matching pigments including cleaning etc. complete for all floors as directed by Architect or Engineer in chage.

The relevant specifications of Building Booklet It. No.14.32/ Page No.84 shall be followed except that using P & Polished vitrified 8 mm thick tile in skirting risers of steps and dedo on 10 mm thick cement plaster 1:3 (1cement : 3 coarse sand) and jointed with white cement slurry instead of glazed tiles 6 mm thick and 12mm thick bed.

Mode of Measurement and Payment:

The Item shall be measured as finished work in Sqm.

The rate shall be for a unit of one Square meter

Item No 30 P & L 600 mm x 600 mm vitrified 8 mm thick tile (Porcelin) flooring over 20 mm (average) base of cement mortar 1:6 (1 cement: 6 coarse sand) on new surface or fixing on existing flooring by adhesive material including dismantling of existing flooring and jointed with color cement slurry including finised with flush pointing & cleaning the surface etc. complete for antiskit

The Item shall be executed as per the relevant specifications of general technical specification for building work booklet Item No.14.43(A)/ page No. 86 except that using P & L 600x600 mm polished vitrified 8 mm thick tile (Porcelin) antiskid flooring over 20 mm (average) base of cement mortar 1:6 (1cement : 6 coarse sand) on new surface or fixing on existing flooring by adhesive materials and jointed with colour cement slurry including finished with flush pointing & cleaning the surface etc. instead of kotah stone and 12mm thick base of cement mortar shall be applied instead of 10mm thick. Including finished with flush pointing & cleaning the surface etc. complete for polished vitrified tile as approved by engineer in charge.

Mode of Measurement and Payment:

The Item shall be measured as finished work in Sqm.

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

Item No 31 Providing and laying white or coloured / printed Vitrified tiles in different colors of 1st quality of Bell/johnson /Asia /Kajaria /Somani brand of 6 to 8 mm. thick and 1200 x 600 mm size in skirting, risers of step and dedo on a bed of 10 mm. thick cement mortar 1:3 (1 cement : 3 coarse sand) finished with flush pointing with match as approved by Engineer in charge.

The relevant specifications of Building Booklet It. No.14.32/ Page No.84 shall be followed except that using P & L Glazed vitrified 8 mm thick tile in skirting risers of steps and dedo on 10 mm thick cement plaster 1:3 (1cement : 3 coarse sand)and jointed with white cement slurry instead of glazed tiles 6 mm thick and 12mm thick bed.

Mode of Measurement and Payment:

The Item shall be measured as finished work in Sqm.

The item shall be measure and rate shall be for a unit of one Square meter

Item No 32 Providing and fixing sills at doors & jambs using 15 mm Imported quartz marble/Artificial Granite laid on 10 mm thick cement mortar 1:3 (1 cement:3 coarse sand) and jointing with grey cement slurry including rubbing and polishing etc. complete.

Plaster work on sills at windows shall be done as per It. No. 17.58(i)/P. 104 and granite work shall be as pe It. No. 14.36 (A) /P. 86 of G.T.S. booklet. 17 mm granite shall be used approved by E.I.C. instead of marble. All four side of window shall be in line and level with cement mortar 1:3. The work shall be carried out by directed by engineer in charge.

Mode of Measurement and Payment:

The item shall be measure and rate shall be as per unit of One smt.

Item No 33 Providing and fixing pre-cast Rubber Dye / steel Dye inter locking concrete block 60mm thick with grade of concrete M300 pneumatic compressed / vibrated mechanically and as per approved design Confirming to IS 15658: 2006 including 35 mm Sand layer for leveling and filling the joint with sand in proper line and level as per guidelines of IRC: SP 63- 2018 etc. Complete.

Materials

Water shall not be salty brackish and shall be clean reasonably clear and free objectionable quantities of silt and traces of oil \injurious alkalis salts organic matter and other deleterious material which will either weaken the mortar of concrete or cause efflorescence or attack the steel in R C C container for transport storage and huddling of water shall be clean, Water shall confirm to the standard specified in I S 455 -1978

If required by the Engineer in charge it shall be tested by comparison with distilled water compression shall be made by means of standard cement tests for soundness time of setting and mortar strength as specified in I S 269-1976 Any indication of unsoundness charge in time of setting by 30 minutes or more or decrease of more than 10 percent strength of mortar prepared with distilled water sample when compared with the result obtained with mortar prepared with distilled water shall be sufficient cause for rejection of water under test.

Water for curing mortar concrete or masonry should not be too acidic or too alkaline

It shall be free of elements which significantly affect the hydration reaction or otherwise interface with the hardening of mortar or concrete during curing or those which produce objectionable stains or other unsightly deposits on concrete or mortar surfaces

Hard and bitter water shall not be used for curing

Potable water will generally found suitable for curing mortar or concrete

CEMENT

Cement shall be ordinary Portland slag cement as per IS 1624 -1974 or Portland slag cement as per IS 455-1976

Cement shall be stored above the ground level in perfectly dry and water tight sheds. Wherever bulk storage containers are used, their capacity should be sufficient to cater to the requirements at site and should be cleaned at least once every 3 to 4 months. The aggregate shall be stored in such a way as to prevent admixture of foreign materials. Different size of fine or coarse aggregate shall be stored in separate stock-piles sufficiently away from the each other to prevent intermixing the materials.

SAND

Sand shall be natural sand, clean well graded, hard strong durable and gritty particular free from immures amounts of dust, clay, kankar modules, soft or flaky particles shall alkali salts, organic matter, learn mica or other deleterious substance and shall be got approved from the Engineer-in-charge. The sand shall not contain more than 8 percent of slit as determined by field test. if necessary the sand.

Coarse Sand

The fineness modules of coarse sand shall not be less than 2.5 and shall not exceed 3.0. The sieve analysis of coarse sand be as under –

I. S. Sieve Designation	% by wt. passing
4.75 mm	100
2.36mm	90 to 100
1.18 mm	70 to 100
600 MC	30 to 100
300 MC	85 to 70
150 MC	00 to 50

3.0 FINE SAND

The fineness module shall not exceed 1.0 the sieve analysis of fine sand is as under

IS. Sieve Designation	% by wt. passing
4.75 mm	100
2.3 6mm	100
1.18 mm	75 to 100
600 MC	40 to 85
300 MC	05 to 50
150 MC	00 to 10

3.1 Materials shall be stored as to prevent their deterioration of their quality and fitness for the work. Any material which has deteriorated or has been damaged or is otherwise considered defective by the Engineer-in-charge shall not be used in the work.

4.0 CEMENT CONCRETE INTERLOCKING BLOCKS

4.1 Ruber dye Interlocking cement concrete reberous reflective blocks (M-200) shall be hard even sound, and regular in shape and generally uniform in colour. The colour of the interlocking BLOCKS shall generally be uniform colour. Bracken BLOCKS or damaged blocks with cracks shall not be allowed for use. They shall be without any soft veins cracks of flaws

4.2 The size of the Interlocking cement concrete blocks to be used for flooring shall be of required size or as directed. However smaller sizes will be allowed to be used to the extent of maintaining required pattern. Thickness shall be 60 mm.

4.3 The edges of Interlocking cement concrete blocks shall in true shape of casting. All angles and edges of the Interlocking cement concrete blocks shall be true, square and free chipping and surface shall be true and plain.

4.4 The Interlocking cement concrete blocks shall have flat plain surface with rubourous reflective top finish in required pattern and colour. When brought on site, the Interlocking cement concrete blocks shall be in good condition. The Interlocking cement concrete blocks for paving shall generally be used in good condition

5.0 WORKMANSHIP

5.1 Interlocking cement concrete blocks of approved quality shall be laid evenly to level and slope as directed by Engineer in charge over a bed of a base layer consisting of 50mm to 60mm thick average sand bedding to maintain slope.

5.2 Joints shall be filled with a clean sharp sand by brooming.

5.3 The flooring work shall be finished by rubbing of flooring is set properly

5.4 The rate of flooring is inclusive of providing and laying in true line and level including filling the joints with finishing as directed by Engineer in charge

5.5 Protecting the open edges of paving with cement concrete as directed.

6.0 MODE OF MEASUREMENT and PAYMENT

6.1 The unit rate flooring shall include the cost of all materials, tools and plant required for mixing, laying of base layer in true level and slope as required applying and placing stones in position, compacting, finishing and all other incidental expenses for producing flooring 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 work shall include the cost of all labour, materials tools and plant scaffolding and all incidental expenses as described herein above.

6.2 The 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 square meter.

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

Item No 34 Providing and fixing Designo or Equivalnt make pre-cast concrete kerb stone of gray cement based concrete block 60cm length,30cm height and 15cm thick of M250 grade concret as per approved design and including excavation for fixing in proper line and level,filling the joint with C:M 1:3 (1cement:3fine sand) etc complete.All product Make approved as per tender and architect selection.

Precast Concrete Kerb Stone

Water shall conform to M-1, P-3 cement shall conform to M-3, sand shall conform to M-6, P.4 stone agg, 20 mm nominal size shall conform to M-12, P.5 cement concrete M-250 of G.T.S. Booklet.

Casting of Keb blocks :- The casting of the kerb block shall be done by using rubber dye to obtain the desing surface, finish and texture. Adequate quantity of plasticiers shall be added in the concrete mixes directed by the engineer in charge. The colour and texture of the kerbing stone blocks shall have to be get approved by E.I.C. & Architect.

WORKMANSHIP

The precast C.C. kerbing blocks shall be laid in proper line & level horizontally as well as vertically as directed by E.I.C. The joints of paver blocks shall be filled with C.M. 1:3 (1 cement : 3 Sand)

The kerb stone shall be erected in position in true line and level. The Joints between two blocks shall be filled with cement slurry and joint shall be flushed.

MODE OF MEASUREMENT & PAYMENT:

The unit rate shall include the cost of all material, labour charges for fixing, cost of BBCC, tools and plant required, placing blocks in position and all other incidental expenses required to complete the work.

The work shall be measured in running meter

The payment will be made on running meter basis

Item No 35 Painting three coats (one coat of priming coat + two coats of enamel paint) on new steel and other metal surface with enamel paint including preparing the surface by thoroughly cleaning, oil, grease, dirt and other foreign matter and scoured with brushes fine steel wood, scrapers and sand paper etc. comp.

The relevant specification shall be followed as per General Technical specification for Building work booklet It. No. 19.7. P. No. 122 & It.No. 19.23 P.No. 123

Item No. 36 Providing and laying cement concrete 1:2:4 (1- Cement : 2- Coarse sand : 4- graded stone aggregates 20 mm nominal size) and curing complete excluding cost of formwork including water proofing material in (A) Foundation and Plinth

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 5.3.13 (A). P. No. 32**

Item No 37 Providing and laying broken china mosaic flooring for terrace using 12 mm to 20 mm broken pieces of glazed tiles to be laid over cement mortar 1:3 to plain or slope and to be tempered to bring mortar creme out upto surface using white cement including rounding off junctions and extending them upto 15 cm along the wall, clearing with water and oxalic acid etc. as directed.

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. 106

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

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.

(B) using 12 mm to 20 mm broken pieces of Glazed tiles to be laid over cement mortar 1 3 to plain or slope and to be tempered to bring mortar creme out up to surface using white cement including rounding off junctions and extending them up to 15 cm along the wall,clearing with water and oxalic acid etc.as directed.

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 GUATANTEE BOND

I We..... (Contractor)

hereby guarantee that water proofing work will remain leakage proof for period of 5 years after completion of the work of water proofing treatment as per the terms and conditions of the contact 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 guarantee 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 year 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

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

Item No.38

Providing and fixing Double shutter Door with frame of M.S. Hollow pipe of 35 x 100 mm with shutter made from Horizontal M.S. Square pipe of 25 x 25 mm throughout of height covered with 19 mm thick water proof standard marine ply finished with both side standard decorative laminate including floor spring with 300 mm S S Aldrop, Pull handles of size 600 mm long S.S. grade 316 with two nos. of 300 mm Tower bolts and necessary fixtures & fasteners etc. complete as directed by Engineer in charge.

Materials

Mild Steel Hollow Pipe : Mild Steel Hollow Sections shall conform to relevant IS Codes and shall be free from cracks, bends, twists, surface defects and corrosion. Hollow sections shall be of approved make and suitable for fabrication work.

Structural Steel : Shall Conform to M22 Page No.-14 in General Technical Specification Booklet.

Marine Plywood : Shall Conform to M37 Page No.-18 in General Technical Specification Booklet.

19 mm thick waterproof marine plywood shall be BWP grade conforming to IS 710.

Decorative Laminate : Decorative laminate shall be of approved shade, texture and thickness not less than 1.0 mm conforming to relevant IS standards and approved by Engineer-in-Charge.

Adhesive : Synthetic resin adhesive used for fixing laminate shall conform to IS 848 and shall be water resistant type.

Stainless Steel Fixtures : All hardware fittings such as aldrop, tower bolts, pull handles, screws and fasteners shall be stainless steel Grade 316 of approved make and quality.

Floor Spring : Floor spring shall be heavy duty double action type suitable for double shutter door operation and of approved make.

Fasteners Fastenings : Shall Conform to M43 Page No.-19 in General Technical Specification Booklet.

Paint for M.S. Surface : Shall Conform to M44 Page No.-21 in General Technical Specification Booklet.

Primer and protective paint coating for steel members shall conform to relevant IS specifications.

Workmanship

The work shall be carried out true to line, level, plumb and dimensions as shown in drawings and as directed by the Engineer-in-Charge.

The M.S. door frame shall be fabricated from 35 x 100 mm M.S. hollow pipe sections. All members shall be accurately cut, aligned and welded to form rigid frames. Welding shall be continuous, properly grounded and finished smooth by grinding. Exposed welded joints shall be made flush without visible irregularities.

The door shutters shall be fabricated using horizontal M.S. square pipe sections of size 25 x 25 mm placed throughout full height as specified. The internal framing shall be rigid, square and adequately braced to avoid twisting or deformation.

All steel surfaces shall be cleaned properly by removing rust, oil, grease and welding scales before application of one coat of approved anti-corrosive metal primer.

19 mm thick waterproof marine plywood shall be fixed on both sides of shutter framework using approved screws and adhesive. Plywood surfaces shall be level and smooth without warping, open joints or undulations.

Decorative laminate shall be fixed on both sides using approved synthetic resin adhesive under proper pressure. Laminate joints shall be neat and uniform. Edges shall be properly finished without bubbles, lifting or damage.

Necessary edge protection and finishing members shall be provided wherever required to achieve proper appearance and durability.

The double shutters shall be fixed to frame with approved heavy duty hinges or pivot arrangement compatible with floor spring system. The shutters shall open and close smoothly without friction, vibration or misalignment.

Floor spring shall be fixed strictly as per manufacturer's specifications including embedding, alignment and adjustment. The shutter movement shall be smooth and self-closing action shall function properly.

300 mm stainless steel aldrop, two numbers stainless steel tower bolts and 600 mm long stainless steel pull handles of Grade 316 shall be fixed accurately in proper position with stainless steel screws.

All fittings shall operate smoothly and firmly without looseness.

Necessary holdfasts, anchor fasteners, screws, rawl plugs, packing pieces and accessories required for proper installation shall be provided.

After installation, all exposed surfaces shall be cleaned properly. Damaged laminate, scratches, dents or defective portions shall be rectified or replaced.

The completed door assembly shall be rigid, stable, properly aligned and aesthetically finished to the satisfaction of Engineer-in-Charge.

Mode of Measurement and Payment

Measurement shall be carried out and payment made for in Square Metre (Sq.M.).

The rate shall include: Supplying all materials, Fabrication of M.S. frame and shutter, Welding, grinding and finishing, Providing and fixing marine plywood, Providing and fixing decorative laminate, Anti-corrosive primer coating, Supplying and fixing floor spring, Stainless steel Grade 316 hardware fittings, All fixtures, fasteners and accessories, Labour charges, Transport, loading and unloading, scaffolding and safety measures

Item No 39 Providing and fixing 35mm thick Premium veneer finish flush door with veneer and door having standard locking system, Doors required with heavy quality premium lock set, Doors required with heavy quality four nos of hinges, concealed door closer Doors four side covers with heavy quality thick wooden battens with standard grooving on all borders, Doors both side covers with premium grade Veneer sheet with required necessary grooves, Doors all wooden part and veneer surfaces finish, All work includes required all necessary hardware and labour. Work, polishing includes cost of site installation complete as directed by architect and concern engineer in charge.

For detail specification refer item No.-10.30/P.63 of G.T.S. booklet.

fixture and fastening shall be as per M43. PU matt finish premium quality polish shall be as M45. 35mm thick Premium veneer finish flush door with standard locking system, Doors required with concealed door closer and heavy quality premium lock set, Doors required with heavy quality four nos of hinges, Doors four side covers with heavy quality thick wooden battens with standard grooving on all borders, Doors both side covers with premium grade Veneer sheet with required necessary grooves, Doors all wooden part and veneer surfaces finished with PU matt finish premium quality polish with required all necessary polish materials, All work includes required all necessary hardware and labour. Work includes cost of site installation complete as directed by architect and concern engineer in charge. The work shall be carried out directed by E.I.C.

Mode of measurements & payment:

The item shall be measure and rate shall be as per unit of one Smt.

Item No 40

Heavy duty Aluminium two and Three Track Sliding with fixed & openable window (Domal series) : Providing and fixing heavy duty aluminium window having extruded anodised colour 30 micron selection by architect as per required shapes and sizes suggested by Architect Jindal/Banco/Hindalco shutter frame section 80mm x 45 mm x 1.20 mm with Shutter Section 65mm x 27mm x 1.20mm with using LAVAL or equivalent brand bearing with 2 point locking system with projected handle with comprising of hermetically-sealed 5 mm Toughen glass of size and shape as required and specified, comprising of Anodised of minimum 15 microns,

shade shall be as per Architect's and Client approval. with all necessary accessories sliding locks, single or bubble roller (ball/pin suitable to be provided in the shutters with central sealing aluminum fittings and fixtures and transparent silicon sealant glass fixing to frame as per details etc complete for window. gaps between the wall & the frame is sealed with sealant approved make and sealing joints with clear weather silicon sealant of approved make.

Material & Workmanship :-

Aluminium alloy used in the manufacturing of extruded section for windows shall confirm to HE9-WP of I.S. 733 - 1956 and also hollow aluminium section confirm to IS designation HV9 - WP - IS - 1285 - 1958. Aluminium section of approved weight shall be procured at site. Fabrication shall be done as per I.S. 1948 - 1961 & drawing or as directed. Details of the anodized powder coating section to be used are as under. : Outer Frame Section 63 x 38 1.3 mm thick partition section 25 x 25 x 3 mm jointing angle shall be used 5 mm thick transparent float glass of the make MODI GUARD / ASAHI / SAINT GLOBAL or as equivalent or Partical board of approved by Engineer-in-charge shall be used & shall be conforming to relevant I.S. code. Necessary colour anodized aluminium glazing clips shall confirm to relevant IS code. Transparent silicon Gasket and PVC track rubber shall confirm to quality approved by engineer in charge.

Fixtures & fastenings :

Fixtures and fastenings shall be provided as per requirement & as directed by Engineer in charge section used as per drawing or as directed by the Engineer - in - charge. Whole framework shall be finished and erected in true line and level. The section shall be fixed with necessary screws & wooden peg nails required. size of glass for glazing at panels shall be as per drawing and shall be fixed in such a way so as to allow a clearance of 2.50 mm between the edges of glass and aluminium glazing clips surround clearance may be increased if directed. All stains from the surfaces of glass shall be removed and cleaned with thinner or spirit without any extra payment. The entire work shall be executed to the satisfaction of Engineer - in - Charge.

The Partition shall be as per drawing or as directed by Engineer - in - Charge.

Mode of measurements & payment:

The item shall be measure and rate shall be unit of one Smt.

Item No.41

Providing and Fixing fully adjustable, aluminium colour anodized glazed louvered ventilator using main frame of section No 21458 size 95 mm x 42.50 mm x 0.95 mm having weight of 0.738 kg/m, using 5 mm thick 100 mm wide transparent glass blade louver having dual controls i.e. two right and two left handles including powder coating to metal work etc. complete.

MATERIAL

Aluminum standard section

- Aluminum section shall be of extruded color anodized section shall confirm to I.S. designation HEA-WP of I.S. 733-1975 and also designation WVG-WP of I.S. 1285-1975 section or other recent I.S. standard and government resolutions and norms as specified in the drawing and design and item description.
- All sections shall be free from any scratches or holes or any damages on surface. All section shall have finished luster surface on all sides. The section shall be standard extruded color anodized aluminum section equivalent to Jindal 52MM series with section frame number - 21458 as approved by architect

and engineer in charge. The same section shall be used in louvered ventilator which can be adjustable which pattern is approved by architect or engineer in charge.

Glass

- The glass shall be 5MM thick frosted white glass of approved brand and manufacture by architect and engineer in charge. The glass shall be clear and free from scratches and cracks. The glass shall be fixed with transparent silicon gasket as per direction of engineer in charge.
- In aluminum frame section as approved above shall have louvers of standard make and shall have 3MM thick frosted white glass.

Rubber Gasket

- Rubber gasket 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.

Fixtures

- 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.

Handles , lock , aldrop , stopper etc. and other accessories.

- Handles, lock, aldrop, stopper, Nail, pivot, screws, adhesive, hold fasts etc and other accessories 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.

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.

Space for exhaust fan

- The aluminum section shall have sufficient space to accommodate exhaust fan if approved by architect.

WORKMANSHIP

The window/ventilation shall have shutters and frame of approved section as described in item with proper fixation of 5 mm thick 100 mm wide transparent glass blade louver frame. The work of standard extruded aluminum window shall be done with extreme finishing and as per the direction of Engineer in charge, using glazing clips and rubber gaskets etc accessories as required. All the fixtures and fastenings shall be fitted at right place and as directed by Engineer in charge. After finishing of work if any slight space left between window frame and wall/granite frame shall be filled with silicon as direction and approval of engineer in charge.

Mode of Measurement & Payment

- The unit rate of standard extruded color anodized alluminium window shall include the cost of all materials, cost of anodizing, cost of all necessary fixtures and fastenings, labour charges for fixing frames, shutters and fixing the window 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 with silicon in space between gaps as per direction of the Engineer-in-charge, and all other incidental expenses for preparing frame and shutter of specified size to complete the structure or its

components as shown on the drawings and according to these specifications approved by architect and engineer in charge.

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

Item No 42 Providing & Fixing 114mm wide G.I. Sheets lovers having weight not less than 490 Gm/m roll formed to create 84mm wide louver snap fixed on special shaped GI channel. Fix louvers & channels shall finish with powder coating of 55 micron (1) 0.55mm thick sheet. etc. complete as per detail drawing as directed.

Generals

This item including Providing & Fixing 114mm wide G.I. Sheets lovers having weight not less than 490 Gm/m roll formed to create 84mm wide louver snap fixed on special shaped GI channel. Fix louvers & channels shall finished with powder coating of 55 micron (1) 0.55mm thick sheet.etc. complet as per detail drawing as directed.

114mm wide G.I. Sheets

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.15.1 P.No.91

The specification for 114 mm wide G.I. (galvanized iron) sheet louvers describes a type of louver that is made of galvanized iron sheets and is 114 mm wide. Louvers are used in various applications, such as windows, doors, and ventilation systems, to control the flow of air, light, and sound.

G.I. sheet louvers are typically made by roll forming G.I. sheets into the desired shape and size. The louvers may be fixed onto special shaped G.I. channels and finished with a powder coating to protect against corrosion and improve durability.

G.I. Sheets lovers having weight not less than 490 Gm/m roll formed to create 84mm wide louver snap fixed on special shaped GI channel.

Mode of measurement & payment:

The consolidated Item shall be measured and paid on its breadth and height limiting dimensions to those specified in estimate plan or as directed.

The payment will be made on square meter basis of the finished work. Consolidation of all Item shall be measured and paid based on Sqmt

Item No 43 Providing and fixing Safety grills of required pattern for windows/ Door using necessary size M.S. Square or Round bar, M.S flats and other structural steel at required spacing including cutting, welding and fabrication etc. including one coat of primer of approved quality and two coats of oil painting as per detail drawing etc complete.

1.0 MATERIAL

1.0. STRUCTURAL STEEL

1.1. M S flats & Square pipes

Specification No M-22 of specification of materials shall confirm for Mild steel

1.2. OIL PAINTS

Specification No M-44 of specification of materials shall confirm for Paint

2.0. WORKMAN SHIP

2.1. The grills shall be so welded that welding spots does not appear on the surface. All welding spots shall be grinded by a machine grinder to give a smooth surface

2.2. The grill shall be fabricated in true shape and angles meeting the shape of the location where it is to be fitted

2.3. When grills are supplied by the contractor test certificate of the manufacturers shall be obtained according to IS 226-1975 and other relevant Indian standards

2.4. When grills are supplied by the contractors its weight shall be recorded by weighing it on a standard weigh-bridge in presence of engineer in charge and contractor before it is fitted in specified location

3.0. PAINTING WITH COLOUR

3.1. Material required for work of painting work shall be obtained directly from approved manufacturers or approved dealer and brought to the site in maker's drums. Kegs.etc. in sealed and unbroken condition.

3.2. All materials not in actual use shall be kept properly protected lids of containers shall be kept in closed and surface of the paint in open or partially open containers covered with a thin layer of turpentine to prevent formation of skin

3.3. The material which have become state or flat due to improper and long storage shall not be used

3.4. the paint shall be stirred thoroughly in its container before purring into small containers

3.5. While applying also the paint shall be continuously stirred in smaller container,

4.6. No left over paint shall be put back into stock tins When not in use the container shall be kept properly closed

3.7. If for any reason thins is necessary the brand of thinner recommended by the manufacture shall be used

3.8. The surface to be painted shall be thoroughly cleaned and dusted All rust dirt and grease shall be thoroughly removed before painting is started No painting on exterior or other exposed part of the work shall be carried out in wet damp or otherwise unfavourable weather and all the surfaces shall be thoroughly dry before painting work is started.

3.9. Application of paint

3.9.1. Brushing operations are to be adjusted to the spreading capacity advised by the manufacturers of particular paint The paint shall be applied evenly and smoothly by means of crossing and laying off. The

crossing and laying off consists of covering the area over with paint, brushing the surface hard for the first time over and then brushing alternatively in opposite direction two or three times and then finally brushing lightly in a direction at right angles to the same in this process no brush marks shall be left after the laying off is finished The full process of crossing and laying off will constitute one coat.

3.9.2. Each coat shall be allowed to dry completely and lightly rubbed with very fine grade of sand paper and loose particles brushed off before next coat is applied Each coat shall very slightly in shade and shall be got approved from Engineer in charge before next coat is started.

3.9.3. Each coat shall be lightly rubbed down with sand paper of fine pumice stone and cleaned of dust before the next coat is applied No hair marks from the brush of clogging of paint puddles in the corners of panels, angles of moldings etc.

3.9.4. Special care shall be taken while painting over bolts nuts rivets overlaps etc Approved best quality brushes shall be used for painting work

4.0 MODE OF MEASUREMENT & PAYMENT :

4.1. The unit rate of M S Grill shall include the cost of all materials, tools and plant required for fabrication, fitting the same to specified position as per drawings, finishing, painting with three coats including priming coat, etc, and all other incidental expenses for producing M S Grill 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 M S Grill shall include the cost of all labour, materials tools and plant scaffolding and all incidental expenses as described herein above.

4.2. The Grill work shall be measured for its weight, limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one Kilogram

4.3. The payment will be made on Kilogram basis of the finished work.

Item No 44 Providing and fixing MS Ladder of required pattern with MS flats(30x3mm) or round or square bars (12mm) at required spacing & with round headed bolts and nuts or screws or welding including primer coat of approved quality and two coats of oil paintas as directed by engineer in charge

Material:

MS Flats (30x3mm):

Size: 30 mm width x 3 mm thickness

Material: Mild Steel (MS)

Standard: Conforming to IS 2062 or equivalent

Finish: Smooth, free from rust, scale, and other surface defects

MS Round or Square Bars (12mm):

Size: 12 mm diameter (round) or 12 mm x 12 mm (square)

Material: Mild Steel (MS)

Standard: Conforming to IS 2062 or equivalent

Finish: Smooth, free from rust, scale, and other surface defects

Bolts, Nuts, and Screws:

Type: Round-headed bolts and nuts or screws

Material: Mild Steel (MS) or Stainless Steel (SS) as specified

Standard: Conforming to IS 1363 or equivalent

Primer Coat:

Type: Zinc chromate primer or red oxide primer

Standard: Conforming to IS 2074 or equivalent

Coverage: Approx. 10 square meters per liter

Oil Paint:

Type: Synthetic enamel paint

Standard: Conforming to IS 2932 or equivalent

Coverage: Approx. 10 square meters per liter

Workmanship:

Fabrication:

Cutting: MS flats and bars shall be cut to the required lengths using appropriate cutting tools. The edges shall be smooth and free from burrs.

Welding: All welding shall be done by skilled welders using appropriate welding techniques. The welds shall be clean, strong, and free from defects such as cracks, porosity, and undercuts.

Assembly: The ladder shall be assembled as per the approved design and pattern. The MS flats shall be used for the sides, and the MS round or square bars shall be used for the rungs. The rungs shall be spaced evenly as per the design specifications.

Fixing:

Bolting/Screwing: The ladder shall be fixed in place using round-headed bolts and nuts or screws as specified. The bolts and screws shall be tightened securely to ensure the stability of the ladder.

Welding: If specified, the ladder shall be welded to the supporting structure. The welds shall be clean, strong, and free from defects.

Surface Preparation:

Cleaning: The surface of the ladder shall be cleaned thoroughly to remove any rust, scale, grease, or other contaminants. This can be done using wire brushing, sandblasting, or other appropriate methods.

Primer Coat: A primer coat of zinc chromate or red oxide primer shall be applied to the cleaned surface. The primer shall be applied evenly and allowed to dry completely.

Painting:

First Coat: After the primer coat has dried, the first coat of synthetic enamel paint shall be applied. The paint shall be applied evenly using brushes, rollers, or spray equipment.

Second Coat: After the first coat has dried, a second coat of synthetic enamel paint shall be applied. The second coat shall be applied evenly to ensure a smooth and uniform finish.

MODE OF MEASUREMENT & PAYMENT:

Measurement shall be done on weight basis.

The Rate Shall be paid for unit of One KG.

Item No 45 Providing and Fixing S. S. Railing made from Horizontal 50mm Round and 16mm x 16 G S.S. Railing Pipe and Vertical S.S. Square Pipe 32 x 32mm with all necessary labour and Material etc. Completed.

General

The work shall be consist of furnishing and Providing and fixing 90 cm high Stainless steel railing made from anticorrosive 316 grade S S pipe of 50 mm dia (16Gauge) as hand rail with S S 316 grade Baluster of 16 mm dia (16Gauge) as a vertical support fixed in RCC slab at 1.2m c c including three horizontal S S pipes of 232x32 mm square pipe (16Gauge) at equal distance fixed by 18.75 mm dia (16Gauge) S S pipe with baluster including accessories as per detailed drawing as directed etc. complete. For All Floor

Material

Anticorrosive 304 grade SS pipe of 50 mm dia (16Gauge) as hand rail

SS 304 grade Baluster of 16 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 mill scale rust piles or other affective strength and durability.

Workmanship

Fixing 120 cm high Stainless steel railing 316 grade SS pipe of 50 mm dia (16Gauge) as hand rail . for horizontal and vertical support providing SS 316 grade Baluster vertical support fixed at fixed in RCC slab at 1.2m c c including three horizontal SS pipes of 16 mm dia (16Gauge) at equal distance fixed by 18.75 mm dia (16Gauge) S S pipe with baluster with all necessary 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 Payment will be made on Running meter basis of the finished work.

The rate shall be for all consolidated item of unit of one running meters

Item No 46 Providing and fixing Cera / Somany Wall hung Rimless or equivalent Series including jointing the trap with soil pipe in C.M. (1 cement : 1 fine sand) vitreous china (1 long pattern white colour with anchor fastener & soft close seat cover necessary fittings etc. complete.

The specification for this item shall conform to It. No. 23.112(A) Pg. 146 of general technical specification booklet for building works. Except that the W.C. pan of required colour shall be fixed on C.I. chair bracket. The sample of wall hung W.C. pan shall be got approved by engineer in-charge before commencement of work. The wall hung type W.C. pan shall be fixed on C.I. chair bracket with bolt. Item also includes for providing and fixing plastic seat cover of matching colour with W.C. pan. The seat cover shall be fixed to W.C. pan with necessary nut bolts. The fixing shall be done properly.

Mode of measurement and payment

The measurements shall be taken on number basis for which W.C. pan fixed with plastic seat cover. The rates include all cost of material required in job labour and equipment to complete the job. The rate shall be common for all lead and lift and for all floor. All type joints shall be teak proof and necessary testing for it shall have to be given. If so asked by engineer in-charge. It shall be Cera, Nycer, Pery ware any brand.

The rate shall be for a unit of one number.

Item No 47 Providing and fixing Table top wash basin of size 550 x 450 mm in granite top and sand witch type platform as per drawing incl. moulding polishing with single hole for pillar tap incl. Providing & fixing fittings such as pillar cock, waste coupler, stop tap C.P. bottle trap etc. comp. (Cera, Nycer & Hindware).

For detail specification refer item No.-23.127/P.148 of G.T.S. booklet. Cera / Somany or equivalent Table top wash basin approved by engineer in charge. C.P. brass angle cock shall be of Jaquar / Somany series. C.P. brass heavy base coupling, Fonte basin mixer shall be of Jaquar / Somany series. C.P. brass nipple 15 x 50 mm & 15 mm C.P. brass elbow shall be used. The Work shall be carried out by as directed by engineer in charge.

Mode of measurement and payment

The item shall be measure and rate shall be as per unit of One Number.

Item No 48 Providing and fixing Half Stall Urinal or approved quality including connecting the Urinal with waste pipe , tap etc. complete. (A) White earthenware flat back or corner type size 325mm x 310mm x 420mm.CERA/CRAVYS Code No. 4020104

Material:

Urinal: CERA/CRAVYS Code No. 4020104 flat back design, dimensions 325 x 310x 420mm.

Trap: Required for proper drainage connection.

Auxiliary Components:

Waste Coupling (Full Thread): CERA CAT.NO. F8050101.

Integral Longitudinal Flush Pipe: Included with the urinal for flushing mechanism.

Workmanship:

Preparation:

Ensure the workspace is clean and ready for installation.

Inspect the urinal and all components for any defects or damages before installation.

Installation of Urinal:

Mount the urinal securely onto the wall or appropriate mounting surface, ensuring it is level and stable.

Connect the urinal to the drainage system using the trap, ensuring a proper seal to prevent leaks.

Connection with Trap:

Connect the trap to the urinal's waste outlet, ensuring a secure and watertight connection.

Adjust the trap as necessary to align with the drainage system.

Fixing Auxiliary Components:

Install the waste coupling, ensuring it is tightly connected to the urinal's waste outlet to facilitate proper drainage.

Connect the integral longitudinal flush pipe according to manufacturer guidelines, ensuring it is securely attached and functional for flushing.

Mode of measurement and payment

Item shall be measure and Rate shall be paid for a unit of one Nos.

Item No 49 Providing and fixing Jaquar / Somany Metropole flush valve or dual flush valve 40mm size with exposed shutt of provision Code FLV-1085NG/ FLV-1093N or equivalent.

Material:

Jaquar FLV-1089G / FLV-1093N Metropole Flush Valve: Dual flow flush valve with a concealed body, 40mm size.

Workmanship:

Preparation:

Ensure the workspace is clean and ready for installation.

Inspect the flush valve and all components for any defects or damages before installation.

Installation of Flush Valve:

Identify the appropriate location for installing the flush valve, ensuring accessibility for maintenance and operation.

Install the concealed body of the flush valve securely within the wall or partition, following manufacturer guidelines and recommended depth specifications.

Connect the flush valve to the water supply line, ensuring proper sealing and alignment.

Exposed Shut Off Provision:

Install the exposed shut-off provision component according to manufacturer instructions, ensuring it is securely attached and accessible for operation.

Test the shut-off provision to ensure it effectively controls the flow of water to the flush valve.

Fitting and Adjustment:

Adjust the flush valve settings as required to achieve the desired flush flow and duration.

Ensure all fittings are properly tightened and sealed to prevent leaks.

Mode of measurement and payment

Item shall be measure and Rate shall be paid for a unit of one Nos.

Item No 50 Providing and fixing Jaquar / Somany C.P. Brass Spout bib cock of heavy series with C.P. brass Nipple & brass elbow etc. complete. Code : SPJ 5463 as per directed engineer in charge.

Material:

Bib Cock with Wall Flange and Aerator Cock: Jaquar / Somany or equivalent, Code : SPJ 5463

Workmanship:

Preparation:

Ensure the workspace is clean and ready for installation.

Verify all components for any defects or damages before installation.

Installation of Bib Cock:

Identify the appropriate location for installing the bib cock, ensuring easy access for operation.

Attach the wall flange securely to the wall using appropriate fasteners.

Install the bib cock onto the wall flange, ensuring it is tightly secured and properly aligned.

Installation of Aerator Cock:

Attach the aerator cock to the bib cock, ensuring a proper seal and alignment.

Verify that the aerator is functioning correctly and providing the desired water flow.

Fittings:

Ensure all fittings are compatible and properly installed according to manufacturer guidelines.

Use appropriate sealing materials to prevent leaks at connection points.

Testing:

Test the bib cock and aerator cock for proper functionality, checking for any leaks or irregularities.

Adjust as necessary to achieve the desired water flow and pressure.

Mode of measurement and payment

Item shall be measure and Rate shall be paid for a unit of one Nos.

Item No 51 Providing and fixing Bottle Trap CODE: ALD-CHR-769 L250X190 or equivalent (with Internal Partition) 32mm Size with 250mm Long Wall Connection Pipes & Wall Flangewith including all accassary and fitting charges etc. complete.

Bottle Trap: Model CODE: ALD-CHR-769 L250X190, with internal partition, 32mm size.

Wall Connection Pipes: Two pieces, each 250mm long, to connect the bottle trap to the drainage system.

Wall Flange: To cover and secure the connection point between the wall connection pipes and the drainage system.

Workmanship:

Preparation:

Ensure the workspace is clean and ready for installation.

Inspect the bottle trap, wall connection pipes, and wall flange for any defects or damages before installation.

Installation of Bottle Trap:

Identify the appropriate location for installing the bottle trap, typically beneath the sink or basin.

Mount the bottle trap securely to the drainage outlet, ensuring a proper seal and alignment.

Connect one end of each wall connection pipe to the bottle trap and the other end to the drainage system, ensuring tight connections and proper alignment.

Fitting and Adjustment:

Adjust the position of the bottle trap and wall connection pipes as needed to ensure proper clearance and alignment with surrounding fixtures.

Ensure all fittings are properly tightened and sealed to prevent leaks.

Installation of Wall Flange:

Attach the wall flange securely to the wall using appropriate fasteners, ensuring it covers and secures the connection point between the wall connection pipes and the drainage system.

Testing:

Test the bottle trap for proper functionality, checking for leaks and ensuring smooth drainage flow.

Test the wall flange to ensure it is securely attached and covers the connection point effectively.

Mode of measurement and payment

Item shall be measure and Rate shall be paid for a unit of one Nos.

Item No 52 Providing and fixing Cera Pillar Cock Cat No. F9030451 or equivalent with 15 mm dia with C.P. brass extension nipple 62 mm long etc. complete.

Material:

Cera Pillar Cock: Model Cat No. F9030451, with 15 mm diameter.

C.P. Brass Extension Nipple: 62 mm long, for connecting the pillar cock to the water supply line.

Workmanship:

Preparation:

Ensure the workspace is clean and ready for installation.

Inspect the pillar cock and brass extension nipple for any defects or damages before installation.

Installation of Pillar Cock:

Identify the appropriate location for installing the pillar cock, typically near the basin or sink.

Mount the pillar cock securely to the basin or sink, ensuring it is properly aligned and stable.

Connection with Brass Extension Nipple:

Connect one end of the brass extension nipple to the water supply line and the other end to the pillar cock, ensuring tight connections and proper alignment.

Use appropriate sealing materials to prevent leaks at connection points.

Fitting and Adjustment:

Adjust the position of the pillar cock and extension nipple as needed to ensure ease of use and accessibility.

Ensure all fittings are properly tightened and sealed to prevent leaks.

Testing:

Test the pillar cock for proper functionality, checking for leaks and ensuring smooth operation.

Verify that the water flow is consistent and as per desired specifications.

Mode of measurement and payment

Item shall be measure and Rate shall be paid for a unit of one Nos.

Item No 53 Providing and fixing Angle stop cock JAQUAR brand FLORENTINE CAT. NO. - 5053N or equivalent with 15 mm dia with C.P. brass extension nipple 62 mm long etc. complete.

Material:

Angle Stop Cock: Jaquar brand, Florentine model, Cat. No. 5053N, with 15 mm diameter.

C.P. Brass Extension Nipple: 62 mm long, for connecting the angle stop cock to the water supply line.

Workmanship:

Preparation:

Ensure the workspace is clean and ready for installation.

Inspect the angle stop cock and brass extension nipple for any defects or damages before installation.

Installation of Angle Stop Cock:

Identify the appropriate location for installing the angle stop cock, typically near the fixture or appliance requiring shut-off.

Mount the angle stop cock securely to the water supply line, ensuring it is properly aligned and stable.

Connection with Brass Extension Nipple:

Connect one end of the brass extension nipple to the water supply line and the other end to the angle stop cock, ensuring tight connections and proper alignment.

Use appropriate sealing materials to prevent leaks at connection points.

Fitting and Adjustment:

Adjust the position of the angle stop cock and extension nipple as needed to ensure ease of use and accessibility.

Ensure all fittings are properly tightened and sealed to prevent leaks.

Testing:

Test the angle stop cock for proper functionality, checking for leaks and ensuring smooth operation.

Verify that the shut-off mechanism works effectively to control the flow of water.

Mode of measurement and payment

Item shall be measure and Rate shall be paid for a unit of one Nos.

Item No 54 Providing and fixing 5.0 mm mirror with S.S. stud on wall with all necessary screw & nuts etc. complete.

The relevant specification for this item shall be followed as per Item No. 23.143/P.150 of G.T.S. Booklet for building works.

Mode of measurement and payment

The item shall be measure and rate shall be as per unit of One Smt.

Item No 55 Providing and fixing Jaquar / Somany continental series code No. CAN Series or equivalent Towel ring with S.S. screw etc. complete.

Materials:

Towel Ring: Jaquar / Somany continental series code No. ACN Series or equivalent

Stainless Steel (S.S.) Screws: Necessary for mounting the towel ring and flange.

Workmanship:

Preparation:

Ensure the workspace is clean and ready for installation.

Inspect the towel ring and round flange for any defects or damages before installation.

Identification of Installation Location:

Determine the appropriate location for installing the towel ring, typically near the sink or bath area.

Ensure the location is convenient and accessible for hanging towels.

Mounting of Towel Ring:

Securely attach the round flange to the wall using appropriate screws and anchors if necessary.

Mount the towel ring onto the round flange, ensuring it is properly aligned and stable.

Fitting and Adjustment:

Make any necessary adjustments to the towel ring to ensure it is securely attached to the wall and level.

Ensure all fittings are properly tightened to prevent loosening over time.

Testing:

Test the towel ring by hanging a towel to ensure it can support the weight without coming loose.

Verify that the towel ring is stable and securely attached to the wall.

Mode of measurement and payment

Item shall be measure and Rate shall be paid for a unit of one Nos.

Item No 56 Providing and fixing Jaquar / Hindware Kubix prime series code No. AKP 35731 P series soap dish holder with s.s. screw etc. complete.

Material:

Soap Holder: Jaquar / Hindware Kubix prime series code No. AKP 35731 P series.

Stainless Steel (S.S.) Screws: Necessary for mounting the soap holder.

Workmanship:

Preparation:

Ensure the workspace is clean and ready for installation.

Inspect the soap holder for any defects or damages before installation.

Identification of Installation Location:

Determine the appropriate location for installing the soap holder, typically near the sink or bath area.

Ensure the location is convenient and accessible for holding soap.

Mounting of Soap Holder:

Securely attach the soap holder to the wall using appropriate screws and anchors if necessary.

Ensure the soap holder is properly aligned and stable.

Fitting and Adjustment:

Make any necessary adjustments to the soap holder to ensure it is securely attached to the wall and level.

Ensure all fittings are properly tightened to prevent loosening over time.

Testing:

Test the soap holder by placing a bar of soap in it to ensure it can support the weight without coming loose.

Verify that the soap holder is stable and securely attached to the wall.

Mode of measurement and payment

Item shall be measure and Rate shall be paid for a unit of one Nos.

Item No 57 Providing and fixing Jaquar / Hindware Kubix prime series code No. AKP 35731 P series soap dish holder with s.s. screw etc. complete.

For detail specification refer item No.-23.146/P.150 of G.T.S. booklet. Jaquar / Somany continental AKP Series or equivalent Toilet roll holder shall be used approved brand & quality.

Mode of measurement and payment:

The item shall be measure and rate shall be as per unit of one No.

Item No 58 Providing and fixing Zoloto or equivalent Gun metal check or non-return fullway wheel valve.(E) 50mm dia.

Material:

Zoloto Gun Metal Check or Non-Return Fullway Wheel Valve: Size - 50mm diameter.

Workmanship:

Preparation:

Ensure the workspace is clean and ready for installation.

Inspect the valve for any defects or damages before installation.

Identification of Installation Location:

Determine the appropriate location for installing the valve in the plumbing system.

Ensure the location allows for proper functioning and accessibility.

Mounting of Valve:

Shut off the water supply to the area where the valve will be installed.

Install the valve in the desired location, ensuring it is securely attached and properly aligned with the plumbing pipes.

Connection:

Connect the valve to the existing plumbing system using appropriate fittings and connectors.

Ensure all connections are tight and properly sealed to prevent leaks.

Testing:

Turn on the water supply and test the valve for proper functionality.

Verify that the valve effectively controls the flow of water in the desired direction.

Check for any leaks or irregularities and make adjustments as necessary.

Mode of measurement and payment:

Item shall be measure and Rate shall be paid for a unit of one Nos.

Item No.59

Providing, Laying and jointing in true line and level U.P.V.C. 50mm pipe (SCH-80) of following dia. Including fittings as approved by Engineer-in-charge. Pipe shall be fixed on the wall with the help of Z Patti at every 2000 mm center to center or shall be concealed as directed including necessary fittings etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials.

Materials

- The pipes shall be standard I.S.I. mark U.P.V.C. pipe (SCH-80) of specified dia as in item description and shall confirm to IS 4985 – 2000 and IS 13592 -1992 and IS - 14735 -1999 and other latest revised relevant IS code and government resolution and notification.
- The fittings, clamps etc. required for specified dia. bore pipes shall be of best quality and makes like PRINCE / SUPREME / ASTRAL / FINOLEX or equivalent as approved by the Engineer-in-charge.

Workmanship

Cutting, Laying & Jointing

- When the tubes are to be cut or rethreaded, the ends shall be carefully filed out so that no obstruction to bore in offered. The ends of the tubes shall then be threaded conforming to the requirements with pipe dies and taps carefully in such a manner that it will not result in slackness of joints when the two pieces are jointed together.
- The taps and dies shall be used only for straightening screw threads which have becoming bent or damaged and shall not be used for turning of the threads so as to make them slack as the latter procedure may not result in the water tight joint. The screw threads for tube and fitting shall be protected from edge until they are fitted.
- In jointing the tubes, care shall be taken that all times free from dust and dirt during fixing. After lying the open ends of the pipes shall be temperately plugged to prevent access of water, soil, or any other foreign matter. Jointing shall be carried out with proper chemical adhesive material and allow to dry.

Fixing concealed to wall, ceiling & floors.

- In case of fixing concealed to walls or ceilings, these shall run on the surface of the wall, or ceiling (not in chase) unless otherwise specified. The fixing shall be done by means of standard pattern, holder clamps keeping the pipes about 15 mm. clear of the wall. When it is found necessary to pattern, holder clamps keeping the pipes about 15 mm. clear of the wall. When it is found necessary to conceal the pipes and when specified so, chasing may be adopted or pipe fixed in ducts or recesses etc. provided that there is sufficient space to work on the pipe with usual tools. The pipe shall not ordinarily be buried in walls or solid floors, where unavoidable, pipe may be buried for short distances provided that adequate protection is given against damage and where so required joints are not buried.
- All pipes and fittings shall be fixed truly vertical and horizontal unless unavoidable. The pipes shall be fixed to walls with standard pattern clamps of required size and shape, one end of which shall be properly plugged or cemented into walls with cement mortar 1:3 (1 cement : 3 coarse sand) and the other tightened round the pipes to hold it securely. For pipe of 15 mm. dia. up to 25 mm. dia the holes in the walls and floors shall be made by drilling with chisel or jumper and not by dismantling the brick work or concrete. However for bigger diameter pipes the holes shall be carefully made (1 cement : 3 coarse sand), and properly finished to match the adjacent surface.

Testing of joints

- After laying and jointing, the pipes and fittings shall be inspected under working conditions of pressure and flow. Any joints found leaky shall be removed and replaced without extra cost.
- The pipes and fittings after they are laid shall be tested to hydraulic pressure as per IS criteria. The pipe shall be slowly and carefully charged with water allowing all air to escape and avoiding all shocks and water hammer. The draw off takes and stop cock shall then be closed and specified hydraulic pressure shall be applied gradually. The pressure gauge must be accurate. The pipes and fittings shall be tested in sections as the work laying proceeds, keeping, the joints exposed for inspection during the testing.

Mode of measurements and payment

- The description of the item shall, unless otherwise stated be held to include where necessary conveyance and delivery, handling, unloading, storing fabrication, hoisting, all labour for finishing to required shape and size, setting, fitting in position straight, cutting and waste return of packing etc.
- The length shall be measured on running meter basis of finished work. The length shall be taken along the center line of the pipe and fittings. The pipes fixed to wall, ceiling. floors etc shall be measured and paid under this item.
- Testing of pipe lines fittings, and joints include for providing all plant appliances necessary for obtaining access to the work to be tested and carrying out the tests.
- The rate includes cost of U.P.V.C. pipe (SCH-80) of 50 dia, cost of coupling, bends and other accessories, cost of screwed socket joints to gather with all fittings (such as bends, sockets springs, elbows, test crosses, short pieces, clamps and plugs, unions etc.) and fixing complete with clamping wall hooks, wooden plug etc.
- The rate also include "G.I. Z patti or Clamp " or other clamp for maintain space between wall and pipe to full height or any depth with all lead and lift.
- The rate shall be for a unit of one running meter.

having National Sanitation Foundation (NSF) seal for potable water of following dia. nominal bore tube fittings and clamps including making good the wall, ceiling and floor etc. complete. [C] 40 mm.

CPVC (Chlorinated Polyvinyl Chloride) Pipe: SDR 13.5, certified with National Sanitation Foundation (NSF) seal for potable water, with a nominal bore of 40 mm.

Tube Fittings: Including elbows, couplings, tees, and any other necessary fittings compatible with 40 mm CPVC pipe.

Clamps: To secure the CPVC pipe to the wall, ceiling, and floor.

Sealant/Adhesive: For making good the wall, ceiling, and floor around the concealed pipe.

Workmanship:

Preparation:

Ensure the workspace is clean and free from obstructions.

Turn off the water supply to the area where the concealed pipe will be installed.

Installation of CPVC Pipe:

Cut the CPVC pipe to the required lengths using a suitable pipe cutter.

Install the CPVC pipe concealed within the wall, ceiling, or floor as per the design or layout specifications.

Secure the pipe in place using clamps at regular intervals to prevent movement.

Fitting Assembly:

Connect the CPVC pipe to the appropriate fittings (elbows, couplings, tees, etc.) as needed to complete the plumbing layout.

Ensure all fittings are properly secured and leak-free.

Making Good:

Apply sealant or adhesive around the openings where the CPVC pipe passes through the wall, ceiling, or floor to seal any gaps and make the installation watertight.

Smooth out the sealant/adhesive to achieve a neat finish.

Mode of measurement & payment:

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

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

Item No 61 Providing and fixing concealed center point to wall ceiling & floor CPVC (SDR 13.5) PIPE having National Sanitation Foundation (NSF) seal for potable water of following dia. nominal bore tube fittings and clamps including making good the wall, ceiling and floor etc. complete. [C] 25 mm.

CPVC (Chlorinated Polyvinyl Chloride) Pipe: SDR 13.5, certified with National Sanitation Foundation (NSF) seal for potable water, with a nominal bore of 25 mm.

Tube Fittings: Including elbows, couplings, tees, and any other necessary fittings compatible with 25 mm CPVC pipe.

Clamps: To secure the CPVC pipe to the wall, ceiling, and floor.

Sealant/Adhesive: For making good the wall, ceiling, and floor around the concealed pipe.

Workmanship:

Preparation:

Ensure the workspace is clean and free from obstructions.

Turn off the water supply to the area where the concealed pipe will be installed.

Installation of CPVC Pipe:

Cut the CPVC pipe to the required lengths using a suitable pipe cutter.

Install the CPVC pipe concealed within the wall, ceiling, or floor as per the design or layout specifications.

Secure the pipe in place using clamps at regular intervals to prevent movement.

Fitting Assembly:

Connect the CPVC pipe to the appropriate fittings (elbows, couplings, tees, etc.) as needed to complete the plumbing layout.

Ensure all fittings are properly secured and leak-free.

Making Good:

Apply sealant or adhesive around the openings where the CPVC pipe passes through the wall, ceiling, or floor to seal any gaps and make the installation watertight.

Smooth out the sealant/adhesive to achieve a neat finish.

Mode of measurement and payment

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

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

Item No 62 Providing and fixing concealed center point to wall ceiling & floor CPVC (SDR 13.5) PIPE having National Sanitation Foundation (NSF) seal for potable water of following dia. nominal bore tube fittings and clamps including making good the wall, ceiling and floor etc. complete. [C] 20 mm.

CPVC (Chlorinated Polyvinyl Chloride) Pipe: SDR 13.5, certified with National Sanitation Foundation (NSF) seal for potable water, with a nominal bore of 20 mm.

Tube Fittings: Including elbows, couplings, tees, and any other necessary fittings compatible with 20 mm CPVC pipe.

Clamps: To secure the CPVC pipe to the wall, ceiling, and floor.

Sealant/Adhesive: For making good the wall, ceiling, and floor around the concealed pipe.

Workmanship:

Preparation:

Ensure the workspace is clean and free from obstructions.

Turn off the water supply to the area where the concealed pipe will be installed.

Installation of CPVC Pipe:

Cut the CPVC pipe to the required lengths using a suitable pipe cutter.

Install the CPVC pipe concealed within the wall, ceiling, or floor as per the design or layout specifications.

Secure the pipe in place using clamps at regular intervals to prevent movement.

Fitting Assembly:

Connect the CPVC pipe to the appropriate fittings (elbows, couplings, tees, etc.) as needed to complete the plumbing layout.

Ensure all fittings are properly secured and leak-free.

Making Good:

Apply sealant or adhesive around the openings where the CPVC pipe passes through the wall, ceiling, or floor to seal any gaps and make the installation watertight.

Smooth out the sealant/adhesive to achieve a neat finish.

Mode of measurement and payment

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

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

Item No 63 Providing, laying and jointing in true line and level 110 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 110 mm diameter x 149 mm length x 145 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.

The relevant specifications of Building Booklet **It. No.23.8. Page No.144** shall be followed expect use 110 diameter U.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 Z clamp (Paid Separately) 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 64 Providing laying (to level or slopes) and jointing reinforced concrete Light duty non- pressure pipes I.S. class NP2 of the following internal diameter with collars and butt ends prepared for collar joints including testing of joints complete.(D) 300mm

The relevant specification shall be followed as per General Technical specification for Building work booklet **It.No.24.22. (D) P.No.156**

Item No 65 Providing, laying and jointing in true line and level 160 diameter U.P.V.C (Type B) conforming to IS13592-1992 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.

The relevant specifications of Building Booklet **It. No.23.8. Page No.144** shall be followed expect use 160 diameter U.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 Z clamp (Paid Separately) 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 pipe

Item No 66 Providing and fixing in PVC SWR cowl vent 110mm dia to pipes.(B) 110mm dia.

1. PVC SWR Cowl Vent:
 - Diameter: 110mm
 - Material: Unplasticized Polyvinyl Chloride (uPVC)
 - Standard: Conforming to IS 13592 or equivalent
 - Color: Typically grey or white
 - Finish: Smooth, free from cracks, holes, and other surface defects
2. PVC SWR Pipes:
 - Diameter: 110mm

- Material: Unplasticized Polyvinyl Chloride (uPVC)
 - Standard: Conforming to IS 13592 or equivalent
 - Color: Typically grey or white
 - Finish: Smooth, free from cracks, holes, and other surface defects
3. Solvent Cement:
- Type: PVC solvent cement
 - Standard: Conforming to IS 14182 or equivalent
 - Application: For joining PVC pipes and fittings

Workmanship:

1. Preparation:
 - Inspection: Inspect the PVC SWR cowl vent and pipes for any damage or defects before installation.
 - Cleaning: Clean the ends of the pipes and the inside of the cowl vent to remove any dirt, dust, or grease.
2. Cutting:
 - Measurement: Measure and mark the required length of the PVC pipe.
 - Cutting: Cut the pipe to the required length using a fine-toothed saw or a pipe cutter. Ensure the cut is straight and smooth.
3. Joining:
 - Application of Solvent Cement: Apply a uniform layer of PVC solvent cement to the outside of the pipe end and the inside of the cowl vent.
 - Fitting: Insert the pipe end into the cowl vent and twist slightly to ensure an even distribution of the solvent cement. Hold in place for a few seconds to allow the joint to set.
 - Curing: Allow the joint to cure as per the manufacturer's instructions before applying any load or pressure.
4. Fixing:
 - Positioning: Position the cowl vent at the top of the vertical pipe to allow for proper ventilation.
 - Securing: Ensure the cowl vent is securely fixed and aligned properly.

Mode of measurement and payment

item shall be measure and Rate shall be for a unit of one Number.

Item No 67 Supplying and Fixing Z patti type G.I. Brackets for SWR/RWR/Water supply Plumbing (down take) pipe with GI Clamp and Necessary Fasteners.

Material :

Z Patti Type G.I. Brackets: Galvanized iron brackets shaped like a "Z" for supporting SWR (Soil, Waste, and Rainwater) or RWR (Rainwater Harvesting) plumbing pipes.

GI Clamp: Galvanized iron clamps for securing the pipes to the brackets.

Necessary Fasteners: Screws, nuts, bolts, or other fastening materials required for mounting the brackets securely.

Workmanship:

Preparation:

Ensure the workspace is clean and ready for installation.

Inspect the brackets, clamps, and fasteners for any defects or damages before installation.

Identification of Installation Location:

Determine the appropriate locations for installing the brackets along the plumbing pipe route.

Ensure proper spacing and alignment to support the pipes adequately.

Mounting of Brackets:

Mark the positions for mounting the brackets on the wall or supporting structure.

Securely attach the brackets using the necessary fasteners, ensuring they are level and properly aligned.

Attachment of Clamps:

Place the plumbing pipes onto the brackets.

Secure the pipes to the brackets using the GI clamps, ensuring they are tightly fastened to prevent movement.

Mode of measurement and payment

Item shall measure and paid on one running meter basis.

Item No 68 Providing and fixing S.S. Cup Type Nahni Trap of Standard quality or its equivalent including cutting hole and self-clean design etc. completed as directed.

Material:

S.S. (Stainless Steel) Cup Type Nahni Trap: Standard quality or its equivalent, with a self-clean design.

Workmanship:

Preparation:

Ensure the workspace is clean and ready for installation.

Inspect the Nahni Trap for any defects or damages before installation.

Identification of Installation Location:

Determine the appropriate location for installing the Nahni Trap in the drainage system, typically beneath a floor drain or washbasin.

Ensure proper alignment with the drainage pipes.

Cutting Hole:

Cut the necessary hole in the floor or fixture to accommodate the Nahni Trap, ensuring it fits securely.

Mounting of Nahni Trap:

Place the Nahni Trap into the hole, ensuring it is properly aligned with the drainage pipes.

Secure the Nahni Trap in place using appropriate fasteners or fittings.

Mode of measurement and payment

Item shall measure and paid on number basis.

Item No 69 Providing and fixing square mouth trap P or S type of 150 mm x 100 mm size SW gully trap with C. I. cover with frame of 300 mm x 300 mm size (inside) with standard weight.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.24.19.(I) P.No.156

Mode of measurement and payment

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

Item No 70 Providing and fixing to wall ceiling and floor 10.0 Kg. F/Cm² working pressure polythene pipes of the following outside Dia. Low density, complete with special flange compression type fittings, wall clips etc. including making good the wall ceiling and floor.(F) 75mm

The relevant specifications of Building Booklet It. **No.23.8./ Page No.144** shall be followed expect use 75 mm pipe 10.00Kg F/CM² 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 shall be concealed instead of 50mm dia & 6 kgs/sq.cm. working pressure polythene pipes

Item No 71 Constructing Manhole with R.C.C. top slab in 1:2:4 mix (1-cement :2-coarse sand : 4-graded stone aggregate 20 mm nominal size) foundation concrete 1:3:6 mix (1-cement : 3- coarse sand :6-Brick bats 40 + 50 mm size) inside plastering 15 mm thick with Cement Mortar 1:3 (1-Cement : 3-coarse sand) finished with a floating coat of neat cement and making channels in

cement concrete 1:2:4 mix (1-cement : 2-Coarse sand :4-stone aggregate 20 mm nominal size) finished smooth complete including curing and festing (i) Inside size 900mm x 1200mm and 1.5M. deep including C.I. cover with frame size 560mm diameter total weight of cover and frame to be not less than 128 kgs. (Wt. of cover 64 Kg. and Wt. of frame 64 Kg.) (A) With 230mm thick walls of brick masonry using brick having crushing strength not less than 35Kg. / Sq.cm. in Cement Mortar 1:5 (1- Cement: 5-Coarse sand) (1) A type depth 0.90 Metre for 150mm diameter sewer.

The relevant specification shall be followed as per General Technical specification for Building work booklet It. No. 24.27 (ii) P.No.157

Mode of measurement and payment

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

Item No 72 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 C.I. cover with frame (Light duty) 455mm x 610mm internal dimensions, total weight of cover with frame to be not less than 38Kg. (Wt. of cover 23 Kg.) and Wt. of frame 15Kg.) (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.(iii) Inside dimensions 600mm x 850 mm and 450mm deep for pipe lines with three or more inlets.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.24.44.(II) P.No.157

Mode of measurement and payment

The item shall be measure and rate shall be for a unit of one Number.

Item No 73 Extra over items 24.44 for every additional depth of 0.1M. Of part thereof beyond 450mm depth for Brick masonry chamber.(iii) for 600mm x 850mm size.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.24.46. P. No.163 except that using for 600mm x 850mm size.

Mode of measurement and payment

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

Item No 74 Charges for making holes from 50mm to 160 mm dia in RCC wall, slabs or any other RCC members or Brick work by diamond core cutting machine of HILTI or equivalent including disposing the debris. For all floors.

General

Drilled holes should be made by drilling a hole into the crack for making holes from 100 mm to 160 mm dia in RCC wall, slabs or any other RCC members by diamond core cutting machine of HILTI or equivalent including disposing the debris. For all floors.

Mode of measurement and payment

The item shall be measure and rate shall be for a unit of one number.

Item No 75 Providing and fixing Sintex / Kaka Triple layer tank of series CCWS of required capacity with

all necessary fittings & connection etc. complete.

Materials:

Sintex / Kaka Triple layer tank of series CCWS Necessary Fittings: Including but not limited to:

Inlet pipe

Outlet pipe

Overflow pipe

Ball valve

Ventilation pipe

Sealing tape

Hose pipe for connecting fittings

Support Structure: Such as a platform or stand for the water tank on the terrace.

Fasteners: Bolts, nuts, and washers for securing the tank and fittings.

Workmanship:

Preparation:

Ensure the terrace is clean and clear of any obstructions.

Determine the appropriate location for installing the water tank.

Installation of Support Structure:

Construct or install the support structure for the water tank, ensuring it is stable and level.

Placement of Water Tank:

Place the triple layer plastic water tank on the support structure securely; ensuring it is level and stable.

Connection of Fittings:

Connect the necessary fittings to the water tank, including the inlet, outlet, overflow, ball valve, and ventilation pipes.

Use sealing tape or appropriate sealants to ensure watertight connections.

Testing:

Test the water tank and fittings for leaks by filling the tank with water and observing for any signs of leakage.

Ensure all fittings are functioning properly and adjust as necessary.

Mode of measurement & Payment–

The unit rate 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.

The 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.

The payment will be made on liter basis of the finished work

Item No 76 Providing and fixing 50 mm dia copper metal ball cock of approved quality as directed.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.23.00.5 (A) (II) P.No.153 for 50 mm.

Mode of measurement and payment

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

Item No 77 Providing and fixing dry chemical powder type fire extinguishers of 5 kg/Capacity of approved make with ISI mark (IS 2171) etc as directed

Materials

Fixtures and Fastenings

Fixtures and Fastenings : Shall Conform M43 page no-19 in General Technical Specification Booklet.

Dry Chemical Powder Fire Extinguisher

- Capacity: 5 Kg.
- Stored pressure type dry chemical powder extinguisher.
- Suitable for Class A, B and C fires.
- Conforming to IS 2171 (Portable Fire Extinguishers – Dry Powder Type).
- Extinguisher body shall be made from welded mild steel cylinder with anti-corrosive coating and painted finish.
- Shall be supplied fully charged and ready for operation.
- Operating pressure and discharge performance shall comply with IS requirements.
- Extinguisher shall bear ISI mark.

Dry Chemical Powder

- MAP/BC powder as specified by manufacturer.
- Non-caking and moisture resistant.

Hose and Nozzle

- Flexible discharge hose with nozzle suitable for DCP application.
- Leak-proof and durable.

Mounting Bracket

- Mild steel wall mounting bracket with suitable clamps and fasteners.
- Properly painted or powder coated.

Pressure Gauge

- Clearly visible and calibrated pressure gauge where applicable.

Workmanship

Workmanship shall comply with relevant IS codes and fire safety standards.

Installation

- Fire extinguisher shall be installed at accessible and visible locations as directed.
- Mounting height shall be as per fire safety norms.

- Brackets shall be firmly fixed using approved fasteners.
- Extinguisher shall be mounted securely without vibration or looseness.

Inspection Before Installation

- Extinguisher shall be checked for:
 - ISI marking
 - Manufacturing date
 - Pressure condition
 - Physical damage
 - Proper sealing
- Damaged or expired extinguishers shall not be accepted.

Testing and Commissioning

- Extinguisher shall be checked for operational readiness.
- Hose and nozzle shall be checked for blockage or leakage.
- Pressure gauge shall indicate proper working pressure.
- Demonstration of operation shall be carried out if required by Engineer-in-Charge.

Finishing

- Installation shall be neat and properly aligned.
- Identification signage/sticker shall be clearly visible.

Mode of measurement and payment

Fire extinguisher shall be measured and payment for a unit of Number (Each) basis.

Item no.78

Providing and fixing carbon dioxide type fire ext 4.5KG capacity of approved make with ISI mark

- Standards: Conforms to Indian Standards (IS) 2878/15683 and IS:15222 for CO₂ gas purity. It must be ISI certified.
- Body: Made of mild steel or seamless aluminium alloy to hold high pressure. It has a red finish (Shade No. 536 of IS:5), with a 5% black band to indicate a CO₂ extinguisher.
- Features: Includes a squeeze-grip or wheel-type valve, a safety pin, and a discharge horn with a handle to prevent frostbite.

- Cost estimate: Based on current market rates in India, a 4.5 kg CO2 fire extinguisher can range from ₹4,000 to ₹6,000 or more, depending on the manufacturer and vendor.

Clamp assembly: 50x6 mm M.S. flat with nut and bolts.

- Material: Mild Steel (M.S.) flat bar, with dimensions 50 mm x 6 mm.
- Fabrication: The flat bar is fabricated into a bracket or clamp designed to securely hold the cylindrical extinguisher body. This will include bending and drilling holes for the nuts and bolts. The clamp should be painted or powder-coated to prevent corrosion.
- Fittings: Includes suitable-sized nuts, bolts, and washers for anchoring the clamp to the wall.
- Grouting: The bolts are to be grouted into the wall for a permanent and secure fixing, which adds to the material cost.

Location: Installation must comply with safety standards like IS 2190. For electrical hazards, the extinguisher should be located between 2m and 20m from the risk.

- Height: The extinguisher should be mounted at a height where the top of the operating handle is no more than 1.2 meters from the floor.
- Procedure:
 1. Mark the location on the wall according to the height and distance requirements.
 2. Drill holes for the clamp bolts.
 3. Anchor the bolts using grouting material for maximum strength.
 4. Fix the 50x6 mm M.S. clamp securely to the wall with the nuts and bolts.
 5. Place the 4.5 kg CO2 fire extinguisher into the clamp.
 6. The work is to be carried out by a skilled professional to ensure compliance and safety.

Mode of Measurement and Payment: -

- item shall be measure and rate shall be for a Unit of Nos.

Item No 79 Providing and fixing in position 300mm high, 150mm wide English / Gujarati letters made from 1.0mm thick stainless steel sheet as directed by Engineer-in-charge with all necessary tools & plants etc. complete.

Material & Workmanship:-

The Letter shall be of AISI 304 grade stainless steel of approved quality & best quality confirming to relevant I.S code. All materials shall be got approved before starting the work. The entire work shall be carried out as per the instruction of Engineer-in-charge. The Height of letters shall be 300mm and 150 mm wide and made from 1.0 mm thick sheet. The Letters shall be fixed as directed by Engineer in charge at any height.

Mode of Measurement & Payment

The item shall be measure and Rate shall be for unit of one No.

Item No 80 Design, supply & installation of Name/Number Plate including lettering made of polyvinyl of

approved color on 1 mm thick stainless steel (SS 304) sheet as approved by Architect or Engineer-in-charge. For all floor

Materials:

Stainless Steel Sheet (SS 304): 1 mm thick, for mounting the name/number plates.

Polyvinyl Lettering: Made of approved color, for displaying the names or numbers on the plates.

Mounting Hardware: Screws, bolts, nuts, and washers for securing the name/number plates onto walls or other surfaces.

Workmanship:

Design:

Develop a design layout for the name/number plates, ensuring readability and aesthetic appeal.

Obtain approval from the Architect or Engineer-in-charge before proceeding with production.

Fabrication:

Cut the stainless steel sheets to the required sizes for each name/number plate.

Apply the polyvinyl lettering onto the stainless steel sheets according to the approved design.

Installation:

Identify the designated locations for installing the name/number plates on each floor.

Securely mount the plates onto walls or other surfaces using appropriate mounting hardware.

Ensure proper alignment and spacing between plates for consistency.

Mode of Measurement and Payment

The 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 square meter.

The payment will be made on square Meter basis of the visible work.

Item No 81 Design, supply & installation of Signages including normal lettering with additional raised tactile and graphical symbols, height 15 mm to 55 mm Brailled text and Braille locator made of zink sulphide based glow in the dark rigid sheet with high luminous property enclosed in a transparent weather proof U/V stabilized plastic pasted on 3 mm thick clear acrylic sheet.

Materials:

Zinc Sulphide-Based Glow-in-the-Dark Rigid Sheet: Providing high luminous property for visibility in low-light conditions.

Transparent Weatherproof UV Stabilized Plastic: To enclose the zinc sulphide-based sheet for protection against weather elements.

Clear Acrylic Sheet: 3 mm thick, serving as the base for mounting the signages.

Workmanship:

Design:

Develop a design layout for the signages, including normal lettering, raised tactile and graphical symbols, Brailled text, and Braille locator.

Ensure compliance with accessibility standards and regulations for tactile and Braille elements.

Fabrication:

Cut the zinc sulphide-based glow-in-the-dark rigid sheet and transparent weatherproof plastic to the required sizes for each signage.

Apply the normal lettering, raised tactile and graphical symbols, Brailled text, and Braille locator onto the zinc sulphide-based sheet.

Enclose the zinc sulphide-based sheet in the transparent weatherproof plastic for protection.

Installation:

Identify the designated locations for installing the signages.

Securely mount the signages onto walls or other surfaces using appropriate mounting hardware.

Ensure proper alignment and spacing between signages for consistency.

Testing:

Test the luminous property of the signages in low-light conditions to ensure visibility.

Verify the readability and tactility of the Brailled text and raised symbols.

Mode of Measurement and Payment

The 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 square meter.

The payment will be made on square Meter basis of the visible work.

Item No 82 Providing and fixing polished 18 mm thick black granite with full round edge and double side polished of approved quality in between urinal and fixing with cement slurry & adhesive including moulding of both exposed edges as directed by engineering in charge etc. complete.

Material

Mirror Polished Granite:

Mirror Polished granite shall be hard even sound, and regular in shape and generally uniform in colour. The colour of the stone shall generally be green. Brown coloured shall not be allowed for use. They shall be without any soft veins cracks or flaws

The size of the stone to be used for flooring shall be of in single piece upto 1.50mt. length as size of sill or jambs as directed. However smaller sizes will be allowed to be used to the extent of maintaining required pattern.

Thickness shall be as specified.

Tolerance in thickness shall be +3 mm.

The edges of stones shall be truly machine cut. All angles and edges of the stones shall be true, square and free chipping and surface shall be true and plain.

When machine cut edges are specified the exposed and the edges at joints shall be machine cut the thickness of the exposed machine cut edges shall be uniform and outer edges shall be moulded as directed.

The stones shall have machine polished surface. When brought on site, the stones shall be single polished or double polished depending upon its use. The stones for paving shall generally be single polished. The stones to be used for dado, skirting, sink, veneering, sills, steps, etc. where machine polishing after the stones are fixed in situ is not possible shall be double polished.

WORKMANSHIP

Dark Granite of approved quality shall be laid evenly to level and slope as directed by Engineer in charge over a bed of a base layer consisting of cement mortar 1:6 (1 cement: 6 coarse sand by +volume).

Cement and sand for base layer shall be mixed in proportions of 1:6 (1 cement : 6 coarse sand by volume)

Cement and sand shall be proportioned by volume after making due allowance for bulking. The required quantity of water shall then be added and the mortar mixed to produce workable consistency before mixing platform shall be thoroughly cleaned before changing from one type of cement to another.

The mixing for base layer shall be done intimately, The operation shall be carried out on clean water tight platform, and cement sand shall be first mixed dry in the required proportion to obtain uniform colour and then the mortar shall be mixed for at least two minutes after addition of water. In case of cement mortar, that has suffered because of evaporation of water the same shall be re-tempered by adding water as frequently as needed to restore the requisite consistency but its re-tempering shall be permitted only within thirty minute from the time of addition to water at the time of initial mixing.

Cement and sand for base layer shall be mixed in proportion as specified in the item, Cement and sand shall be proportioned by volume after making due allowance for bulking. The required quantity of water shall then be added and the mortar mixed to produce workable consistency.

Curing shall be started as soon as the mortar used for finished has hardened sufficiently so as to be damaged when watered. It shall be kept wet for a period of at least 7 days. During this period, it shall be suitably protected from all damages;

During hot weather, all finished or partly finished work shall be covered or wetted in such manner as will prevent rapid drying of the flooring work.

Joints of flooring shall be through and continuous throughout the building as directed by Engineer in charge

Joints shall be filled with a stiff mixture of gray cement surly

The flooring work shall be finished by rubbing and mirror polishing after the work of flooring is set properly

PROPORTION OF MIX

The proportion of cement and sand for base layer shall be one part of cement. 6 (four) parts of sand and shall be measured by volume.

MODE OF MEASUREMENT & PAYMENT:

The unit rate cladding shall include the cost of all materials, tools and plant required for mixing, laying of base layer in true level and slope as required applying & placing stones in position, compacting, finishing, curing mirror polishing, and all other incidental expenses for producing flooring 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 cladding shall include the cost of all labour, materials tools and plant scaffolding and all incidental expenses as described herein above.

The cladding 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 square meter.

The payment cladding will be made on square Meter basis of the visible work.

Item No. 83

Painting or drawing or sketching logo/ image/drawing work, Road marking for Disable parking or any art which is non washable type and having long durable nature on RCC or any purpose like specially able person parking or any other needs as per recent government standards and norms with all material, colors, tools and plants and as per instruction and approval of engineer in charge with all lead and lift. (this item not including rangoli or similar art in which many colors may used).

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

Workmanship:

workmanship include Painting or drawing or sketching logo/ image/drawing work, Road marking for Disable parking or any art which is non washable type and having long durable nature on RCC or any purpose like specially able person parking or any other needs as per recent government standards and norms with all material, colors, tools and plants and as per instruction and approval of engineer in charge with all lead and lift. (this item not including rangoli or similar art in which many colors may used).

Mode of measurement and payment

- The rate includes cost of all materials, tools, plants and labour involved in satisfactory completion of work as direction of engineer in charge with all lead and lift.

The rate shall be paid per one sqm basis.

Item No 84 Providing and fixing chicken mesh jali with square of 25 gauge at junction the masonry and RCC member including necessary scaffolding, labour etc. complete for all floors.

Materials:

Chicken Mesh Jali: Square pattern, 25 gauge, for reinforcing the junction between masonry and RCC members.

Scaffolding: For accessing the junction between masonry and RCC members at different levels.

Fasteners: Such as nails, screws, or wire ties for securing the chicken mesh jali in place.

Workmanship:

Preparation:

Ensure the work area is clear and safe for installation.

Set up scaffolding to reach the junction between masonry and RCC members on all floors.

Cutting and Placement:

Cut the chicken mesh jali to the required size to fit the junction.

Position the chicken mesh jali securely at the junction between the masonry and RCC members, ensuring full coverage.

Securing the Mesh:

Use appropriate fasteners to secure the chicken mesh jali in place.

Ensure the mesh is firmly attached to both the masonry and RCC members to provide proper reinforcement.

Finishing:

Trim any excess mesh as needed for a clean appearance.

Ensure that the mesh is flush with the surrounding surfaces to prevent any protrusions.

Cleanup:

Remove any debris or excess material from the work area.

Ensure the scaffolding is disassembled and removed safely.

Quality Check:

Inspect the installed chicken mesh jali to ensure it is securely attached and properly aligned with the junction.

Make any necessary adjustments or repairs as needed.

Mode of Measurement and Payment:

The 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 square meter.

The payment will be made on square Meter basis of the visible work.

Item No 85 16mm Rebar, excluding bar. It should minimum 160mm embedded in concrete, drill dia. Should be minimum 20mm for rebar, material should be used Will Fischer FISV 360 or equivalent. (Pull out strength check should be given by contractor as per technical specification.)

Materials and Equipment:

16mm Rebar

Drill machine with a minimum 20mm drill diameter

Fischer FISV 360 or equivalent anchoring material

Necessary safety equipment (gloves, safety glasses, ear protection, etc.)

Workmanship:

Site Inspection:

Conduct a thorough site inspection to identify the locations where the 16mm Rebar needs to be installed.

Marking and Measurement:

Use appropriate marking tools to mark the precise locations for the 16mm Rebar installation.

Measure and mark the minimum required embedment length of 160mm on the Rebar.

Drilling:

Use a drill machine with a minimum 20mm diameter drill bit to create holes in the concrete at the marked locations.

Cleaning Holes:

Clean the drilled holes from dust and debris to ensure proper adhesion of the anchoring material.

Insertion of Rebar:

Insert the 16mm Rebar into the drilled holes, ensuring it reaches the minimum embedment length of 160mm.

Anchoring Material Application:

Apply Fischer FISV 360 or equivalent anchoring material into the drilled holes around the Rebar.

Pull-Out Strength Check:

The contractor is responsible for conducting a pull-out strength check on a sample installation and providing the necessary documentation as per technical specifications.

Safety Measures:

Ensure that all safety precautions are adhered to during the installation process, including the use of appropriate personal protective equipment.

Mode of Measurement and Payment

The Item shall be measured for its Number limiting dimensions to those specified on plan or as directed.

The payment will be made on Number basis of the finished work.

The rate shall be for a unit of one number

Item No.86

Add for more consumption of cement due to change in concreting of controlled / RMC cement concrete of any grade in R.C.C. members like column footings, columns, beams, pardi, vertical and horizontal fins etc. instead of controlled / RMC cement concrete M200 / M250 / M300 / M350 as per design mix with compare to cement consumption given in special condition including loading, unloading, stacking and labour charges for using in mixer machine for concreting etc. complete.

- In general the work shall be carried out as per the standard specifications of P.W.D. / C.P.W.D. / GWSSB relevant drawings and as per the instructions of Engineer in Charge.
- The work shall be carried out as per item description.
- The scope of work includes Add for more consumption of cement due to change in concreting of controlled / RMC cement concrete of any grade in R.C.C. members like column footings, columns, beams, pardi, vertical and horizontal fins etc. instead of controlled / RMC cement concrete M200 / M250 / M300 / M350 as per design mix with compare to cement consumption given in special condition including loading, unloading, stacking and labour charges for using in mixer machine for concreting etc. complete.

Mode of Measurement and payment:

- The rate includes all materials, labour, tools and plants in satisfactory completion of work as specified above with all lead and lift for all floors for full height of the building.
- The rates shall be for unit of Kg for actual work done

Item No 87 Providing and fixing 19 mm plywood shelf with both side laminated sheet in cupboards with necessary teakwood beading etc. complete.

19 mm plywood shall be as per M 37. Shelves shall be fitted on wall or partition with nescarry screw or batten patti. It shall be free from any crack bending, warping. The work shall be carried out by directed by engineer in charge.

Mode of measurement and payment

The item shall be measure and rate shall be as per unit of One smt.

Item No 88 Providing & fixing Roller blind of Jute having thickness 0.35 mm thick with acrylic coating etc. complete.

Roller blind of Jute shall be approved by E.I.C. & it shall be 100% polished & moisture resistance & acrylic work shall be carried out as directed by E.I.C.

Mode of measurement and payment

The item shall be measure and rate shall as per unit of One Smt.

Item No 89 Providing and fixing 8 mm Laminated wood flooring with Floor covering adhesives in line and level etc. complete.

8mm Laminated wood flooring shall be of approved quality. It shall be Haringbone. It shall be fitted in line & level with Floor covering adhesive as directed by E.I.C.

Mode of measurement and payment

The item shall be measure and rate shall be as per unit of one Smt.

Item No 90 Providing and fixing Arabian curtain made from standard fabric range Rs. 1200/Rmt with double combination stitching part, Ring curtain is includes with Arabian alluminium powder coated Channel with required necessary hanging clamps, Sockets and necessary hardware, Curtain required with blackout back side premium quality combination fabric. All work includes with required necessary fabric and hardware and stitching material. Work cost will includes with site installation complete as directed by concern Architect and engineer in charge.

Arabian curtain shall be approved by E.I.C. or Architech. fabric price shall be Rmt. Astar shall be stitching with cloth curatain. Arabian alluminium powder coated Channel shall be approved by E.I.C. cloth curtain shall be stitching as direxted by E.I.C. or Architech.

Mode of measurement and payment

The item shall be measure and rate shall be as per unit of one Smt.

Item No 91 Providing and fixing in true horizontal level 600 mm x 600 mm false ceiling using hot dipped galvanized steel section, Exposed surface with and capping, main tee of size 32 x 15 mm., having 0.25 mm gauge at every 1200 mm. center to center maximum and rotary stitched cross Tee of size 32 x 15 mm Having 0.27 mm gauge at every 600 mm C/C. The above grid is uspended at every 1200 mm C/C. in both directions using 2.00 mm. Thick pre traightened GI wire laying adge ceiling tiles of size 600 x 600 mm having NRC 0.55. with two side gypsum ceiling patta etc. comp.

Providing and fixing in true horizontal level 600 mm. X 600 mm. false ceiling system manufactured by M/s. Armstrong World Industries of equivalent using hot dipped galvanized steel section, xposed surface with pre-coated capping, main tee of size 32 x 15 mm., having 0.25 mm gauge at every 1200 mm. centre to centre maximum and rotary stitched cross tee of size 32 x 15 mm, having

0.25 mm gauge at every 600 mm. c/c. and sub cross tee of size 32 x 15 mm, having 0.25 mm gauge at 1200 mm c/c. and wall angle of size 19 x 19 mm., having 0.35 mm gauge fixed to the periphery of the wall. The above grid is suspended at every 1200mm c/c. in both directions using 2.0 mm. thick prestraightened GI wire laying FINE FISSURED BUTT Edge ceiling tiles manufactured by M/s. Armstrong World Industries, of size 600 mm x 600 mm x 12mm having NRC 0.55, Light reflectance of > 84% (WT), thermal conductivity k = 0.052-0.057 W/mOK, Humidity Resistance of 99% , having Fire Performance CLASS O / CLASS 1 (BS 476), surface having 3 coats of white paint with Fine Fissured, back of the tile duly sanded and finished with a coat of protective paint over the formed grid complete. both end side patta shall be of gypsum ceiling.

The work is carried out by directed by engineer in charge neccessary alluminium section framing shall be done.

Mode of measurement and payment

The item shall be measure and rate shall be unit One Sq.Mt.

Item No 92 Providing & fixing Interior Zebra Roller blind having thickness 0.35 mm thick with acrylic coating etc. complete.

Roller blind of Zebra blind shall be approved by E.I.C. & it shall be 100% polished & moisture resistance & acrylic work shall be carried out as directed by E.I.C.

Mode of measurement and payment

The item shall be measure and rate shall as per unit of One Smt.

Item No 93 Providing and Fixing S.S. Name Plate of 1.20mm (18 Guage) With Lettering & necessary Screw

& Fitted on Wall in Line and Level etc. Complete.

S.S. Name Plate of 1.20mm (18 Gauge) Shall be approved E.I.C. S.S. Name plate Shall be fitted Where Necessary, with Plywood. Name Plate Shall be done With Lettering. It shall be Fitted on Wall or hanging on wall in Line and Level.

Mode of measurement and payment

The item shall be measure and rate shall be as per unit of One Smt.

Item No 94 THREE SEATER SOFA:- Providing Material & Labour charges for making three sweater sofa as per given detail drawings. depth of seat is 850 mm to 900 mm & length 2400 mm & ht 425 mm. All "L" type supports & Top Bottom boxes made by 18mm Thk. Ply Wood. back rest of soffa (675 mm ht) made by 18 mm Thk. Ply Wood Seat area of sofa cover with 100 mm (40 density) 45 mm soft foam & above it 25 mm u foam finished with composite lather. On back rest covers with 45mm soft + 45 mm foam, Hand rest & bottom front is covered with 25 mm foam having 32 density, as shown in detail drawing. Having 75 mm deep ss legs of 7 nos. The foam is surrounded with the layer of composite lather for softness and as finishing material. Complete with all hardware like MS nails, SS-304 screws, Majarpat, spring, stapler, putta-pati, adhesives, SR, etc.

Three seated sofa of size 2400 mm and depth of seat is 850 mm to 900 mm & ht 425 mm shall made from 19 mm thick MR grade plywood as per M37. Three seated sofa handle size 30" X 24" and sofa seat structure 2400 X 300 mm for sofa center support and back side 36" X 12" and made from 6mm plywood. All "L" type supports & Top Bottom boxes made by 18mm Thk. Ply Wood. back rest of soffa (675 mm ht) made by 18 mm Thk. Ply Wood Seat area of sofa cover with 100 mm (40 density) 45 mm soft foam & above it 25 mm u foam finished with composite lather. On back rest covers with 45mm soft + 45 mm foam, Hand rest & bottom front is covered with 25 mm foam having 32 density, as shown in detail drawing. Having 75 mm deep ss legs of 7 nos. The foam is surrounded with the layer of composite lather for softness and as finishing material.

Complete with all hardware like MS nails, SS-304 screws, Madarpat, spring, stapler, putta-pati, adhesives, 40 density foam with 4"thickness shall be used for seat part and 40 density foam with 2" thickness for sofa handle size partition 36" X 24" and top and front side 24"X6". 1" super soft foam sheet shall be used for back part size 2400 mm Recron for sofa back side cushion shall be used. Base spring hook clamp, kantan & mader part and fabric shall be approved by architect. The work shall be carried out as directed by architect.

Mode of measurement and payment

The item shall be measure and rate shall be as per unit of one number.

Item No 95 CORNER TABLE : Solid wood Corner table ,Made from teakwood with chemical treatment, Wood must be seasoned and passed out from chemical treatment,Corner table with four nos solid wooden legs and table top with 12mm thick clear toughned glass / 4mm thick veener finish top with 19mm thick BWP plywood, Table all wooden part finish with malamine polish.Table having one nos of shelves and properly fixed with wooden legs.Table size is 600 x 600 x 450h complete as per drawing given by architect & direction given by Engineer in

charge.

Teakwood shall be as per M29 12mm thick clear toughned glass shall be as per M38. Solid wood Corner table shall be made from teakwood with chemical treatment, Wood must be seasoned and passed out from chemical treatment, Corner table with four nos solid wooden legs and table top with 12mm thick clear toughned glass / 4mm thick veneer finish top with 19mm thick BWP plywood, Table all wooden part finish with malamine polish. Table having one nos of shelves and properly fixed with wooden legs. Table size is 530 x 530 x 550h complete as per drawing given by architect & direction given by Engineer in charge. The work shall be carried out as directed by engineer in charge.

Mode of measurement and payment

The item shall be measure and rate shall be as per unit of one number.

Item No 96 **CENTER TABLE : Solid wood Center table ,Made from teakwood with chemical treatment, Wood must be seasoned and passed out from chemical treatment, Center table with four nos solid wooden legs and table top with 12mm thick clear toughned glass / 4mm thick veneer finish top with 19mm thick BWP plywood, Table all wooden part finish with malamine polish. Table having onenos of shelves and properly fixed with wooden legs. Table size is 1050 x 600 x 450h complete as per drawing given by architect & direction given by Engineer in charge.**

Solid wood Center table shall be made from teakwood with chemical treatment, Wood must be seasoned and passed out from chemical treatment, Center table with four nos solid wooden legs and table top with 12mm thick clear toughned glass / 4mm thick veneer finish top with 19mm thick BWP plywood, Table all wooden part finish with malamine polish. Table having onenos of shelves and properly fixed with wooden legs. Table size is 840 x 840 x 430h complete as per drawing given by architect & direction given by Engineer in charge. Malamine polish shall be approved by architech. and it shall be proper finish. The work shall be carried out as directed by engineer in charge.

Mode of measurement and payment

The item shall be measure and rate shall be as per unit of one number.

Item No 97 **PREMIUM MEDBACK REVOLVING CHAIR : Providing and fixing Medium Back chairs made of 1" ERW pipe of 16 gauge seat and back is made of 12 mm hot press single ply and provided with 40/50 & 23 density 12 mm pure foam (Feather foam make) and covered with premium quality of leather/fabric. The chair with duo colour fabric combinations as per EIC / Architect. The chair shall be provided with 120mm BIFMA Passed gas lift and conventional tilt mechanism with one lever control for lock and seat height adjustment. Plate thickness shall 2.5 mm and angle is 3~18 (BIFM Passed) with poly urethane one pipe handle and nylon base having 1359 kg weight capacity as per BIFM standard. all the metal parts of the chair are pre treated prior to powder coating/chrome. size 675X675X1165mm . seat ht: 440/540mm.**

Premium medback chairs shall be made of 1" ERW pipe of 16 gauge seat and back is made of 12 mm hot press single ply and provided with 40/50 & 23 density 12 mm pure foam (Feather foam make) and covered

with premium quality of leather/fabric. The chair with duo colour fabric combinations as per EIC / Architect.

The chair shall be provided with 120mm BIFMA Passed gas lift and conventional tilt mechanism with one lever control for lock and seat height adjustment. Plate thickness shall 2.5 mm and angle is 3~18 (BIFM Passed) with poly urethane one pipe handle and nylon base having 1359 kg weight capacity as per BIFM standard.all the metal parts of the chair are pre treated prior to powder coating/chrome. size 675X675X1165mm . seat ht: 440/540mm. The work shall be carried out directed by E.I.C.

Mode of measurement and payment

The item shall be measure and rate shall be as per unit of one Number.

Item No 98 PREMIUM HIGHBACK REVOLVING CHAIR : Providing and fixing High Back chairs made of 1" ERW pipe of 16 gauge seat and back is made of 12 mm hot press single ply and provided with 40/50 & 23 density 12 mm pure foam (Feather foam make) and covered with premium quality of leather/fabric. The chair with duo colour fabric combinations as per EIC / Architect. The chair shall be provided with 120mm BIFMA Passed gas lift and conventional tilt mechanism with one lever control for lock and seat height adjustment. Plate thickness shall 2.5 mm and angle is 3~18 (BIFM Passed) with poly urethane one pipe handle and nylon base having 1359 kg weight capacity as per BIFM standard.all the metal parts of the chair are pre treated prior to powder coating/chrome.size 675X675X1165mm . seat ht: 440/540mm.

High back executive chair as per approved sample by Engineer in charge, with soft foam PU handle, hot pressed bend ply in seat and back, ergonomically design with natural shape of spine supporting entire back of the user and provide good lumbar support Upholstered with 40 density PU foam in seat and back as per approved by Chief Engineer in charge / Engineer in charge / Engineer in charge in charge. The rate shall include the cost of all materials, fixtures, joineries & labour to complete the work satisfactorily, as per instructions of Engineer in charge in charge. No extra payment will be given for any reason.

Mode of measurement and payment

item shall be measure and Payment shall be made for a unit of One number.

Item No 99 Providing and Arranging fix chair having structure of CRCA M.S. pipe 20mm dia and 16 guage with 50 micron powder coated of approved seat and back 40 density PU foam covered with fabric of approved shade and texture with one year replacement warranty. Wooden armrest to be provided as per approved design. Complete chair should be in suitable shape including all materials and labours etc. complete as per drawing and instruction of engineer-in charge. Visitor Chair

Materials :

16 Guge MS Pipe structure

32 density foam

Fabric

Hardware shall be used of relevant I.S. code and approved make .

As per engineer - in charge.

Adhesive (SH for wood & SR Rubber adhesive)

Workmanship : 16 guage powder coated with Fixing and fastening shall be provided as per requirment & as approved list as directed by engineers-in-charge.

Mode of Measurements and payment :

The item shall be measure and rate shall be for a unit of One Number

Item No 100 Providing and Fixing Side/Back Storage unit made of pre-lam particle board of grade-2 interior grade, top of storage will be made in 25mm PLPB with all 4 side fixed with 2mm PVC edge band tape, carcass, shelf and doors shall be made of 18mm PLPB, 2mm PVC edge band tape shall be pasted on doors and rest of the storage exposed edges will be pasted with .8mm PVC edge band tape and back shall be in 9mm PLPB. Storage shall be made in complete knock down form and for installation of the same there will be provision of proper punching to fix mini-fix and cam fittings, for providing the strength dowels shall be fixed at suitable distance between mini-fix fittings, there will be 2 nos. swing openable shutters to be fixed with auto closed hinges, multi-purpose lock and SS finish handles shall be fixed on the shutters, all required hardware will be of EBCO/HETTICH/HAFELE or equivalent Make UPPER 2 DRAWER SLIDE ON TELESCOPIC CHANNEL + BELOW 2 OPENABLE SWING SHUTTER)

Storage unit shall be made of pre-lam particle board of grade-2 interior grade, top of storage will be made in 25mm PLPB with all 4 side fixed with 2mm PVC edge band tape, carcass, shelf and doors shall be made of 18mm PLPB, 2mm PVC edge band tape shall be pasted on doors and rest of the storage exposed edges will be pasted with .8mm PVC edge band tape and back shall be in 9mm PLPB. Storage shall be made in complete knock down form and for installation of the same there will be provision of proper punching to fix mini-fix and cam fittings, for providing the strength dowels shall be fixed at suitable distance between mini-fix fittings, there will be 2 nos. swing openable shutters to be fixed with auto closed hinges, multi-purpose lock and SS finish handles shall be fixed on the shutters, all required hardware will be of EBCO/HETTICH/HAFELE or equivalent Make UPPER 2 DRAWER SLIDE ON TELESCOPIC CHANNEL + BELOW 2 OPENABLE SWING SHUTTER)

Mode of measurement and payment

The Item shall be measured and rate for the unit of square meter(Sqm)

Item No 101 Providing and fixing Two Seater Waiting sofa Overall Size 1190W ±10 x 670D ±10 x 785H ±10 , Seat Height 425mm , Seat & Back made of 1.2mm thick perforated sheet metal duly powder coated , seat & back cushioning made of Wooden Structure 6mm Ply (Hot Pressed) with foam upholstered With Leatherette , Seat & back made of CRCA Sheet Perforated (Base & Back Are In Single L Shape With Radius At Bend) Powder Coated In Silky Silver & Covered By Cushion , Height of the seat from floor 425mm, Beam MS ERW Rectangular Tube Black Powder Coated , Leg Chrome Plated Rectangular MS Structure , Bow Shaped 1.2mm Thick Sheet , 1.2mm Thick Arm Rest Chrome Plated Rectangular MS Structure , Perforated Seat & Back fixed with MS Brackets duly powder coated , Beading Chrome Plated Ms Channel Beading , Level Adjuster Chrome Plated MS Cap With PVC Inserted Black Colour , All Pipes Shall Be Welded Properly Strongly and conformity with regulations .

Materials

Structural Steel : Shall Conform M22 page no-14 in General Technical Specification Booklet.

Plywood : Shall Conform M37 page no-18 in General Technical Specification Booklet.

Fixtures and Fastenings : Shall Conform M43 page no-19 in General Technical Specification Booklet.

Paints : Shall Conform M44 page no-21 in General Technical Specification Booklet.

CRCA Sheet

- Seat and back shall be made from 1.2 mm thick CRCA perforated sheet.
- Conforming to IS 513.
- Base and back shall be formed in single L-shape with radius bend.
- Free from dents, cracks and sharp edges.

MS ERW Rectangular Tube

- Beam framework shall be made from MS ERW rectangular tube.
- Conforming to IS 4923.
- Black powder coated finish.

Leg and Armrest Structure

- Chrome plated rectangular MS structure.
- Made from 1.2 mm thick sheet/section as specified.
- Chrome finish shall be smooth and corrosion resistant.

Plywood

- 6 mm thick hot pressed plywood backing for cushion support.
- Free from delamination and warping.

Foam

- High density polyurethane foam.
- Minimum density 32 kg/m³.
- Uniform thickness and shape retention.

Leatherette Upholstery

- Premium quality artificial leather/leatherette.
- Abrasion resistant and stain resistant.
- Shade and texture as approved by Architect/Engineer-in-Charge.

Powder Coating

- Epoxy polyester powder coating.
- Minimum 60–80 micron thickness.

- Silky silver finish for seat/back structure.

Chrome Plated Beading

- Chrome plated MS channel beading.
- Uniform finish and properly fixed.

Level Adjusters

- Chrome plated MS cap with black PVC insert.
- Suitable for floor leveling and protection.

Workmanship

Fabrication of Frame

- MS frame shall be accurately cut, aligned and welded.
- All welds shall be continuous, smooth and properly ground.
- Frame shall be rigid and free from distortion.
- Sharp edges and burrs shall be removed.

Seat and Back Assembly

- Seat and back shall be fabricated from perforated CRCA sheet in single L-shaped profile with proper radius bend.
- Cushioning assembly shall be securely fixed over perforated sheet.
- Proper MS brackets shall be provided for fixing.

Cushioning Work

- Foam shall be properly shaped and uniformly bonded.
- Upholstery shall be wrinkle-free and tightly stretched.
- Stitching shall be straight and neat.

Powder Coating

- Surface shall be properly cleaned and pre-treated before coating.
- Powder coating shall be uniform without pinholes, peeling or shade variation.
- Coating thickness shall be maintained uniformly.

Chrome Plating

- Chrome plated surfaces shall be smooth and mirror finished.
- No peeling, pitting or discoloration shall be permitted.

Assembly

- All components shall be firmly assembled.
- Level adjusters shall be properly fixed.
- Sofa shall be stable and free from wobbling.

- Alignment of seat, back and armrest shall be accurate.

Finishing

- Final product shall be smooth, clean and free from scratches or dents.
- Colour and finish shall match approved sample.

Mode of Measurement and payment

Two seater waiting sofa shall be measured and payment for a unit of Number (Each) basis.

Item No 102 Providing and Fixing Side/Back Storage unit made of pre-lam particle board of grade-2 interior grade, top of storage will be made in 25mm PLPB with all 4 side fixed with 2mm PVC edge band tape, carcass, shelf and doors shall be made of 18mm PLPB, 2mm PVC edge band tape shall be pasted on doors and rest of the storage exposed edges will be pasted with .8mm PVC edge band tape and back shall be in 9mm PLPB. Storage shall be made in complete knock down form and for installation of the same there will be provision of proper punching to fix mini-fix and cam fittings, for providing the strength dowels shall be fixed at suitable distance between mini-fix fittings, there will be 2 nos. swing openable shutters to be fixed with auto closed hinges, multi-purpose lock and SS finish handles shall be fixed on the shutters, all required hardware will be of EBCO/HETTICH/HAFELE or equivalent Make UPPER 2 DRAWER SLIDE ON TELESCOPIC CHANNEL + BELOW 2 OPENABLE SWING SHUTTER)

Teakwood shall be as per M29 plywood shall be as per M37 and MR grade Made From teak wood structure, wood size must be 2" x 2" clear size, 19mm thick MR grade ply will be used for structure, Ply must be used of ISI Mark, Sofa set cushion must be in 40 density poly urithin material in seat and back , Poly urithin must be used of ISI mark and with the IS standards Polyurithin must be joints with the standard gluent and necessary hardware. Sofa covered with standard tepestry/leather with the cotton base and joints with double stitching, Sofa cushion as per IS standard and with ISI mark required On the polyurithin foam, cushion covered with standard tepestry of sanil and make of sanil as per standards and fabric/leather quality also standard brand .

Sofa seating depth must be 22" from the back, back height must be 21" from seat in seat 5" polyurithin thickness required and in back 4" polyurithin thickness required. Base made 6mm thick rubber layer in the base, Recron must be used in back and seat for the softness. Sofa handel made from plywood box and inside seasoned wood support, handel covered with 40 density polyurithin and with the layer of recron and covered with standard tapestry. two seated sofa shall be of Size : 1190W ±10 x 670D ±10 x 785H ±10 complete as per drawing given by architect & direction given by Engineer in charge. The work shall be carried out as directed by architect.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of one number.

Item No 103 Providing and Fixing Table made of pre-lam particle board of grade-2 interior grade, top of table will be made in 25mm PLPB with all 4 side fixed with 2mm PVC edge band tape, Gable end and modesty shall be made of 18mm PLPB, 2/.8mm PVC edge band tape shall be pasted

on exposed edges will be pasted. Table shall be made in complete knock down form.

Table shall be made of pre-lam particle board of grade-2 interior grade & Approved by E.I.C. Top of table will be made in 25mm PLPB with all 4 side fixed with 2mm PVC edge band tape, Gable end and modesty shall be made of 18mm PLPB, 2/.8mm PVC edge band tape shall be pasted on exposed edges will be pasted. Table shall be made in complete knock down form. Table L:1600 mm D:750 mm H:750 mm. The work shall be carried out E.I.C.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of Smt.

Item No 104 Workstation structure should made with 50 x 50 ms 16 gauge pipe and horizontal support mamber made with 50 x 25 ms pipe, race way and modesty made with 20 gauge crc perforated sheet with 50 to 60 micron powder coated. Screen above Work Top Screen should made with 30mm aluminum sections and provide fabric with soft board, or magnetic board and half provided white marker or back painted glass

The relevant specification for this item shall be followed as per item description and instruction given by Engineer in charge.

Mode of Measurement and payment

The item shall be measure and rate shall be for a unit of one Smt.

Item No 105 DOUBLE BED IN LAMINATE : Providing & Fixing double bed with made from 19mm thick BWP Grade Plywood with Outer Side 1mm thick Lainate and inside 1mm thick white backing laminte,Double bed head board with 50mm thick 40 density cushion bed back which covered with standard fabric,Bed sides and legboard made from 18mm thick BWP grade plywood with outer side 1mm thick laminate and inside 1mm thick white backig lamnate.Bed Metress Ply base from 12mm thick BWP Grade Plywood with both side backing lamination and with support of 2" x 2" clear teak wood wood battens and malamine polish.All wooden panels are covered with teak wood battens with malamine polish.Bed with head and leg panels as per given design . complete as per drawing given by architect & direction given by Engineer in charge.

Double bed shall be grade from 18 mm thick mr grade plywood shall be as per M37 and approved by architect and engineer in charge. 1.0mm thick lamination sheet shall be of best quality and free foam any bend or crack. It shall be fitted on plywood no bubbles shall be between plywood and lamination sheet. 9mm thick veneer burmateak shall be of approved quality back side of bed shall be of 12mm thick water proof MDF and

shall be cut with CNC design for proper cutting bed back side korian panel design shall be done. The double bed shall be carried out as directed by architect. melamine polish shall be as per M45.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of one number.

Item No 106 MARBLE TOP DINNING TABLE : Solid wood Dinning table ,Made from teakwood with chemical treatment, Wood must be seasoned and passed out from chemical treatment,, Dinning table is made from totally solidwood with 18mm thick plywood top with 38mm thick Italian Finish Top, ,25mm thick PVC bufferes are fitted with the legs,Dinning table finish with malamine polish, Table size is complete as per drawing given by architect & direction given by Engineer in charge.

Solid wood Dinning table,Made from teakwood with chemical treatment, Wood must be seasoned and passed out from chemical treatment,, Dinning table is made from totally solidwood with 18mm thick plywood. Plywood shallbe as per M 37. top with 38mm thick Italian Finish Top, ,25mm thick PVC bufferes are fitted with the legs,Dinning table finish with malamine polish, Table size is 2200 x 1050 x 750h complete as per drawing given by architect & direction given by Engineer in charge. Dining table all wooden part finish with malamine polish. complete as per drawing given by architect & direction given by Engineer in charge..The work shall be carried out as directed by engineer incharge.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of one number

Item No 107 DINNING CHAIR : Solid wood Dinning chair ,Made from teakwood with chemical treatment, Wood must be seasoned and passed out from chemical treatment,Chair seat finish with 75mm thikcushioncovered with standard and premium quality fabric, Chair with 25mm thick Pvc buffers , chairs all joint finish with airadlite lapi, Chair all wooden part finish with malamine polish. complete as per drawing given by architect & direction given by Engineer in charge.

Solid wood Dinning chair ,Made from teakwood with chemical treatment, wood shall be as per M 29. Wood must be seasoned and passed out from chemical treatment,Chair seat finish with 75mm thick cushioncovered with standard and premium quality fabric, Chair with 25mm thick Pvc buffers , chairs all joint finish with airadlite lapi, Chair all wooden part finish with malamine polish. complete as per drawing given by architect & direction given by Engineer in charge..

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of one number

Item No 108 DOUBLEBED FOAM METRESS : Metress made from Bonded foam with softy sandwich layer, Foam metress made from standard quality bonded foam of 100mm thick with 50 mm thick softy foam which is from standard make, Both foam are fix with standard glue with both side kwilted cotton fabric cover, Bed all edges are stitch with pipeing finish with standard finishing, Cotton kwilt of Dark colour decorative shade require. mattress thickness shall be 6"

6" HR foam sheet size shall as per requirement. 1" softy foam sheet size shall be 6' X 6'6". Cotton kwit cover fabric shall be used and approved by E.I.C. . Foam metress made from standard quality bonded foam of 100mm thick with 50 mm thick softy foam which is from standard make, Both foam are fix with standard glue with both side kwilted cotton fabric cover, Bed all edges are stitch with pipeing finish with standard finishing

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of one number.

Item No 109 Providing and fixing pannelling with using aluminium Pipe 50 x 25mm framing, 12mm Plywood, Fluted Pannel / Lamination / Veneer with solid wood moulding etc. Completed. All work includes required all necessary hardware and labour. Work includes cost of site installation complete as direceted by architect and concern engineer in charge.

Materials

Aluminium Doors, Windows, Hold Fasts

Aluminium Doors, Windows, Hold Fasts : Shall Conform M31 page no-17 in General Technical Specification Booklet.

Teak Wood : Shall Conform M29 page no-15 in General Technical Specification Booklet.

A Non-Teak Wood : Shall Conform M29.A page no-16 in General Technical Specification Booklet.

Plywood : Shall Conform M37 page no-18 in General Technical Specification Booklet.

Fixtures and Fastenings : Shall Conform M43 page no-19 in General Technical Specification Booklet.

Paints : Shall Conform M44 page no-21 in General Technical Specification Booklet.

French Polish 21: Shall Conform M45 page no-21 in General Technical Specification Booklet.

Aluminium Pipe Framework

- Aluminium rectangular hollow pipe section of size 50 mm × 25 mm.
- Alloy and temper conforming to IS 733 and IS 1285.
- Sections shall be straight, free from dents and twists.

Fluted Panel

- Decorative fluted panel of approved make and pattern.
- Uniform texture and finish.
- Proper dimensional stability and moisture resistance.

Laminate

- Decorative laminate conforming to IS 2046.

- Shade, texture and thickness as approved by Architect.

Veneer

- Decorative natural veneer of approved species and grain pattern.
- Free from cracks, warping and defects.
- Properly seasoned and moisture balanced.

Solid Wood Moulding

- Hardwood moulding section of approved profile.
- Well seasoned and free from defects.

Adhesive

- Synthetic resin adhesive conforming to IS 848.
- Suitable for plywood, laminate and veneer bonding.

Workmanship

Workmanship shall comply with relevant IS codes and good interior finishing practice.

Preparation and Layout

- Panelling layout shall be marked accurately as per approved drawings.
- Surface shall be checked for alignment and level.
- Proper scaffolding/support arrangement shall be provided where required.

Aluminium Framework

- Aluminium pipe framework shall be fixed true to line and level.
- Framework shall be securely anchored to wall/ceiling/floor using approved fasteners.
- Spacing of members shall ensure rigidity and proper support.
- Joints shall be neat and rigid.

Fixing of Plywood

- 12 mm plywood shall be cut to required dimensions.
- Edges shall be smooth and straight.
- Plywood shall be fixed firmly over framework using screws/approved fasteners.
- Joints shall be properly aligned.

Fixing of Fluted Panel / Laminate / Veneer

- Decorative finish material shall be fixed uniformly over plywood surface using approved adhesive.
- Laminate/veneer shall be pressed properly to avoid air bubbles.
- Fluted panels shall be aligned uniformly.
- Pattern and grain direction shall be maintained consistently.

Solid Wood Moulding

- Wooden moulding shall be fixed neatly along edges/joints as per design.
- Mitre joints shall be accurately cut and aligned.
- Mouldings shall be firmly fixed without visible gaps.

Finishing

- Veneer surfaces shall be sanded smooth.
- Required polish/PU/French polish shall be applied where specified.
- Final surface shall be even, smooth and free from scratches, dents, waviness or adhesive marks.
- All exposed edges shall be properly finished.

Hardware and Accessories

- All necessary hardware, screws, cleats, anchors and fixing accessories shall be included.
- Fixing shall be concealed as far as possible.

Mode of Measurement & Payment

Decorative panelling shall be measured and payment for a unit of Square Metre (Sq.m)

Item No 110 Providing and fixing Dry wall partition of 75 mm thick Gypsteel Ultra™ stud partition which includes one layer of tapered edge 12.5 mm thick Gyproc® Duraline (Conforming to EN 520:2004, Type D,F, I & R) is screw fixed with drywall Screws of 25 mm at 300mm Centers to either side of 70 mm Gypsteel Ultra™ C stud (0.5mm thick having one flange of 34 mm and another flange of 36mm made of GI steel) placed at 610 mm center to in 72 mm Gypsteel Ultra™ floor and ceiling channel (0.5 mm thick have equal flanges of 32 mm mage of GI steel). which is anchored to the floor & ture ceiling using suitable anchor fasteners or metal screws with nylon plugs. The boards are to be fixed to the frame work with joints staggered to avoid leakage through joints. Finally square and tapered edges of the boards are to be jointed and finished so as to have flush look which includes filling and finishing with Gyproc joiting compound and Gyproc joint paper tape (as per recommended practices of saint-Gobain Gyproc India).

Framing of Gypsteel Ultra™ C stud (0.5mm thick having one flange of 34 mm and another flange of 36mm made of GI steel) placed at 610 mm center to in 50 mm Gypsteel Ultra™ floor and ceiling channel (0.5 mm thick have equal flanges of 32 mm mage of GI steel). Shall be done. Framing shall be in line and level and vertical member shall not be space more than 600 mm. both side 12.5 mm gypsum board shall be fitted. The boards are to be fixed to the frame work with joints staggered to avoid leakage through joints. Finally square and tapered edges of the boards are to be jointed and finished so as to have flush look which includes filling and finishing with Gyproc joiting compound and Gyproc joint paper tape The work shall be carried out as directed by EIC. or architech.

Mode of Measurement & Payment

The item shall be measure and rate shall be as per unit of one smt.

Item No 111 Providing & fixing rubber-/Antiviral /Antibacterial/ Vinyl coated washable imported texture wallpaper apply on smooth wall with necessary solutions as directed by E.I.C.

For detail specification refer **item No.-14.36A /P.86** of G.T.S. booklet.

Mode of Measurement & Payment

The item shall be measure and rate shall as per unit of One Smt.

Item No 112 Providing and fixing Aluminium Anodised profile shutter with 4mm plain glass & 75 mm imported hydraulic hinges & necessary fittings etc. completed.

Material & Workmanship :- Alluminium alloy used in the manufacturing of extruded section for Ventilation shall confirm to HE9-WP of I.S. 733 - 1956 and also hollow alluminium section confirm to IS designation HV9 - WP - IS - 1285 - 1958. Alluminium section of approved weight shall be procured at site. Fabrication shall be done as per I.S. 1948 - 1961 & drawing or as directed. Details of the anodized powder coating section to be used are as under.

Aluminium Anodised profile shutter 70 x 25 mm (of Jindal Section no:2434 shall be used 5 mm thick transparent float glass of the make MODI GUARD / ASAHI / SAINT GLOBAL or as equivalent of approved by Engineer-in-charge shall be used & shall be conforming to relevant I.S. code. Necessary colour anodized alluminium glazing clips shall confirm to relevant IS code.

Fixtures & fastenings : Fixtures and fastenings shall be provided as per requirement & as directed by Engineer in charge section used shall be single or double type as per requirement. profile shutter shall be prepared as per drawing or as directed by the Engineer - in - charge. Whole framework shall be finished and erected in true line and level. The section shall be fixed with necessary screws & wooden peg nails required. size of glass for glazing at panels shall be as per drawing and shall be fixed in such a way so as to allow a clearance of 2.50 mm between the edges of glass and alluminium glazing clips surround clearance may be increased if directed. All stains from the surfaces of glass shall be removed and cleaned with thinner or spirit without any extra payment. The entire work shall be executed to the satisfaction of Engineer - in - Charge.

Conditions for alluminium works :- (a) Approved make selected glass of thickness as specified shall be used in Profile shutter (b) Wherever necessary, PVC lining (silver grey or white only) etc. shall be provided for air / water tightness. (c) The rates quoted shall be inclusive of manufacture, supply and installation at site, and inclusive of all the necessary accessories rubber strips, locks, rods, excise duty, taxes, octroi, transport, labour charges, insurance storage and safe custody, etc. complete.

Mode of Measurement & Payment

The item shall be measure and rate shall be as per unit of One Smt.

Item No 113 Providing & fixing alluminium partition using 63 x 38 1.3 mm thick partition section 25 x 25 x

3 mm jointing angle 19 x 12 x 1.26 mm glazing clip 5 mm thick sanit gobbin glass / Partical board, heavy rubber gasket including powder coating to all alluminium sections, including all labour, materials etc. complete.

Material & Workmanship :- Alluminium alloy used in the manufacturing of extruded section for windows shall confirm to HE9-WP of I.S. 733 - 1956 and also hollow alluminium section confirm to IS designation HV9 - WP - IS - 1285 - 1958. Alluminium section of approved weight shall be procured at site. Fabrication shall be done as per I.S. 1948 - 1961 & drawing or as directed. Details of the anodized powder coating section to be used are as under. : Outer Frame Section 63 x 38 1.3 mm thick partition section 25 x 25 x 3 mm jointing angle shall be used 5 mm thick transparent float glass of the make MODI GUARD / ASAHI / SAINT GLOBAL or as equivalent or Partical board of approved by Engineer-in-charge shall be used & shall be conforming to relevant I.S. code. Necessary colour anodized alluminium glazing clips shall confirm to relevant IS code. Transparent silicon Gasket and PVC track rubber shall confirm to quality approved by engineer in charge.

Fixtures & fastenings : Fixtures and fastenings shall be provided as per requirement & as directed by Engineer in charge section used as per drawing or as directed by the Engineer - in - charge. Whole framework shall be finished and erected in true line and level. The section shall be fixed with necessary screws & wooden peg nails required. size of glass for glazing at panels shall be as per drawing and shall be fixed in such a way so as to allow a clearance of 2.50 mm between the edges of glass and alluminium glazing clips surround clearance may be increased if directed. All stains from the surfaces of glass shall be removed and cleaned with thinner or spirit without any extra payment. The entire work shall be executed to the satisfaction of Engineer - in - Charge. The Partition shall be as per drawing or as directed by Engineer - in - Charge.

Mode of Measurement & Payment

The item shall be measure and rate shall be unit of one Smt.

Item No 114 Providing & fixing alluminium door shutter using 63 x 38 x 1.30 mm frame, 114.5 x 44.5 x 1.5 mm bottom rail, 84 x 44.5 x 1.30 mm style, top & middle 25 x 25 x 3 mm jointing angle, 19 x 12 x 1.25 mm glazing clip, 5mm sanit gobbin glass including heavy rubber gasket stainless steel hinges, lock & floor spring and colour anodized to all alluminium sections including all labour, material etc. complete.

Material & Workmanship :- Alluminium alloy used in the manufacturing of extruded section for windows shall confirm to HE9-WP of I.S. 733 - 1956 and also hollow alluminium section confirm to IS designation HV9 - WP - IS - 1285 - 1958. Alluminium section of approved weight shall be procured at site. Fabrication shall be done as per I.S. 1948 - 1961 & drawing or as directed. Details of the anodized powder coating section to be used are as under. : Outer Frame Section 63 x 38 1.3 mm thick partition section 25 x 25 x 3 mm jointing angle shall be used 5 mm thick transparent float glass of the make MODI GUARD / ASAHI / SAINT GLOBAL or as equivalent or Partical board of approved by Engineer-in-charge shall be used & shall be conforming to relevant I.S. code. Necessary colour anodized alluminium glazing clips shall confirm to relevant IS code. Transparent silicon Gasket and PVC track rubber shall confirm to quality approved by engineer in charge.

Fixtures & fastenings : Fixtures and fastenings shall be provided as per requirement & as directed by Engineer in charge section used as per drawing or as directed by the Engineer - in - charge. Whole framework

shall be finished and erected in true line and level. The section shall be fixed with necessary screws & wooden peg nails required. size of glass for glazing at panels shall be as per drawing and shall be fixed in such a way so as to allow a clearance of 2.50 mm between the edges of glass and aluminium glazing clips surround clearance may be increased if directed. All stains from the surfaces of glass shall be removed and cleaned with thinner or spirit without any extra payment. The entire work shall be executed to the satisfaction of Engineer - in - Charge. The Partition shall be as per drawing or as directed by Engineer - in - Charge.

Conditions for aluminium works :- (a) Approved make selected glass of thickness as specified shall be used in Door. (b) Wherever necessary, PVC lining (silver grey or white only) etc. shall be provided for air / water tightness. (c) The rates quoted shall be inclusive of manufacture, supply and installation at site, and inclusive of all the necessary accessories rubber strips, locks, rods, excise duty, taxes, octroi, transport, labour charges, insurance storage and safe custody, etc. complete.

(d) The rates shall also be inclusive of providing and applying with gun as per latest I.S., of Dow Corning or equivalent and making the joints around glazing waterlight, on the external periphery of the building at the junction of two different materials as directed by the Architect and site engineer. (e) Work must be in accordance with detailed drawings with dimensions of aluminium sections in frames and shutters as shown in drawing. It shall be accompanied by the detailed drawing if any deviation is proposed. (f) Work shall be carried out in Co-operation and in coordination with all other agencies working at site. (g) Any damage, if caused to the existing work done by other agencies, shall be reinstated by the Contractor to its original condition without any extra cost.

(h) During the course of work, Contractors shall provide necessary protective arrangement as directed by Engineer - in - Charge for which no extra payments shall be made. After the installation is completed, if required by the Architects, the aluminium work shall be washed with mild solution of non alkali soap and water. (i) The contractor shall be responsible for the Partition being set straight, in plumb level and for their satisfactory operations after the fixing is completed.

Mode of Measurement & Payment

The item shall be measure and rate shall be unit of one smt.

Item No 115 Providing & fixing of 6 mm thick Bison pannel with neccesarry alluminium pipe framing on backside with necessary screw, bolts & nuts etc. complete.

6mm thick Bison panne shall be approved in engineering in charge. It shall be fitted with wooden framing line & level by bison pannel shall be free from any crack bending, warping. The work shall be carried out by directed by engineeri in charge.

Mode of Measurement & Payment

The item shall be measure and rate shall be as per unit of One smt.

Item No 116 Providing and fixing 10mm thick toughen glass partition with clip connector and necessary

accessories with jointing with silicon etc. complete.

10mm thick tuffon glass shall be approved by engineer in charge. It shall be fitted with proper arrangement in line & level. It shall be free from any bubbles it shall be fitted line & level. the work is carried out by directed by engineer in charge necessary clip connector, glass to glass hinges and necessary accessories shall be done.

Mode of Measurement & Payment

The item shall be measure and rate shall be unit One Sq.Mt.

Item No 117 P/F S. S. Sink of size 37" x 18" x 8" Bowl sink with Drain Board Silver, chrome finish with fitting etc. completed.

10mm thick tuffon glass shall be approved by engineer in charge. It shall be fitted with proper arrangement in line & level. It shall be free from any bubbles it shall be fitted line & level. the work is carried out by directed by engineer in charge necessary clip connector, glass to glass hinges and necessary accessories shall be done.

Mode of Measurement & Payment

The item shall be measure and rate shall be unit One Sq.Mt.

Item No 118 Providing and fixing S.S. 8mm Glass shelf of size 12" x 6" approved quality and design & etc. complete.

S.S. glass self of size 12" x 6" shall be of approved quality. It shall be fitted in line & level with screw as directed by E.I.C.

Mode of Measurement & Payment

The item shall be measure and rate shall be as per unit of one no.

Item No 119 Box cutting the road surface to proper slope and camber for making a base for road work including removing the excavated stuff and depositing on the road side slope as directed upto 50Mt.lead.

This work shall consist of excavation, removal and satisfactory disposal of all materials necessary for the construction of widening carriageway in accordance with requirements of these specifications and the lines, grades and cross sections shown in the drawings or as indicated by the Engineer.

After the site has been cleared the limits of excavation box cutting the road surface shall be set out true to lines, curves, slopes, grades and sections as shown on the drawings or as directed by the Engineer.

Box cutting shall be carried out in conformity with the directions laid here in under and in a manner approved by the Engineer. The work shall be so done that the suitable materials available from box cutting excavation are satisfactorily utilized as directed.

The contractor shall not excavate outside the limits of box cutting. Subject to the permitted tolerances, any excess depth width excavated beyond the specified levels dimensions on the drawings shall be made good at the cost of the contractor with suitable material of characteristics similar to that removed and compacted as directed.

Cutting shall be done in proper grade and camber as per measurements given. Care must be taken that all slopes are evenly and truly dressed. Cutting shall be done to the exact depth required and shall be as per formation level in proper grade and the camber. If extra depth of cutting is done due to negligence of contractor the same shall be refilled with approved quality of materials duly consolidated to the satisfaction of the Engineer-in-charge (without extra cost).

The bottom level of box cutting i.e. sub grade shall be watered and well compacted with vibratory roller at OMC to the desired density as directed by the Engineer in charge. Rolling and compaction shall be deemed to be incidental to the work and no extra cost shall be paid for compaction of box cutting base surface.

The stuff received from the cutting shall be used for filling and correcting side slopes of bank and earthwork for embankment as directed by the Engineer in charge with all lead and lift.

Mode of measurement and payment:

The measurement of box cutting shall be taken on level basis and level shall be taken at 30 mt. interval. Volume shall be computed in cubic meters by average area method.

The payment shall be made on Cmt basis.

The rate includes cost of all labour, machineries required, cost of carting and spreading the cutting stuff with all lead and lift and leveling the dumping ground embankment, rolling and consolidation of Subgrade level etc. complete.
Carrying out the required tests for quality control.

Item No 120 Providing and laying wet mix macadam base course 250 mm thick in two layers using machine crushed B.T. chips as per required gradation mixing with required optimum quantity of water, conveying the mix to site of work, spreading in to grade and camber with mechanical paver and consolidation each layer with vibratory roller including cost of material labour plant and equipment etc. complete.

406.1 SCOPE

This work shall consist of laying and compacting clean, crushed, graded aggregate and granular material, premixed with water, to a dense mass on a prepared subgrade sub base/ base or existing pavement as the case may be in accordance with the requirements of these specifications. The material shall be laid in two layers to lines, grades and cross-sections shown on the approved drawings or as directed by the Engineer. The thickness of a single compacted Wet Mix Macadam layer shall not be less than 75mm. When vibrating or other approved types of compacting equipment are used, the compacted depth of a single layer of the sub-base course may be increased to 20cm upon approval of the Engineer.

MATERIALS

AGGREGATES

PHYSICAL REQUIREMENTS: Course aggregates shall be crushed stone. If crushed gravel / shingle are used, not less than 90 percent by weight of the gravel / shingle pieces retained on 4.75 mm sieve shall have at least two fractured faces. The aggregates shall conform to the physical requirements set forth in Table 400-10 below.

TABLE 40-10 PHYSICAL REQUIREMENT OF COARSE AGGREGATES FOR WET MIX MACADAM FOR SUB- BASE / BASE COURSES

Test	Test Method	Requirements
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1.*Los Angeles Abrasion value	IS : 2386 (Part-4)	40 percent (Max)
Aggregate impact value	IS : 2386 (Part-4) or IS : 5640	30 percent (Max)
2. Combined Flakiness and Elongation indices (Total)**	IS : 2386(PART-1)	30 percent (Max)

* Aggregates may satisfy requirements of either of the two tests.

** To determine this combined proportion, the flaky stone from a representative sample should first be separated out. Flakiness index is weight of flaky stone metal divided by weight of stone sample only the elongated particles be separated out from the remaining (non flaky stone metal. Elongation index is weight of elongated particles divided by total non flaky particles. The value of flakiness index and elongation index so found are added up.

If the water absorption value of the coarse aggregate greater than 2 percent, the soundness test shall carried out on the material delivered to site as per 2386 (Part – 5).

Grading requirements:

The aggregates shall conform to the grading given in Table 400-11

TABLE 400-11. GRADING REQUIREMENTS OF AGGREGATES FOR WET MIX MACADAM.

Is Sieve Designation	Percent by weight Passing the IS sieve
53.00 mm	100
45.00 mm	95-100
26.50 mm	-
22.40 mm	60-80
11.20 mm	40-60
4.75 mm	25-40
2.36 mm	15-30
600.00 micron	8-12
75.00 micron	0-8

Materials finer than 425 micron shall have plasticity index (P.1) not exceeding 6.

The final gradation approved within these limits shall be well graded from course to fine and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve or vice- versa.

Construction Operation:

Preparation of base: Clause 404.3.1 as below shall apply.

Preparation of base: The surface of the subgrade/sub-base/base to receive the water bound macadam course shall be prepared to the specification lines and cross fall(camber) and made free of dust and other extraneous material. Any ruts or soft yielding places shall be corrected in an approved manner and rolled unit firm surface is obtained if necessary by sprinkling water. Any sub-base/base/surface irregularities, where predominant, shall be made good by proving appropriate type of profile corrective course (leveling course) to clause 501 of this specification.

As far as possible, laying water bound macadam course over an existing thick bituminous layer may be avoided since it will cause problems of internal drainage of the pavement at the interface of two course. It is desirable to completely pick out the existing thin bituminous wearing course where water bound macadam is proposed to be laid over it. However, where the intensity of ran is low and the interface drainage facility is efficient, water bound macadam can be laid over the existing thin bituminous surface by cutting 50 mm x 50 mm furrows at an angle of 45 degrees to the centre line of the pavement at one metre intervals in the existing road. The directions and depth of furrows shall be such that they provide adequate bondage and also serve to drain water to the existing granular base course beneath the existing thin bituminous surface.

406.1.1 Provision of lateral confinement of aggregates :

While constructing wet mix macadam arrangement shall be made for the lateral confinement of wet mix. This

shall be done by laying materials in adjoining shoulders along with that of wet mix macadam layer and following the sequence of operations described in Clause 407.4.1 as below.

407.4 Construction Operations:

407.4.1 Shoulder: The sequence of operations shall be such that the construction of paved shoulder is done in layers each matching the thickness of adjoining pavement layer. Only after a layer of pavement and corresponding layers in paved and earth shoulder portion have been laid and compacted, the construction of next layer of pavement and shoulder shall be taken up.

Where the materials in adjacent layers are different, these shall be laid together and the pavement layer shall be compacted first. The corresponding layer in paved shoulder portion shall be compacted thereafter, which shall be followed by compaction of earth shoulder layer. The adjacent layers having same material shall be laid and compacted together.

In all cases where paved shoulders have to be provided alongside of existing carriageway, the existing shoulders shall be excavated in full width and to the required depth as per clause 301.3.7 under no circumstances; box cutting shall be done for construction of shoulders.

Compaction requirement of earthen shoulder shall be as per table 300-2 in the case of bituminous courses, work on shoulder (earthen/hard/paved), shall start only after the pavement course has been laid and compacted.

During all stages of shoulder (earth/hard/paved) construction, the required cross fall shall be maintained to drain off surface water

Regardless of the method of laying, all shoulder construction material shall be placed directly on the shoulder. Any spilled material dragged on to the pavement surface shall be immediately removed, without damage to the pavement, and the area so affected thoroughly cleaned.

406.3.4 Preparation of mix:

Wet Mix Macadam shall be prepared in an approved mixing plant of suitable capacity having provision for controlled addition of water and forced / positive mixing arrangement like pug-mil or pan type mixer of concrete batching plant.

Optimum moisture for mixing shall be determined in accordance with IS : 2720 (Part – 8) after replacing the aggregate fraction retained on 22.4 mm sieve with material of 4.75 micron to 22.4 mm size. While adding water, due allowance should be made for evaporation losses. However, at the time of compaction, water in the wet mix should not vary from the optimum value by more than agreed limits.

The mixed material should be uniformly wet and so segregation should be permitted.

406.3.4 Spreading of mix :

Immediately after mixing, the aggregates shall be spread uniformly and evenly upon the prepared sub grade / sub-base / base in required quantities. In no case should these be dumped in heaps directly on the area where these are to be laid nor shall their hauling over a partly completed stretch be permitted.

The mix may be spread either by a paver finisher or motor grader. For portions where mechanical means cannot be used, manual means as approved by the Engineer shall be used. The motor grader shall be capable of spreading the material uniformly all over the surface. Its blade shall have hydraulic control suitable for initial adjustments and maintaining the same so as to achieve the specified slope and grade.

The paver finisher shall be self – propelled, having the following features :

- (i) Loading hoppers and suitable distribution mechanism
- (ii) The screed shall have tamping and vibrating arrangement for initial compaction to the layer as it is spread without rutting or otherwise marring the surface profile.
- (iii) The paver shall be equipped with necessary control mechanism so as to ensure that the finished surface is free from surface blemishes.

The surface of the aggregate shall be carefully checked with templates and all high or low spots remedied by removing or adding aggregate as may be tested by depth blocks during construction.

No segregation of larger and fine particles should be allowed. The aggregates as spread should be allowed. The aggregates as spread should be of uniform gradation with pockets of fine materials.

406.3.5 Compaction :-

After the mix has been laid to the required thickness, grade and camber the same shall be uniformly compacted, to the full depth with suitable roller. If the thickness of single compacted layer does not exceed 100mm, as smooth wheel roller of 80 to 100 KN weigh may be used. For a compacted single layer up to 200mm, the compaction shall be done with the help of vibratory roller of minimum static weight of 80 to 100 KN or equivalent capacity roller. The speed of the roller shall not exceed 5 km/h. In portions having unidirectional cross fall / super elevation rolling shall commence from the lower edge and progress gradually towards the upper edge. Thereafter, roller should progress parallel to the center line of the road. Uniformly over-lapping each preceding track by at least one fourth width until the entire surface has been rolled. Alternate trips of the roller shall be terminated in stops at least 1 m away from any preceding stop.

In portions in camber, rolling should at the edge with the roller running forward and backward until the edges have been firmly compacted. The roller shall progress gradually towards the center parallel to the center line of the road uniformly overlapping each of the preceding track by at least one – Fourth width until the entire surface has been rolled.

Any displacement occurring as a result of reversing of the direction of a roller or from any other caused shall be corrected at once as specified and / or removed and made good.

Along forms, Kerbs, walls or other places not accessible to the roller, the mixture shall be thoroughly compacted with mechanical tampers or a plate compactor. Skin patching of an area without scarifying the surface to permit proper bonding of the added material shall not be permitted.

Rolling should not be done when the sub grade is soft or yielding or when it caused a wave-like motion in the sub – base/ base course or sub grade. If irregularities develop during rolling which exceed 12mm when tested with a 3 meter straight edge, the surface should be loosened and premixed material added or removed as required before rolling again so as to achieve a conforming to the desired grade and cross fall. In no case should the use of unmixed material be permitted to make up the depressions.

Rolling shall be continued till the density achieved is at least 98 per cent of the maximum dry the material as determined by the method outlined in IS : 2720 (Part-8)

After completion, the surface of any finished layer shall be well-close, free from movement under compaction equipment or any compaction planes, ridges, cracks and loose material. All loose, segregated or otherwise defective areas shall be made good to the full thickness of the layer and re-compacted.

406.3.6 Setting and drying :

After final compaction of wet mix macadam course, the road shall be allowed to dry for 24 hours.

406.2 Opening to Traffic :

Preferably no vehicular traffic of any kind should be allowed on the finished wet mix macadam surface till it has dried and the wearing course laid.

406.3 Surface Finish and Quality control of work

406.4 Surface evenness :

The surface finish of construction shall conform to the requirements of Clause 902 of MORT & H specifications.

406.5 Quality Control :

Control on the quality of materials and works shall be exercised by the Engineer in accordance with section 901 of MORT & H specifications

406.6 Rectification of Surface Irregularity :

Where the surface irregularity of the wet mix macadam course exceeds the permissible tolerances or where the course is otherwise defective due to subgrade soil getting mixed with the aggregates, the full thickness of the layer shall scarified over the affected area. Reshaped with added premixed material or removed and replaced with fresh premixed material as applicable and recomputed in accordance with Clause 406.3 of this item . The area treated in the aforesaid manner shall not be less than 5m long and 2m wide. In no case shall depressions be filled up with unmixed and ungraded material or fines.

406.7 406.6.7 Arrangement for Traffic :

During the period of construction, arrangement of traffic shall be done as per Claus 112 of MORT & H specifications

Mode of Measurements and Payment :

Wet mix macadam shall be paid as finished work in position on cross sectional measurements and computing the volume of WMM work in cubic meters by average area method.

406.8 Rate: The Contract unit rate for wet mix macadam shall be payment in full for carrying out the required operations including full compensation for all components listed below.

- i) Making arrangement for traffic to Clause 112 as above Except for initial treatment to verges, shoulders and Construction of diversions ;
- ii) Furnishing wet materials to be incorporated in the work including all royalties, fees, rents where necessary and all leads and lifts ;
- iii) All labour, tools, equipment and incidentals to complete the work to the specifications ;
- iv) Carrying out the work in part widths of road where directed ; and
- v) Carrying out the required tests for quality control.

Item No 121 Compaction and finishing of cement concrete road by trimix process providing extra Labour charges for the trimix vacume dewatering service process on cement concrete road surface by using vacuum dewatering pump floater surface vibrator including making groves and rough finish to surface including leveling etc complete.

Specification No. 5.8.2 Page No.47 of Specification Booklet for Building work shall be applied for this work.

2.0 Proportioning of materials for the mix

The mix shall be proportioned with a maximum aggregate cement ratio of 15 : 1. The water content shall be adjusted to the optimum as per Clause 600.1.3.3 for facilitating compaction by Surface floater.

- 2.1 Moisture content The right amount of water for the lean concrete in the main work shall be decided so as to ensure full compaction under rolling and shall be assessed at the time of rolling the trial strength. Too much water will cause the lean concrete to be heaving up before the wheels and picked up on the wheels of the roller and too little will lead inadequate compaction, a low in-situ and an open-textured surface.
- 2.2 The optimum water content shall be determined and demonstrated by floating the surface during trial length construction. While laying the mix in the main work, the lean concrete shall have moisture content between the optimum and optimum +2 per cent, keeping in view the effectiveness of compaction achieved and to compensate for evaporation losses.
- 2.3 Cement content The minimum cement content in the concrete shall not be less than 150 kg cum of concrete. If this minimum cement content is not sufficient to produce concrete of the specified strength, it shall be increased as necessary without additional cost compensation to the Contractor.
- 2.4 Concrete strength The average compressive strength of each consecutive group of 5 cubes made in accordance with Clause 903.5.1.1 shall not be less than 10 MPa at 7 days. In addition, the minimum compressive strength of any individual cube shall not be less than 7.5 MPa at 7 days. The design mix complying with the above Clauses shall be got approved from the Engineer and demonstrated in the trial length construction.

3.0 Construction

3.1 General The pace and programme of the lean concrete sub-base construction shall be matching suitable with the programme of construction of the cement concrete pavement only after 7 days after sub-base construction.

3.2 Plasticizer Conplast p 211 @ 100ml per bag of cement water reducing concrete admixture at 100ml per bag of cement and Recron 3 S fiber (reliance product) shall be mixed at the rate of 125 gram per bag of cement including making channel 100mm X 50mm required to level and slope and thickness of the concrete road levelling of placed concrete with surface vibrator and finishing with power floater shall be done floater and trowel light booming the surface shall be done expansion joints shall be cut as directed

4. MIXING

- 4.1 Dry coarse and fine aggregate and cement shall then be mixed thoroughly by turning over to get a mixture of uniform colour.
- 4.2 Enough water shall then be added gradually and the mass turned over till a mix of required consistency is obtained. In case of hand mixing quantity of cement shall be increased by 10 per cent above the specified. The quantity of water shall be just sufficient to produce a dense concrete of required workability for the purpose.
- 4.3 The concrete shall be mixed in a mechanical mixer at the site of work hand mixing may however be allowed for smaller quantity of work if approved by Engineer in charge. When hand mixing is permitted by the engineer in charge in case of breakdown of machineries and in the interest of the work. Mixers which have been out of use for more than 30 minutes shall be thoroughly cleaned before putting a new batch. Unless otherwise agreed to be the Engineer in charge the first batch of concrete from the mixer shall contain only two thirds of normal quantity of coarse aggregate. Mixing plant shall be thoroughly cleaned before changing from one type of cement to another.
- 4.4 The method of transporting and placing concrete shall be approved by the Engineer in charge. Concrete shall be so transported and placed so that contamination segregations or loss of its constituent material takes place. All formwork and reinforcement contained in it shall be cleaned and made free from standing water dust snow or ice immediately before placing of concrete. No concrete shall be placed in any part of the structure until the approval of the Engineer in charge has been obtained.
- 4.5 Mixing shall be done on a smooth watertight platform large enough to allow efficient turning over the ingredients of concrete before and after adding water. Mixing platform shall be so arranged so that no foreign material shall get mixed with concrete nor does the mixing water flow out.
- 4.6 Cement in required number of bags be placed in a uniform layer on top of the measured quantity of fine and coarse aggregate which shall also be spread in a layer of uniform thickness on the mixing platform.
- 4.7 Unless otherwise agreed to by the engineer in charge concrete shall be dropped into place from a height exceeding 2 meters. When chutes are used they shall be kept clean and used in such a way as to avoid segregation. When concreting has to be resumed on a surface which has hardened it shall be roughened kept clean thoroughly wetted and covered with a 13mm thick layer of mortar composed of cement and sand in the same ratio as in the concrete mix itself. This 13mm layer of mortar shall be freshly mixed and placed immediately before placing of new concrete. Where concrete has not fully hardened all laitance shall be removed scrubbing the wet surface with wire or bristle brushes care being taken to avoid dislodgement of any particles of coarse aggregate. The surface shall then be thoroughly wetted all free water removed and coated with neat cement grout. The first layer of concrete to be placed on this surface shall not exceed 150mm in thickness and shall be well rammed against old work particular attention being given to corners and close spots.
- 4.8 If concreting is not started within 24 hours of the approval being given, it shall have to be obtained from the engineer in charge. Concreting being given it shall proceed continuously over the area between construction joints. Fresh concrete shall not be placed against concrete which has been in position for more than 30 minutes unless a proper construction joint is formed. Concrete shall be compacted in its final position within 30 minutes of its discharge from the mixer unless carried in properly design agitators operating continuously when this time shall be within 2 hours of the addition of cement to the mix and within 30 minutes of its discharge from the agitator. Except where otherwise agreed to be the engineer in charge concrete shall be deposited in horizontal layers to a compacted depth of not more than 0.45 meter when internal vibrators are used and not exceeding 0.3 meter in all other cases
- 4.9 In the case of reinforced concrete work workability shall be such that the concrete surrounds and properly grips all reinforcement. The degree of consistency which shall depend upon the nature of work and methods of vibration of concrete shall be determined by regular slump tests. Following slump shall be adopted for different types of works.

Type of work	vibrators used	
	Where vibrators are used	Where are not

Mass concrete in RCC foundation s footings and retaining walls	10 25 mm	80mm
Beams slabs and columns simply reinforced	25 40mm	100 120mm
Thin RCC section or section with mm congested steel	40 50mm	120 150mm

5.1. When concreting has to be resumed on a surface which has hardened, it shall be roughened, swept, clean, thoroughly wetted and covered with a 13 mm. thick layer of mortar shall be freshly mixed and placed immediately before placing of new concrete. Where concrete has not fully hardened, allegiance shall be removed by scrubbing the well surface with wire or bristle brushes, care being taken to avoid dislodgement of any particles of coarse aggregate. The surface shall then be thoroughly wetted, with neat cement grout. The first layer of concrete to be placed on the Is surface shall not exceed 150mm in thickness, and shall be well rammed against old work particular attention being given to corners and close spots.

Transporting and Placing the Concrete

6.0 The concrete shall be handed from the place of mixing to the final position in not more than 15 minutes by the method as directed and shall be placed into its final position compacted and finished within 30 minutes of mixing with water i.e. before the setting commences.

6.1 The concrete shall be laid in layers of 15 cms to 20 cms.

6.2 All concrete shall be compacted to produce a dense homogeneous mass with the assistance of vibrations, unless otherwise permitted by the Engineer in charge for exceptional cases , such as concreting under water, where vibrators cannot be used. Sufficient vibrators in serviceable condition shall be kept at site so that spare equipment is always available in the event of break downs.

6.3 Placing Lean concrete shall be laid or placed by a paver with electronic sensor. The equipment shall be capable of laying the material in one layer in an even manner without segregation, so paving machine shall have high amplitude ramping bars to give good initial compaction to the sub-base.

At longitudinal or transverse construction joints, unless vertical forms are used, the edge of compacted material shall be cut back to a vertical face where the correct thickness of the properly compacted material has been obtained.

7.0 Curing

7.1 Immediately after compaction, concrete shall be protected against harmful effects of weather, including rain, running water , shocks vibrations traffic rapid temperature charges frost and driving out process shall be covered with wet jute bags or the similar absorbent material approved by the Engineer in charge soon after the initial set, and shall be kept continuously wet for a period of not less than 14 days from the date of placement. Masonry work over the foundation concrete may be started after 48 hours of its laying but the curing of concrete shall be continued for a minimum period of 14 days.

7.2 After the final set, the concrete shall be kept continuously wet if required by pounding for a period of not less than 7 days from the date of placement. Hard and bitter water shall not be used for curing.

7.3 Traffic

No heavy commercial vehicles like trucks and buses shall be permitted on the lean concrete sub base after its construction. Light vehicles if unavoidable may however be allowed after 7 days of its construction with prior approval of the engineer.

8.0 Contraction joints

8.1 Contraction joints shall consist of a mechanical sawn joint groove 3x20 mm and ¼ to 1 3 depth of the slab + 5 mm or -5 mm or as stipulated in the drawings and shall be cut by concrete cutter machine.

8.2 The contraction joint shall be cut as soon as the concrete has undergone initial hardening and is hard

enough to take the load of joint sawing machine without causing damage to the slab.

8.3 The line of the joint within the tolerances given in clause 600.2.6.2.1 and at such depth below the surface as will not impede the passage of the finishing straight edges or oscillating beams of the paving machines. The adjacent slabs shall be completely separated from each other by providing joint filler board. Space around the dowel bars, between the sub base and the filler board shall be packed with a suitable compressible material to block the flow of cement slurry.

9.1 Longitudinal joint

The longitudinal joints shall be machine cut as per details of the joints shown in the drawing. The groove may be cut after the final set of the concrete. Joints should be sawn to at least 1/3 the depth of the table +5mm or – 5 mm as indicated in the drawing.

10.0 Mode of Measurement and Payment

10.1 The payment shall be made on SQMT basis of the finished work

10.2 The necessities labour material Equipment's tools and plant conveyance including loading and unloading etc. shall be provided by the contractor as directed by engineer in charge.

10.3 The item shall be measured for its length and width limiting dimension in this specified on this plan or as directed.

10.6 The rate shall be for a unit of one SQMT.

Item No 122 Steel work, welded in built up sections framed work including cutting, hoisting, fixing in position and applying a priming coat of red lead paint. (A)In beams and joists, channels angles Tees, flats, with connecting plates or angle cleats as in main and cross beams. Hip and jack rafters, purlins connected to common rafters and the like including Painting two coats (excluding priming coat) on new steel and other metal surface with enamel paint as per Engineer in charge.

The item shall be executed as per the relevant specification of General Technical Specification for Building Works **It. No.11.4.(D) P.no 70+ It. No.19.7 P.no 122**

Item No 123 Providing and fixing pre-coated corrugated G.I. sheet of class-3 roofing fixed with galvanized iron J or L Hooks, Bolts and nuts 8mm diameter with bitumen and G.I. limpet washer or G.I. limpet washer. filled with white lead complete excluding the cost of purlins, Rafters and Trusses.(1) 0.50 mm thick sheet.

For detail specification refer **item No.-15.1/P.91** of G.T.S. booklet. 0.5 mm pre-coated G.I. Sheet shall be used self drilling screw shall be used for fitted for G.I. precoated sheet.

Mode of Measurement & Payment

The item shall be measure and rate shall be for a unit of One Smt.

Item No 124 Providing and fixing pre-cast concrete kerb stone of gray cement based concrete block 30 cm length, 30 cm height and 15cm thick of M200 grade concrete as per approved design and including excavation for fixing in proper line and level, filling the joint with C:M 1:3 (1 cement : 3 fine sand) etc complete.

Water shall conform to M-1, P-3 cement shall conform to M-3, sand shall conform to M-6, P.4 stone agg, 20

mm nominal size shall conform to M-12, P.5 cement concrete M-200 of G.T.S. Booklet.

Casting of Kerb blocks :- The casting of the kerb block shall be done by using rubber dye to obtain the desing surface, finish and texture. Adequate quantity of plasticisers shall be added in the concrete mixes directed by the engineer in charge. The colour and texture of the kerbing stone blocks shall have to be get approved by E.I.C. & Architect.

Workmanship :- The precast C.C. kerbing blocks shall be laid in proper line & level horizontally as well as vertically as directed by E.I.C. The joints of paver blocks shall be filled with C.M. 1:3 (1 cement : 3 Sand)

Mode of Measurement & Payment

The item shall be measure and rate shall be as per unit of One Rmt.

Item No 125 Removing and scraping of old deteriorated plaster of any thickness from wall / R.C.C member including stacking of serviceable material and disposal of unserviceable from site of work with all lead and lift

MATERIAL

- Tools & Equipment:
Suitable hand tools such as chisels, hammers, scrapers, wire brushes, and mechanical tools where required shall be use

WORKMANSHIP

- The work shall be carried out by skilled labour experienced in demolition and surface preparation works.
- The existing deteriorated, loose, cracked, or damaged plaster shall be carefully removed from walls and/or R.C.C. members using chisels, hammers, or mechanical tools.
- Removal shall be done up to the required depth or till sound base surface is achieved.
- Care shall be taken not to damage the structural members (brickwork/RCC surface) during removal.
- All loose mortar, dust, laitance, and foreign materials shall be thoroughly cleaned using wire brushing and washing if required.
- The surface after removal shall be:
 - Roughened to provide proper key for new plaster
 - Free from loose particles and dust
- Segregation of Material:
 - Serviceable materials (if any) shall be carefully stacked at designated locations as directed by the Engineer-in-Charge.
 - Unserviceable materials/debris shall be collected and disposed of outside the site.
- Disposal:
 - Debris shall be disposed of with all lead and lift as per local authority rules.
 - Site shall be kept clean and free from accumulation of waste.
- Necessary precautions shall be taken for:
 - Safety of workers
 - Protection of adjacent structures, finishes, and services
- Scaffolding, if required, shall be provided for working at heights.
- The work shall be carried out as directed by the Engineer-in-Charge.

MODE OF MEASUREMENT AND PAYMENT

The item shall be measured in Square Metres (Sqm) and payment shall be for a unit of per Square Metres (Sqm)

Item No 126 Demolition of Brick Work and stone masonry including stacking of serviceable materials and disposal of unserviceable materials with all lead and lift (ii) In Cement Mortar

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 20.11 (II) P. No. 148**

Item No 127 Demolition including stacking of serviceable materials and disposal of unserviceable materials with all lead and lift (A) RCC Work

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 20.3 P. No. 147**

Item No 128 Dismantling tiled of stone floors laid in mortar including stacking of serviceable materials and disposal of unserviceable materials with all lead and lift.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 20.23 P. No. 148**

Item No 129 Dismantling doors, windows, ventilators etc. (wood or steel) shutters including chowkhats architraves, holdfasts and other attachment etc. complete and stacking them within all lead and lift.(i) Not exceeding 3 Sq.M. in area.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 20.49 (I) P. No. 150**

Item No 130 Dismantling C.I. pipes G.S.W.pipes and A.C. rain water pipes with fittings and clamps including stacking the materials with all lead and lift (for any dia, of pipe)

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 20.56 P. No. 151**

Item No 131 Dismantling sanitary fittings like wash basin. W.C. Pan Indian and European type, flushing tank etc. Including stacking the materials with all lead and lift.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.
No. 20.001 P. No. 151

Item No 132 Scraping oil paint from steel and other metal surface and making the surface even (with Hand Scraping.)

The relevant specification shall be followed as per General Technical specification for Building work booklet It.
No. 20.001 P. No. 151

Item No 133 Dismantalling Steel Work including distempering and stacking the materials with all lead and lift

The relevant specification shall be followed as per General Technical specification for Building work booklet It.
No. 20.43 P. No. 150

Item No 134 20mm thick sand faced cement plaster on walls upto height 10 metres above ground level consisting of 12mm thick backing coat of C.M. 1:3 (1-cement : 3-sand) and 8mm thick finishing coat of C.M. 1:1 (1-cement : 1-sand) etc. complete.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.
No. 17.95 P. No. 122

Item No 135 Providing 10 mm thick cement Mala plaster in single coat on ceilings & soffits for interior plastering upto floor two level and finished even and smooth in (ii) Cement Mortar 1:3 (1 Cement : 3 Fine Sand)

The relevant specification shall be followed as per General Technical specification for Building work booklet It.
No. 17.58(I) P. No. 119

Item No 136 Removing dry or oil bound distemper by a washing and scraping and sand papering the wall surface smooth including necessary repairs to scratches complete.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.
No. 18.33 P. No. 129

Item No 137 Applying two coats Birla or Asian acrylic lappi (putty) on wall / ceiling surface by using two coats of primer of approved brand and preparing the surface even and smooth for colour work.

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

No 18.11.+18.44.+19.21 P. No. 125+132+140

Note : Applied priming coat to wall surface instead of steel surface order of method of applying two coat of Birla or Asian brand acrylic lapy (putty) and primer shall be as per instruction given by EIC.

Item No 138 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

Item No 139 Wall painting (two coats) with Royale luxury 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 (Note: consider Royale luxury emulsion paint instead of plastic emulsion paint)

Item No 140 Painting two coats (excluding priming coat) on previously painted steel and other metal surface with enamel paint, brushing to give an even shade including cleaning the surface of all dirt, dust and other foreign matter.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.
No. 19.11+19.15 P. No. 138+140

Item No 141 Painting two coats (excluding priming coat) on new steel and other metal surface with enamel paint, brushing, interior to give an even shade including cleaning the surface an even shade including cleaning the surface of all dirt, dust and other foreign matter.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.
No. 19.7 P. No. 138

Item No 142 Painting two coats (excluding priming coat) on new wood and wood based surface with enamel paint, interior to give an even shade including cleaning the surface of all dirt, dust and other foreign matter sand papering and stopping.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.
No. 19.71 P. No. 142

Item No 143 Painting one coats (excluding priming coat) on previously painted wood and wood based surface with enamel paint, to give an even shade including cleaning the of all dirt, dust and other foreign matter.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 19.73+19.75 P. No. 142**

Item No 144 Polishing with melamine polish over existing wood and wood based surface to given even surface including cleaning oil, grease, dirt and sand papared smooth and including a coat of wood filler.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 19.88 P. No. 144** (Consider melamine polish instead of French polish)

Item No 145 Applying Smooth/Metalic texture paint of heavy bodied water based acrylic paint apply with a roller trowel or sponge depending a textured finish on interior walls & providing decorative appearance with all material & labour etc. compled.

Materials

Water : Shall Conform M1 page no-9 in General Technical Specification Booklet.

Paints : Shall Conform M44 page no-21 in General Technical Specification Booklet.

Acrylic Texture Paint

- Heavy-bodied water based acrylic texture paint of approved make.
- Smooth/metallic finish type as specified.
- UV resistant, washable and fungus resistant.
- Low VOC and suitable for interior applications.
- Shade and texture pattern as approved by Architect/Engineer-in-Charge.

Primer

- Water based acrylic wall primer compatible with texture system.
- Conforming to relevant IS standards for interior primers.

Wall Putty (if required)

- Acrylic/cement based wall putty of approved make.
- Smooth finishing grade suitable for interior surfaces.

Metallic Additives/Pigments

- Manufacturer approved metallic pigments/additives for metallic finish where specified.

Workmanship

Surface Preparation

- Surface shall be cleaned thoroughly and made free from dust, grease, loose particles and old flaking paint.
- Uneven surfaces, cracks and dents shall be repaired with suitable filler/putty.
- Surface shall be smooth, dry and properly cured before application.

Primer Application

- One coat of approved acrylic primer shall be applied uniformly.
- Primer shall be allowed to dry completely before further application.

Texture Application

- Texture paint shall be mixed thoroughly as per manufacturer's instructions.
- Application shall be carried out using roller, trowel or sponge depending upon required texture pattern.
- Texture shall be applied uniformly over entire surface.
- Metallic finish shall be evenly distributed without patchiness.
- Pattern consistency shall be maintained throughout work.

Finishing

- Finished surface shall be free from cracks, peeling, roller marks or uneven texture.
- Shade and texture shall match approved sample.
- Junctions and corners shall be neat and properly finished.

Protection and Cleaning

- Adjacent surfaces, flooring and fixtures shall be protected during application.
- Paint stains and splashes shall be cleaned after completion.

Mode of Measurement and payment

Texture paint shall be measured and payment will made for a unit of Square Metre (Sq.m) of finished surface area.

Item No 146 Providing and fixing door having side hung single shutter having factory fabricated std. Extruded aluminium colour anodized hollow section {Section 63.50 x 38 mm x 2.50 mm thick } for door frame, hollow portion of door frame shall be filled with non teakwood wood, with factory made 35 mm. Thick flush door both side 1 mm thick pre laminated with knob lock as per detail colour & pattern apporoved by this office including necessary anodized alluminum fixtures and fastenings.

Materials

A Non-Teak Wood: Shall Conform M29.A page no-16 in General Technical Specification Booklet.

Wooden Flush Door Shutters (Solid Core): Shall Conform M30 page no-16 in General Technical Specification Booklet.

Aluminium Doors, Windows, Hold Fast: Shall Conform M31 page no-17 in General Technical Specification Booklet.

Fixtures and Fastenings: Shall Conform M43 page no-19 in General Technical Specification Booklet.

Aluminium Frame Section

- Extruded aluminium hollow section of size 63.50 mm × 38 mm × 2.50 mm thick.
- Colour anodized finish.
- Alloy and temper conforming to IS 733 and IS 1285.
- Minimum anodizing thickness as per IS 1868.

Non-Teak Wood Infill

- Well seasoned non-teak wood filling inside hollow frame section.
- Free from defects, cracks and warping.
- Moisture content not exceeding 12%.

Flush Door Shutter

- Factory made 35 mm thick solid core flush door shutter.
- Both sides finished with 1 mm thick decorative laminate.
- Conforming to IS 2202.
- Laminate colour and pattern as approved.

Decorative Laminate

- High pressure decorative laminate conforming to IS 2046.
- Scratch resistant and moisture resistant.

Hardware and Accessories

- Aluminium anodized hinges, handles, tower bolts, stopper and fixing accessories.
- Knob lock of approved make.
- Fasteners shall be rust resistant.

Adhesive

- Synthetic resin adhesive conforming to IS 848.

Workmanship

Fabrication of Aluminium Frame

- Aluminium sections shall be cut accurately to required dimensions.
- Corners shall be mechanically jointed or cleated properly.
- Hollow portion shall be tightly filled with non-teak wood.
- Frame shall be true to line, level and plumb.

Fixing of Door Frame

- Frame shall be fixed rigidly in position using approved fasteners/holdfasts.
- Proper alignment shall be maintained.
- Gaps between frame and wall shall be filled neatly.

Door Shutter Fixing

- Flush door shutter shall be factory finished and free from defects.
- Shutter shall be fixed with approved hinges.
- Clearance between frame and shutter shall be uniform.
- Opening and closing operation shall be smooth and noiseless.

Laminate Finish

- Laminate surface shall be smooth and free from scratches, blisters or edge lifting.
- Edge banding/trimming shall be neat and properly finished.

Hardware Fixing

- Knob lock and all fittings shall be accurately positioned.
- Hardware shall be firmly fixed and properly aligned.
- Moving parts shall operate smoothly.

Finishing

- Aluminium finish shall be uniform without dents or discoloration.
- Completed door assembly shall be rigid, level and properly functioning.
- Surface shall be cleaned after installation.

Mode of Measurement and payment

Door shall be measured and payment for a unit for Square Metre (Sq.m) of clear opening area.

Item No. 147

P & L 396 X 396 ceramic tiles 8 mm thick tile flooring over 20 mm (average) base of cement mortar 1:6 (1 cement: 6 coarse sand) on new surface or fixing on existing flooring by adhesive material and jointed with color cement slurry including finished with flush pointing & cleaning the surface etc. complete

For detail specification refer item No.-14.95(C)/P.90 of G.T.S. booklet. The parking tiles size shall be 396 x 396 mm ceramic body instead of 600 x 600 mm vitrified tiles.

Mode of Measurement and payment

The item shall be measure and rate shall as per unit of One Smt.

Item No. 148

Providing and laying 600 x 600 Full body Vitrified 16 mm thick tile flooring over 20mm. (average) base of cement mortar 1:6 (1cement :6 coarse sand) or L.M. 1:1.5 laid and making 5mm Spacer all around tiles and filling with epoxy materials etc. complete.

For detail specification refer item No.- 14.94/P.90 of G.T.S. booklet. Vitrified tiles shall be size 600 x 600 and 16

mm thick. 5mm Spacer shall be done all four side. Epoxy shall be filled in 5mm groove. The work shall be carried out as directed by E.I.C.

Mode of Measurement and payment

The item shall be measure and rate shall as per unit of One Smt.

Item No. 149

Providing & Fixing Sandwich type Platform of 600 mm wide using Top 18 mm thick granite of approved shade and sample and bottom 25 mm thick single side Polished kota stone with 25 mm thick screed of cement mortar 1:3 With granite Facia Patti and vertical End granite supports. The stone shall be fixed by chassing in to the wall surface and supported vertically with 25mm thick sandwich kota stone support including SS Sink of size 610 x 460 mm waste brass coupling, stainless steel extension nipple, flexible PVC outlay pipe, Hindware Sink cock with Casted Swinging Spout F100034 etc complete as suggested by Architect/Engineer -in-charge.

Materials

Water: Shall Conform M1 page no-9 in General Technical Specification Booklet.

Cement: Shall Conform M3 page no-9 in General Technical Specification Booklet.

Sand: Shall Conform M6 page no-10 in General Technical Specification Booklet.

Cement Mortar: Shall Conform M11 page no-11 in General Technical Specification Booklet.

Fixtures and Fastenings: Shall Conform M43 page no-19 in General Technical Specification Booklet.

Rough Kotah Stone: Shall Conform M48 page no-23 in General Technical Specification Booklet.

Polished Kotah Stone: Shall Conform M49 page no-23 in General Technical Specification Booklet.

Granite Stone Slab : Shall Conform M52 page no-23 in General Technical Specification Booklet.

Stainless Steel Sink

- Sink size: 610 mm × 460 mm.
- Made from stainless steel grade SS 304.
- Minimum thickness 0.8 mm.
- Satin/matte finish.
- Conforming to relevant IS standards.

Brass Waste Coupling

- Heavy duty brass waste coupling with stainless steel strainer.
- Chromium plated finish.

Stainless Steel Extension Nipple

- SS extension nipple suitable for sink connection.
- Corrosion resistant.

Flexible PVC Outlet Pipe

- Flexible PVC waste pipe of approved quality.
- Leak-proof and durable.

Sink Cock

- Hindware sink cock with casted swinging spout model F100034 or approved equivalent.
- Chromium plated brass body.
- Conforming to IS 8931 where applicable.

Workmanship

Preparation

- Platform location and level shall be marked accurately.
- Wall chasing shall be done carefully to required depth for proper embedding and support.
- Surface shall be cleaned before fixing.

Cement Mortar Bedding

- 25 mm thick cement mortar bedding in proportion 1:3 shall be prepared using approved cement and sand.
- Mortar shall be mixed uniformly and used fresh.

Fixing of Kota Stone

- Bottom layer of 25 mm thick single side polished Kota stone shall be laid properly over supports.
- Vertical supports of 25 mm thick Kota stone shall be fixed true to line and plumb.
- Proper bearing and support shall be ensured.

Fixing of Granite

- 18 mm thick granite slab shall be machine cut and edge polished.
- Granite shall be fixed over mortar bed true to line and level.
- Joints shall be thin, uniform and properly finished.
- Granite fascia patti and vertical end supports shall be fixed neatly.

Sink Installation

- Opening for sink shall be machine cut accurately.
- Sink shall be properly seated and sealed.
- Waste coupling, extension nipple and outlet pipe shall be connected leak-proof.
- Sink cock shall be fixed firmly and aligned properly.

Finishing

- All exposed granite and Kota stone edges shall be machine polished.
- Surface shall be even and free from cracks, stains or chipped edges.
- Joints shall be properly finished.
- Platform shall be cleaned after completion.

Testing

- Water supply and drainage connections shall be tested for leakage.
- Sink and fittings shall function smoothly.

Mode of Measurement and payment

Sandwich platform shall be measured in Square meter (Sqm) along finished length.

Item No. 150

Providing and fixing one piece made from 18 mm thick granite shelves in cupboard using approved adhesive to adhere two granite slab having half round moulding and fixed with masonry / R.C.C. member with three sides jari of required size and depth including finishing with cement mortar 1:1 (1 cement : 1 coarse sand) making good the wall / R.C.C member in the line and level etc. complete as per detailed drawing.

Materials

Water: Shall Conform M1 page no-9 in General Technical Specification Booklet.

Cement: Shall Conform M3 page no-9 in General Technical Specification Booklet.

Sand: Shall Conform M6 page no-10 in General Technical Specification Booklet.

Cement Mortar: Shall Conform M11 page no-11 in General Technical Specification Booklet.

Granite Stone Slab: Shall Conform M52 page no-23 in General Technical Specification Booklet.

Adhesive

- Stone fixing adhesive/epoxy adhesive of approved make.
- Suitable for granite to granite bonding.
- High bonding strength and moisture resistant.

Cement Mortar

- Cement mortar in proportion 1:1 using approved cement and coarse sand.
- Mortar shall be freshly mixed and workable.

Preparation

- Granite slabs shall be checked for shade, thickness and finish.
- Surface receiving shelf shall be cleaned and prepared.
- Jari/chasing in wall or R.C.C. member shall be made carefully to required dimensions without damaging structure.

Granite Shelf Fabrication

- Granite shall be machine cut to required size.
- Granite pieces shall be bonded using approved adhesive to form one piece shelf wherever required.

- Exposed front edge shall be finished with half round moulding.
- Edges shall be machine polished smooth and even.

Fixing of Shelf

- Shelf shall be embedded into wall/R.C.C. member on three sides in prepared jari.
- Proper level and slope, where required, shall be maintained.
- Shelf shall be fixed rigidly without vibration or deflection.
- Cement mortar 1:1 shall be packed properly in grooves and joints.

Finishing

- Damaged wall surfaces shall be repaired and finished neatly.
- Exposed surfaces shall be cleaned and polished.
- Joints shall be neat and inconspicuous.
- Granite surface shall be free from cracks, chips, stains or scratches.

Alignment

- Shelves shall be fixed true to line and level.
- Uniform projection and alignment shall be maintained throughout.

Mode of Measurement and payment

Granite shelf shall be measured and payment for unit of Square Metre (Sq.m)

Item No. 151 Providing and fixing cast iron (Spun) Nahni trap of the following nominal diameter of self cleaning design with C.I. screaed down or higned grating including cost of cutting and making good the walls and floor 100mm inlet and 50mm outlet.(C) 100mm dia.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 23.87 P. No. 164**

Item No. 152 Providing and fixing PVC SWR Nahni trap IS 14735 for drain -75 mm diameter with jail of the following nominal diameter of self cleaning design wit C.I. scread down or hinged grating including the cost of cuttiiong and making good the wall.

The relevant specification shall be followed as per General Technical specification for Building work booklet **It. No. 23.87 P. No. 164** (Consider Use PVC Nahni trap instead of Cast iron Nahni trap)

Item No. 153 Providing and fixing colour wash down water closet Orissa type W.C. pan with integral p or s trap jointed with C.I. pipe in C.M 1:1 etc. complete. (Cera, Nycer, Hindware).

The specification for this item shall conform to **It. No. 23.111(A), P-145 & It.No. 23.113(A)(I), P-146** of general technical specification booklet for building works. Except that the Orissa type W.C. pan of Cera, Nycer, Hindware shall be used instead of Indian type W.C. pan of required colour and pattern.

Mode of Measurement and payment

The item shall be measure and rate shall be for a unit of one number.

- Item No. 154** 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

For detail specification refer **item No.-23.112 A/P.146** of G.T.S. booklet.

Mode of Measurement and payment

The item shall be measure and rate shall as per unit of One number.

- Item No. 155** Providing laying and jointing in true line and level 15mm dia. U.P.V.C. Pipe (SCH- 40) for cold water including fittings make 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.

For detail specification refer **item No.-23.2 /P.160** of G.T.S. booklet. (Consider 15mm UPVC Pipe instead of Galvanised mild steel tube.)

- Item No. 156** Providing laying and jointing in true line and level 25mm dia. U.P.V.C. Pipe (SCH- 40) for cold water including fittings make 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.

For detail specification refer **item No.-23.2 /P.160** of G.T.S. booklet. (Consider 25mm UPVC Pipe instead of Galvanised mild steel tube.)

- Item No. 157** Providing laying and jointing in true line and level 32mm dia. U.P.V.C. Pipe (SCH- 40) for cold water including fittings make 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.

For detail specification refer **item No.-23.2 /P.160** of G.T.S. booklet. (Consider 32mm UPVC Pipe instead of Galvanised mild steel tube.)

- Item No. 158** Providing laying and jointing in true line and level 40mm dia. U.P.V.C. Pipe (SCH- 40) for cold water including fittings make 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.

For detail specification refer **item No.-23.2 /P.160** of G.T.S. booklet. (Consider 40mm UPVC Pipe instead of Galvanized mild steel tube.)

Item No. 159 Providing and fixing Jaquar / Somany C.P. Brass angle Cock / Conceal Cock of Fonte / Vignette series with C.P. brass Nipple & brass elbow etc. complete. Code FLR 5053N/ FUS 29053

For detail specification refer **item No.-23.96(A)/P.151** of G.T.S. booklet. Jaquar / Somany C.P. Brass angle cock of Fonte / Vignette series with C.P. brass Nipple & brass elbow shall be used instead of stop cock.

Mode of Measurement and payment

The rate shall be unit of One Number.

Item No. 160 Providing & fixing C.P. brass heavy hand faucet of approved quality. etc. complete.

Materials

Fixtures and Fastenings: Shall Conform M43 page no-19 in General Technical Specification Booklet.

Bib Cocks and Stop Cock: Shall Conform M57 page no-25 in General Technical Specification Booklet.

C.P. Brass Hand Faucet

- Heavy duty brass hand faucet with chromium plated finish.
- Conforming to IS 8931.
- Smooth operating lever/trigger mechanism.
- Corrosion resistant and leak-proof.
- Approved make and design.

Flexible Hose (if applicable)

- Flexible PVC/stainless steel braided hose suitable for plumbing applications.
- Leak-proof and pressure resistant.

Fixing Accessories

- Brass nipples, sockets, washers, PTFE tape and other required accessories.
- Chromium plated exposed fittings where applicable.

Workmanship

Preparation

- Location and alignment shall be checked before fixing.
- Pipe threads and fittings shall be cleaned properly.

Fixing

- Hand faucet shall be fixed firmly in correct position.
- Connections shall be properly threaded and sealed using approved jointing material/PTFE tape.

- Faucet shall be aligned properly and fixed without strain on pipe fittings.

Finishing

- Chromium plated surface shall be cleaned after installation.
- Surface shall be free from scratches, dents or stains.
- Excess sealant and debris shall be removed.

Mode of Measurement and payment

Hand faucet shall be measured and payment for a unit of Number (Each) basis.

Item No. 161 Providing and fixing S.W. gully trap with C.I. grating brick masonry chamber and water tight C.I. cover with frame of 300 mm x 300 mm Size (inside) with standard weight (i) Square mouth traps. (A) 100 mm x 100 mm size - P type.

For detail specification refer **item No.-24.19(I) /P.176** of G.T.S. booklet.

Item No. 162 Providing and fixing Gun metal check or non-return fullway wheel valve.(A) 15mm dia.

For detail specification refer **item No.-23.99(I) /P.171** of G.T.S. booklet.

Item No. 163 Providing and fixing Gun metal check or non-return fullway wheel valve.(A) 20mm dia.

For detail specification refer **item No.-23.99(I) /P.171** of G.T.S. booklet.

Item No. 164 Providing and fixing Gun metal check or non-return fullway wheel valve.(A) 25mm dia.

For detail specification refer **item No.-23.99(I) /P.171** of G.T.S. booklet.

Item No 165 Providing and fixing to wall ceiling and floor 10.0 Kg. F/Cm² working pressure polythene pipes of the following outside Dia. Low density, complete with special flange compression type fittings, wall clips etc. including making good the wall ceiling and floor.(F) 110 mm

The relevant specifications of Building Booklet **It. No.23.8./ Page No.144** shall be followed expect use 110 mm Rain water pipe 10.00Kg F/CM² 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 shall be concealed instead of 50mm dia & 6 kgs/sq.cm. working pressure polythene pipes

Item No 166 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.

For detail specification refer **item No.-23.2 /P.160** of G.T.S. booklet. (Consider 160mm UPVC Pipe instead of Galvanised mild steel tube.)

Item No 167 Providing and Fixing WPC door with frame with 100 x 45 mm frame hollow WPC (wood plastic Composite) door frame wrapped with 0.14 to 0.20 mm PVC film & 32 mm doors with both side laminate, with matching shade of PVC wrapping including 3.15 mm exterior grade HDF door Skin with tubular particle board (from Saurland Spanplatte Germany) / 55 ++ mm on all 4 sides with imported dried pinewood (USA) / inner frame Dynea PF thermosetting glue from norway.

Materials

Only applicable materials from R & B booklet are listed below:

A Non-Teak Wood: Shall Conform M29.A page no-16 in General Technical Specification Booklet.

Wooden Flush Door Shutters (Solid Core): Shall Conform M30 page no-16 in General Technical Specification Booklet.

Particle Board: Shall Conform M40 page no-19 in General Technical Specification Booklet.

Fixtures and Fastenings: Shall Conform M43 page no-19 in General Technical Specification Booklet.

WPC Door Frame

- Hollow WPC frame section of size 100 mm × 45 mm.
- Uniform profile free from cracks, warping and surface defects.
- Moisture resistant, termite resistant and waterproof.
- PVC wrapped with 0.14 mm to 0.20 mm decorative PVC film.

Door Shutter

- 32 mm thick factory made flush type shutter.
- Both sides finished with decorative laminate of approved shade and texture.
- Matching PVC wrapped edges.

HDF Door Skin

- 3.15 mm thick exterior grade HDF skin.
- Smooth, uniform and moisture resistant.
- Properly bonded to core material.

Core Material

- Tubular particle board core of approved quality.
- High density and dimensionally stable.
- Properly seasoned and bonded.

Pinewood Reinforcement

- Imported dried pinewood reinforcement on all four sides.
- Moisture content within permissible limit.
- Free from defects and warping.

Adhesive

- Phenol formaldehyde (PF) thermosetting glue of approved quality.
- Waterproof bonding type.

Decorative Laminate

- High pressure decorative laminate conforming to IS 2046.
- Scratch resistant and moisture resistant.

Hardware and Fixtures

- Hinges, tower bolts, handles, stoppers and screws of approved make.
- Rust resistant fixtures and fastenings.

Workmanship

Workmanship shall comply with relevant IS codes and approved joinery practice.

Frame Fixing

- WPC frame shall be fixed true to line, level and plumb.
- Frame shall be rigidly anchored using approved fasteners.
- Gaps between wall and frame shall be filled properly.

Door Shutter Installation

- Shutter shall be factory finished and free from twisting or warping.
- Hinges shall be fixed properly ensuring smooth operation.
- Uniform clearance between shutter and frame shall be maintained.

Laminate and PVC Finish

- Laminate surface shall be smooth and free from blisters or edge lifting.
- PVC wrapping shall be wrinkle-free and properly bonded.
- Matching shade and texture shall be maintained.

Hardware Fixing

- Hardware shall be fixed firmly and accurately aligned.
- Screws shall be properly tightened.
- Door operation shall be smooth and noiseless.

Finishing

- Exposed edges and joints shall be neatly finished.
- Surface shall be clean and free from scratches, dents or adhesive stains.
- Completed assembly shall be rigid and stable.

Mode of Measurement and payment

WPC door with frame shall be measured and payment for a unit of Square Metre (Sq.m)

Item No. 168

Providing and fixing window having extruded aluminum Colour anodized section frame main outer size 63.50 x 38.10 x 1.95 mm,@ Wt 1.094 Kg / Rmt, horizontal two track member size 61.85 mm x 31.75 mm x 1.20mm @ wt.of 0.695 Kg/mt, vertical member of size 61.85 mm x 31.75mm x 1.30 mm @ wt.of 0.659 Kg/mt with sliding shutters of horizontal member size 40mm x 18mm x 1.29mm @ wt.of 0.456Kg/mt, vertical member of size 40mm x 18mm x 1.29mm @ wt.of 0.456Kg/mt, @ Wt. 0.457 Kg/mt with 5 mm thick transparent bronze colour tinted float glass with powder coated aluminum fittings and fixtures and transparent silicon sealant glass fixing to frame as per details etc complete for window.

Materials

Aluminium Doors, Windows, Hold Fast: Shall Conform M31 page no-17 in General Technical Specification Booklet.

Glass : Shall Conform M38 page no-18 in General Technical Specification Booklet.

Fixtures and Fastenings: Shall Conform M43 page no-19 in General Technical Specification Booklet.

Aluminium Outer Frame

- Extruded colour anodized aluminium section of size:
 - 63.50 mm × 38.10 mm × 1.95 mm thick
 - Weight: 1.094 Kg/Rmt.
- Horizontal two-track member:
 - 61.85 mm × 31.75 mm × 1.20 mm
 - Weight: 0.695 Kg/Rmt.
- Vertical member:
 - 61.85 mm × 31.75 mm × 1.30 mm
 - Weight: 0.659 Kg/Rmt.
- Conforming to IS 733 and IS 1285.

Sliding Shutter Sections

- Horizontal shutter member:
 - 40 mm × 18 mm × 1.29 mm
 - Weight: 0.456 Kg/Rmt.

- Vertical shutter member:
 - 40 mm × 18 mm × 1.29 mm
 - Weight: 0.456 Kg/Rmt.
- Aluminium sections shall be straight, free from dents, twists and defects.

Anodizing

- Colour anodized finish conforming to IS 1868.
- Uniform finish free from discoloration and scratches.

Glass

- 5 mm thick transparent bronze colour tinted float glass.
- Conforming to IS 14900 and relevant float glass standards.
- Free from waves, bubbles and visual defects.

Silicon Sealant

- Neutral cure transparent silicon sealant.
- Weather resistant and compatible with aluminium and glass.

Fittings and Fixtures

- Powder coated aluminium handles, rollers, locks, guides and stoppers.
- Smooth sliding type rollers.
- Stainless steel screws and fixing accessories.

Glazing Accessories

- EPDM/rubber gasket, glazing bead and packing blocks of approved quality.

Workmanship

Workmanship shall comply with relevant IS codes and approved aluminium fabrication practice.

Fabrication

- Aluminium sections shall be accurately cut to required dimensions.
- Corners shall be mechanically jointed with cleats/screws.
- Fabrication shall be square, rigid and true to dimensions.

Frame Installation

- Window frame shall be fixed true to line, level and plumb.
- Proper anchoring with approved fasteners shall be provided.
- Gaps between frame and wall shall be sealed properly.

Shutter Assembly

- Sliding shutters shall be assembled accurately.
- Rollers shall ensure smooth and noiseless movement.

- Proper clearance between frame and shutter shall be maintained.

Glass Fixing

- Glass shall be carefully cut and installed without edge damage.
- Glass shall be fixed using rubber gasket, glazing beads and transparent silicon sealant.
- Sealant application shall be continuous and neat.
- No rattling or looseness shall be permitted.

Hardware Fixing

- Handles, locks, stoppers and accessories shall be fixed firmly.
- Sliding operation shall be smooth and easy.

Finishing

- Aluminium surface shall be clean and scratch free.
- Glass shall be cleaned after installation.
- Completed window shall be watertight and properly functioning.

Mode of Measurement and payment

Aluminium sliding window shall be measured and payment for a unit of Square Metre (Sq.m)

Item No. 169

Providing and fixing standard extruded of aluminium section of size 63.50 x 38.10 x 1.95 mm, @ Wt 1.094Kg / Rmt with colour anodized aluminium frame with 5 mm thick transparent bronze colour tinted float glass as details etc complete for fix window.

Materials

Aluminium Doors, Windows, Hold Fast: Shall Conform M31 page no-17 in General Technical Specification Booklet.

Glass: Shall Conform M38 page no-18 in General Technical Specification Booklet.

Fixtures and Fastenings: Shall Conform M43 page no-19 in General Technical Specification Booklet.

Aluminium Section

- Standard extruded aluminium section of size:
 - 63.50 mm × 38.10 mm × 1.95 mm thick
 - Weight: 1.094 Kg/Rmt.
- Alloy and temper conforming to IS 733 and IS 1285.
- Sections shall be straight, true and free from dents or twists.

Anodizing

- Colour anodized finish conforming to IS 1868.
- Uniform coating free from scratches, peeling or discoloration.

Glass

- 5 mm thick transparent bronze colour tinted float glass.
- Conforming to IS 14900 and relevant float glass standards.
- Free from bubbles, waviness and visual defects.

Glazing Accessories

- EPDM/rubber gasket, glazing beads and packing blocks of approved quality.

Silicon Sealant

- Neutral cure transparent silicon sealant.
- Compatible with aluminium and glass.
- Weather resistant and durable.

Fixtures and Fastenings

- Aluminium cleats, screws, anchors and fixing accessories.
- Stainless steel screws where required.

Fabrication

- Aluminium sections shall be accurately cut to required dimensions.
- Corners shall be mechanically jointed properly.
- Fabricated frame shall be square, rigid and true to size.

Frame Fixing

- Frame shall be fixed true to line, level and plumb.
- Proper anchoring with approved fasteners shall be provided.
- Gaps between frame and wall shall be sealed properly.

Glass Fixing

- Glass shall be cut accurately and fixed carefully without edge damage.
- Glass shall be fixed using approved rubber gasket/glazing bead system.
- Transparent silicon sealant shall be applied uniformly.
- Glass fixing shall be watertight and vibration free.

Finishing

- Aluminium surfaces shall be clean and free from scratches or dents.
- Glass shall be thoroughly cleaned after installation.
- Completed window shall be rigid and properly aligned.

Mode of Measurement and payment

Fixed aluminium glazed window shall be measured and payment for a unit of Square Metre (Sq.m)

Item No. 170

Providing and fixing standard extruded aluminium section of size 63mm x 38.10mm x 1.2mm (Jindal Section :2434, @ Wt. 0.643 Kg/mt) with colour anodized aluminium frame for ventilation with 5 mm thick frosted glass as details etc complete for Ventilation

Materials

Aluminium Doors, Windows, Hold Fast: Shall Conform M31 page no-17 in General Technical Specification Booklet.

Glass: Shall Conform M38 page no-18 in General Technical Specification Booklet.

Fixtures and Fastenings: Shall Conform M43 page no-19 in General Technical Specification Booklet.

Aluminium Section

- Standard extruded aluminium section:
 - Size: 63 mm × 38.10 mm × 1.20 mm thick
 - Jindal Section No.: 2434
 - Weight: 0.643 Kg/Rmt.
- Alloy and temper conforming to IS 733 and IS 1285.
- Sections shall be free from bends, twists and surface defects.

Anodizing

- Colour anodized finish conforming to IS 1868.
- Uniform finish with proper coating thickness.

Frosted Glass

- 5 mm thick frosted/toughened etched float glass of approved quality.
- Conforming to IS 14900 and relevant glass standards.
- Uniform frosted appearance without scratches or distortion.

Glazing Accessories

- EPDM/rubber gasket, glazing beads and packing blocks of approved quality.

Silicon Sealant

- Neutral cure transparent silicon sealant.
- Weather resistant and suitable for aluminium glazing work.

Fixtures and Fastenings

- Aluminium cleats, stainless steel screws, anchors and approved fixing accessories.

Workmanship

Workmanship shall comply with relevant IS codes and approved aluminium fabrication practice.

Fabrication

- Aluminium sections shall be accurately cut and assembled.
- Corners shall be mechanically jointed properly.
- Fabricated frame shall be square, rigid and true to dimensions.

Installation

- Ventilation frame shall be fixed true to line, level and plumb.
- Proper anchoring arrangement shall be provided.
- Gaps between frame and wall shall be neatly sealed.

Glass Fixing

- Frosted glass shall be cut accurately and installed carefully.
- Glass shall be fixed using approved gaskets and glazing beads.
- Silicon sealant shall be applied uniformly to achieve watertight fixing.
- No looseness or rattling shall be permitted.

Finishing

- Aluminium surface shall be clean and free from scratches or dents.
- Glass surface shall be cleaned after installation.
- Completed ventilation shall be rigid and properly aligned.

Mode of Measurement and payment

Aluminium ventilation shall be measured and payment for a unit of Square Metre (Sq.m)

Item No. 171

Providing & laying terracota clay roofing tiles having interlocking arrangment for fixing on slopping roof on 10 mm thick cement mortar 1 :3 (1 cement : 3 coarse sand) and jointed with grey cement slurry including necessary scaffolding upto 10 mtr height etc. complete.as directed by engineer-in-charge.

Materials

Only applicable materials from R & B booklet are listed below:

Water: Shall Conform M1 page no-9 in General Technical Specification Booklet.

Cement : Shall Conform M3 page no-9 in General Technical Specification Booklet.

Sand : Shall Conform M6 page no-10 in General Technical Specification Booklet.

Cement Mortar : Shall Conform M11 page no-11 in General Technical Specification Booklet.

Terracotta Clay Roofing Tiles

- Machine made/burnt clay roofing tiles with interlocking profile.
- Uniform in size, shape and colour.
- Free from cracks, chips, warping and other defects.
- Well burnt and sound.
- Water absorption shall be within permissible limits.
- Conforming to relevant provisions of IS 654 (Clay Roofing Tiles).

Grey Cement Slurry

- Cement slurry prepared using approved cement and clean water.
- Uniform consistency suitable for tile jointing.

Workmanship

Workmanship shall comply with relevant IS codes and approved roofing practices.

Surface Preparation

- Roof surface shall be cleaned and checked for slope and level.
- Loose particles, dust and debris shall be removed.
- Proper slope for drainage shall be ensured.

Mortar Bedding

- 10 mm thick cement mortar in proportion 1:3 shall be prepared using approved cement and coarse sand.
- Mortar shall be spread evenly over prepared surface.

Laying of Tiles

- Terracotta tiles shall be soaked in water before laying where required.
- Tiles shall be laid true to line, level and slope.
- Interlocking arrangement shall be properly engaged.
- Tiles shall be laid with proper alignment and uniform joints.
- Cut tiles, where required, shall be neatly finished.

Jointing

- Joints shall be filled with grey cement slurry.
- Excess slurry shall be cleaned immediately.
- Finished surface shall be neat and uniform.

Curing

- Tiled surface shall be cured adequately for minimum 7 days or as directed.

Scaffolding and Safety

- Necessary scaffolding up to 10 metre height shall be provided.
- Proper safety measures shall be adopted during execution.

Finishing

- Roof surface shall be free from cracked or loose tiles.
- Alignment and slope shall be maintained uniformly.
- Surface shall be cleaned after completion.

Mode of Measurement and payment

Terracotta roofing tiles shall be measured and payment for a unit of Square Metre (Sq.m)

Item No. 172

Providing and laying Heavy duty reinforced acrylic water proofing Coating cover on existing ips flooring through authorised application of pidilite Industries Ltd. Using one coat of Dr.Fixit Premiseal and two coats of Dr.Fixit new coats in different colours including the repairing of surface cracks,damaged portion,sharpedged flooring etc.by means of polymer modified screed and filled with Dr.Fixit crack or Dr.Fixit unifiller or polymer modified motar in wider cracks including surface cleaning,washing and removing dust,dirt oil,grease and loose particle etc.prior to laying of water proofing treatements etc.including all aterial,labours,tools, machinary,taxes,etc. complete or as dircted by engineer by Engineer-in-charge or manufacturer's specification.

Materials

Water : Shall Conform M1 page no-9 in General Technical Specification Booklet.

Cement : Shall Conform M3 page no-9 in General Technical Specification Booklet.

Sand : Shall Conform M6 page no-10 in General Technical Specification Booklet.

Cement Mortar : Shall Conform M11 page no-11 in General Technical Specification Booklet.

Paints : Shall Conform M44 page no-21 in General Technical Specification Booklet.

Acrylic Waterproofing Coating

- Heavy duty elastomeric acrylic waterproof coating system.
- UV resistant, flexible and crack bridging type.
- Compatible with cementitious substrate.
- Applied strictly as per manufacturer's recommendations.

Primer Coat

- Dr. Fixit Primeseal/Premiseal or approved equivalent.
- Water based acrylic primer compatible with waterproof coating system.

Waterproof Top Coat

- Dr. Fixit Newcoat or approved equivalent in two coats of contrasting colours.
- Uniform film formation with excellent adhesion.

Polymer Modified Mortar/Screed

- Cement based polymer modified mortar for repairs and surface leveling.
- Suitable for waterproofing substrate preparation.

Crack Filler

- Dr. Fixit Crack-X / Dr. Fixit Unifiller or approved equivalent.
- Flexible crack filling compound for sealing cracks.

Workmanship

Workmanship shall comply with manufacturer's specifications, relevant IS codes and approved waterproofing practices.

Surface Preparation

- Existing IPS surface shall be thoroughly cleaned.
- Dust, dirt, oil, grease, laitance and loose particles shall be removed using wire brushing, washing and air cleaning where necessary.
- Surface shall be dry or damp as per manufacturer's recommendation before application.

Crack and Surface Repair

- Surface cracks, damaged areas and sharp edges shall be repaired before coating application.
- Wider cracks shall be opened in "V" groove pattern and filled with approved crack filler/polymer modified mortar.
- Depressions and undulations shall be repaired with polymer modified screed.

Primer Application

- One coat of Dr. Fixit Primeseal/Premiseal shall be applied uniformly by brush/roller.
- Primer coat shall be allowed to dry completely before applying subsequent coats.

Waterproof Coating Application

- Two coats of Dr. Fixit Newcoat or equivalent shall be applied in different colours.
- Second coat shall be applied only after complete drying of first coat.
- Coating shall be applied uniformly without pinholes, bubbles or thin patches.
- Required coverage and thickness shall be maintained as per manufacturer's specifications.

Junction Treatment

- All corners, joints and vulnerable locations shall receive extra reinforcement/treatment where required.

Finishing

- Finished surface shall be continuous, uniform and watertight.
- No peeling, blistering, cracks or exposed substrate shall be permitted.

Protection and Curing

- Treated area shall be protected from damage and water stagnation during curing period.
- Adequate curing/drying time shall be provided before use.

Mode of Measurement and payment

Waterproofing treatment shall be measured and payment for a unit of Square Metre (Sq.m)

Item No. 173

Providing and fixing Jaquar / Somany C.P. brass concealed body for single lever high flow diverter with button assembly code No. ALD-079N/ARC 87065C

Jaquar / Somany C.P. brass concealed body for single lever high flow diverter with button assembly code No. 079 or 193 shall be used for hot / cold water. It shall be fitted with brass elbow. The work shall be carried out as directed by Engineer in charge.

Mode of Measurement and payment

The item shall be measure and rate shall be unit of One Number.

Item No. 174

Providing and fixing Jaquar / Somany Florentine series single lever exposed parts of hi flow Divertor consisting of operating lever etc. completed.

Jaquar / Somany C.P. brass concealed body for single lever high flow diverter with button assembly code No. 079 or 193 shall be used for hot / cold water. It shall be fitted with brass elbow. The work shall be carried out as directed by Engineer in charge.

Mode of Measurement and payment

The item shall be measure and rate shall be unit of One Number.

Item No. 175

Providing and fixing Jaquar / Somany overhead shower round shape single flow chrome plate code No. OHS 1789 / 1759 & shower Arm SHA (487) 190 mm long light body round shape for wall mounted shower with flange etc. complete.

For detail specification refer item No.-23.141(A)/P.149 of G.T.S. booklet. Jaquar / Somany shower round shape single flow chrome plate code No. OHS 1789 / 1759 & shower Arm SHA (487) 190 mm long light body round shape

for wall mounted shower with flange shall be used.

Mode of Measurement and payment

The item shall be measure and rate shall be unit of One Number.

Item No. 176

Providing & fixing Frosted Film on glass in line & level etc. complete.

Frosted Film shall be Garware or equivalent brand. It shall be approved by engineer in charge. It shall be fitted in glass with no bubbles or air. If any patterns or design selected by architect shall be done.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of One Smt.

Item No. 177

Providing and fixing C.P brass wall mixture three in one cock 15mm dia. With center point (Jaquar/Cera brand RUBBY or victor code CHR5281PM make equivalent brand) as per E.I.C.

The relevant specification for this item shall be followed as per Item description & instruction given by Engineer in charge.

Mode of Measurement and payment

The item shall be measure and payment shall be made on One No. of basis.

Item No. 178

Providing & fixing 2.0 mm thick FRP plain or color sheet fixing with M.S. square pipe with necessary J bolts or screws & nuts etc. comp.

Material & Workmanship:

- The specification of item shall be followed as per item description and manufacturer specification as per instruction given by EIC/Architect.

Mode of Measurement and payment

Measurement and payment shall be done as per Smt. basis.

Item No. 179

Providing & fixing S.S. Square Heavy Brass Mortice Lock with necessary screw etc. complete.

S.S. Square Heavy Brass Mortice Lock shall be approved by E.I.C. it shall be fitted on door with line and level and proper locking arrangement. The work shall be carried out as directed by E.I.C.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of one No.

Item No. 180

Providing and fixing 1.3 mm PVC Flooring Fixing with SR 505 or Glue as directed by E.I.C.

PVC Flooring Shall be of 1.3 mm Thickness & it Shall be approved by E.I.C. It Shall be fitted on Floor by Chemical / Gule / Fevical Floor shall be finished & level Before Flooring Shall be done work shall be Carried as Directed by E.I.C.

Mode of Measurement and payment

The item shall be measure and rate shall be as per Unit of One Smt.

Item No. 181

Providing & fixing of 3 mm thick Aluminium composite Sheet with necessary aluminium pipe framing on backside with necessary screw, bolts & nuts etc. complete.

3 mm thick Aluminium composite Sheet shall be as per best Quality aluminium pipe Aluminium alloy used in the manufacturing of extruded section for Partition shall confirm to HE9-WP of I.S. 733 - 1956 and also hollow aluminium section confirm to IS designation HV9 - WP - IS - 1285 - 1958. Aluminium section of approved weight shall be procured at site. necessary framing shall be done and 3 mm thick Aluminium composite Sheet shall be fixed on framing. The work shall be carried out E.I.C.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of one Smt.

Item No. 182

Providing and fixing 3.0mm powder coated M.S. plate with CNC cutting with 7 tank process powder coating and fitting with black coated sheet etc. comp.

3mm powder coated MS sheet shall be approved by E.I.C. CNC cutting shall be done for proper design as given by consult architect. 7 tank process powder coating shall be done. For proper finishing it shall be fitted with MS powder coated stud. The work shall be carried as directed by E.I.C.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of one Smt.

Item No. 183

Providing and fixing Galvanised 50mm PUF Roof Panel 50mm with side Cap-50mm and Trapezoidal end Cap-20mm with hilti screw and rubber silicon sealer etc complete as directed by Engineer in charge.

For Details Specification refer It. No. 15.1/P.91 of GTS Booklet. 50mm PUF Pannel shall be used instead of GI corrugated sheet side cap-50mm & trapezoidal end cap-50mm shall be used for end & side fittings. The work shall be carried out as directed by E.I.C.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of one smt.

Item No. 184

Providing and laying 600 x 600 Full body Vitrified 16 mm thick tile flooring over 20mm. (average) base of cement mortar 1:6 (1cement :6 coarse sand) or L.M. 1:1.5 laid and making 5mm Spacer all around tiles and filling with epoxy materials etc. complete.

For detail specification refer item No.- 14.94/P.90 of G.T.S. booklet. Vitrified tiles shall be size 600 x 600 and 16 mm thick. 5mm Spacer shall be done all four side. Epoxy shall be filled in 5mm groove. The work shall be carried out as directed by E.I.C.

Mode of Measurement and payment

The item shall be measure and rate shall as per unit of One Smt.

Item No. 185

Providing and fixing 12 mm thick tuffan glass Door with Floor Spring of 80 to 100 Kg. Capacity, top and bottom patch, S.S. Handle 10" and wall to glass lock and necessary accessories with jointing with silicon etc. complete.

12 mm thick tuffan glass door shall be approved by engineer in charge. It shall be fitted with proper arrangement in line & level. It shall be free from any bubbles it shall be fitted line & level. The work is carried out by directed by engineer in charge necessary top-bottom patch, heavy floor spring, H handle 32x450 mm, Glass to Glass lock and necessary accessories shall be done and it shall be of inox, ozone or hardwyn company. The door shall be move on floor spring with easy movement

Mode of Measurement and payment

The item shall be measure and rate shall be unit One Sq.Mt.

Item No. 186

Providing 4 mm Luxture decorcem expose concrete or brick concrete coating and wall textured paint using base coat, tapping, durabond expose RCC materials and finishing with decorsil two coat etc. complete. As directed by consult architect.

Luxture concrete facades (the visual or exposed concrete). We observed that the visual concrete can be used as an stylish element, specially in the luxury or prestige sector of architecture Luxture concrete the exposed or visual concrete is a new revolutionary building material which is applied with a thickness of 3-12 mm it replicates like original concrete which can take on any shape and size which is perfect and without undulation.

Luxture's stone imitation coatings & wall textured paints are made up of high grade water-based acrylic/pure acrylic/ silicon emulsion, premium natural crushed stone and imported additives for decoration and protection of interior & exterior walls with natural stone effect.

Features

- * Stable color, excellent alkali & UV-resistance.
- * Applicable on many kinds of surfaces.
- * Water repellent.
- * Extraordinary weather resistance.
- * Anti-crack due to high elasticity & fiber contacts.
- * Environment friendly, low VOC.
- * Easy to apply

The surface must be sound, clean, dry, free from dust, oil, grease and laitance etc. All traces of release agents must

be removed. On chalky and dusty surfaces, oil loose material must be removed by stiff bristle brushing. after level the surface used 2.0 to 2.5 mm base coat black fiber mix concrete material and durabond mixture. Then necessary tapping done on wall as per deigns. Then durabond expose RCC material luture concrete concept shall be applied. after this two coats of decorsil chemical shall be applied for final finishing. for brick concrete wall after applying base coat 4" x 4" tapping shall be done than 5 to 6 mm thick brick concrete material shall be applied and finally mixture of two coats decorsil chemical and colour shall be applied for necessary brick wall pattern. The rate shall be include all necessary scaffloding. The work carried out as by directed engineer in charge.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of One Smt.

Item No. 187

Providing and fixing 6mm HPL (High Pressure Laminated Sheet) of Sundek or equivalent brand and 50mm x 25mm Alluminium box section pipe colour powder coated alluminium rivet.etc complete.

HPL laminate surface are durable, compact and highly impermeable due to the melamine resin they are made from and are not damaged by food and chemicals commonly used in the home; HPL is a thermosetting material and does not react with these substances. It is not subject to corrosion or oxidation and therefore does not require additional protective enamel or varnish. It is hygienic. It represents hostile territory for the proliferation of germs and bactria and, unlike othe materials of synthetic origin, has antistatic properties and therefore does not attravt dust. In addition, HPL laminate panels may be of large dimension and are therefore ideal for cladding extensive areas without joints or crevices where dirt could more easily collect.

They are therefore particularly suitable in all situtations that require maximum hygiene, from kitchenes to operating theatres. HPL is deal for convenience, hygiene, durability and ease of cleaning. It also represents a hoslite territory for the proliferation of germs and spores and is therefore an ideal material for all application involving direct contact with food. HPL are more hygenic and easier to clean than ordinary furniture finishes.

One of the properties of Arpa HPL is exceptional resistance to the growth of micro-organisms such as bacteria, moulds and fungi. This quality makes them ideal for application where higenie plays and essential role. Arpa has a special laminate in its collection with even greater hygienic properties, , Silverlam is biostatic, micro biologically tested laminate, which inhibits bacterial growth and reduces the number of bacteria by 99% in 24 hours. HPL laminates have excellent fire perfomance with lows smoke emissions.

Alluminum section 50 X 25mm shall be as per M31 the framing of alluminium section done both side at 0.60CM center to center. After making alluminum framing HPL sheet shall be fitted with Powdercoated rivets. The spacing shall be filled with silicon HPL sheet shall be fitted in Line & level & as directed by E.I.C.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of one sq.mt.

Item No. 188

Providing and fixing chain link jali of size 1.2 mt. height on existing M.S angle post with necessary pins in line & level etc. comp.

Chainlink jali shall be apporved by E.I.C. The work shall be carried out as directed by E.I.C. It shall be fited in line & level with G.I. wires.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of One Smt.

Item No. 189

Providing and Fixing 5mm Fluted Glass with necessary hardware & Materials etc. Completed.

The relevant specification for this item shall be followed as per item description and instruction given by Engineer in charge.

Mode of Measurement and payment

The item shall be measure and rate shall be for a unit of one Smt.

Item No. 190

Providing and Fixing Artificial Granite 15mm thick fixing on Service Table with necessary Chemical & Materials etc. Completed.

The relevant specification for this item shall be followed as per item description and instruction given by Engineer in charge.

Mode of Measurement and payment

The item shall be measure and rate shall be for a unit of one Smt.

Item No. 191

Providing and Laying 1200 x 600 mm vitrified 8 mm thick tile flooring over 50 mm (average) base of cement mortar 1:6 (1 cement: 6 coarse sand) on new surface and material and jointed with color cement slurry including finished with 4mm epoxy pointing & cleaning the surface etc. complete.

For detail specification refer item No.- 14.94/P.90 of G.T.S. booklet. Vitrified shall be size 1200 x 600 and 8 mm thick

Mode of Measurement and payment

The item shall be measure and rate shall as per unit of One Smt.

Item No. 192

Providing & fixing Roller blind of VENICE having thickness 0.35 mm thick with acrylic coating with superior quality acmedamechanism including Motors tubular one Nos and Remote for cantroling the Blind up and Down with all accessory fittings like bracket, chain etc. as directed by engineer in charge.etc. complete.

The relevant specification for this item shall be followed as per item description and instruction given by Engineer in charge.

Mode of Measurement and payment

The item shall be measure and rate shall be for a unit of one Smt.

Item No. 193

Providing and Fixing 50 mm repicon walls fixing with 51mm floor channels at bottom & 51 mm GI ceiling channels at top with line and Level etc. completed.

It shall be Sandwich pannel & Density shall be 700 - 800 Kg/m³ (152380P3:77) It's Size shall be 2400 x 600 mm, 2700 x 600 mm or 300 x 600mm It shall be weight shall not be less than 58Kg/m² for 75mm thick waqll It's edge profile shall be square beveled & Secrew withdraw l strength shall be greater than 0.3 Kn Rapicon walls are revolution ary drywall system. to maintaing solid effect of a conventional brick wall. It shall be comprises of sandwich pannels made of fiber rainforced aerated Cement concret & Ecerest wall bourds It Shall be fitted with 76mm floor channels at bottom and 51mm GI ceiling channels at to with line & level work shall be carried out EIC.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of one Smt.

Item No. 194

Providing and fixing G.I. Crimped Jali made from framing of 40 x 40 x 5 mm M.S. Angle & 25 x 25 mm MS Pipe with Inner side 20 x 20mm G.I. Crimped fitted on wall with Khilla & one coat of primer & Two coats of oil painting etc. Complete.

The relevant specification for this item shall be followed as per item description and instruction given by Engineer in charge.

Mode of Measurement and payment

The item shall be measure and rate shall be for a unit of one Smt.

Item No. 195

Providing and Fixing Chain Link Fencing using 25 x 25mm Sq. Pipe with Chain Link Jali with necessary bolts & Washer & Oil Paint etc. Completed.

Materials

Structural Steel: Shall Conform M22 page no-14 in General Technical Specification Booklet.

Fixtures and Fastenings: Shall Conform M43 page no-19 in General Technical Specification Booklet.

Paints: Shall Conform M44 page no-21 in General Technical Specification Booklet.

Barbed Wire: Shall Conform M78 page no-28 in General Technical Specification Booklet.

Square Pipe Framework

- Mild steel square hollow section of size 25 mm × 25 mm.
- Uniform thickness as approved.
- Conforming to IS 4923.
- Free from bends, cracks and rust.

Chain Link Jali

- Galvanized iron/mild steel chain link mesh of approved gauge and aperture size.
- Uniform weaving and properly tensioned.
- Conforming to IS 2721 where applicable.

Bolts and Washers

- Mild steel bolts, nuts and washers of approved quality.
- Conforming to relevant IS standards.
- Properly galvanized or painted against corrosion.

Oil Paint System

- Metal primer and oil paint of approved make and shade.
- Conforming to relevant IS standards.

Workmanship

Workmanship shall comply with approved fabrication practice and relevant IS codes.

Fabrication of Framework

- Square pipe members shall be cut accurately to required dimensions.
- Welding shall be continuous, smooth and properly finished.
- Frame shall be rigid and true to line and level.
- Sharp edges and welding burrs shall be removed.

Surface Preparation

- Steel surface shall be cleaned thoroughly from rust, oil, dirt and welding scales.
- Surface shall be properly prepared before painting.

Fixing of Chain Link Jali

- Chain link mesh shall be stretched properly without sagging.
- Mesh shall be securely fixed to framework using ties/clamps/fasteners.
- Joints in mesh shall be neat and properly lapped.

Painting

- One coat of approved metal primer shall be applied before painting.
- Required coats of oil paint shall be applied uniformly.
- Final finish shall be smooth and free from brush marks or paint runs.

Installation

- Fencing panels shall be fixed firmly in position.
- Proper alignment, plumb and level shall be maintained.
- Completed fencing shall be rigid and stable.

Mode of Measurement and payment

Chain link fencing shall be measured and payment for a unit of Square Metre (Sq.m)

Item No. 196

Repairing & providing & fixing concentrino razor blade 12G wire loop of 750 mm dia. on top of compound wall with M.S. angle & G.I. Barbed wire as per instruction of Engineer including fixing with binding wire etc. as directed by Engineer in charge.

Chainlink jali shall be apporved by E.I.C. The work shall be carried out as directed by E.I.C. It shall be fitted in line & level with G.I. wires.

Mode of Measurement and payment

The item shall be measure and rate shall be as per unit of One Smt.

Item No. 197

Providing and Fixing 75mm repicon walls fixing with 76mm floor channels at bottom & 76 mm GI ceiling channels at top with line and Level etc. completed.

Materials

Structural Steel: Shall Conform M22 page no-14 in General Technical Specification Booklet.

Fixtures and Fastenings: Shall Conform M43 page no-19 in General Technical Specification Booklet.

RePicon Wall Panels

- 75 mm thick lightweight wall partition panels of approved make.
- Panels shall be dimensionally stable, crack resistant and suitable for interior partition applications.
- Surface shall be smooth and ready for finishing.

Floor Channel

- 76 mm wide mild steel/G.I. floor channel of approved thickness.
- Properly galvanized and free from corrosion.
- Conforming to IS 277 where applicable.

Ceiling Channel

- 76 mm wide G.I. ceiling channel of approved thickness.
- Straight, rigid and corrosion resistant.

Fasteners and Anchors

- Self tapping screws, anchor fasteners and fixing accessories of approved quality.
- Corrosion resistant type.

Jointing Material

- Approved joint filler/compound and tape where required.

Workmanship

Workmanship shall comply with approved partition installation practice and relevant IS codes.

Preparation and Layout

- Partition layout shall be marked accurately on floor and ceiling.
- Levels and alignment shall be checked before installation.
- Existing surfaces shall be cleaned properly.

Fixing of Channels

- 76 mm floor channels shall be fixed firmly to floor using approved anchor fasteners at suitable spacing.
- 76 mm G.I. ceiling channels shall be fixed true to line and level.
- Channels shall be aligned vertically with each other.

Installation of RePicon Panels

- Panels shall be cut accurately to required dimensions.
- Panels shall be fixed properly within floor and ceiling channels.
- Vertical alignment and plumb shall be maintained throughout.
- Joints between panels shall be tight and properly finished.

Joint Treatment

- Panel joints shall be filled with approved jointing compound.
- Surface shall be smooth and flush after finishing.
- Cracks or uneven joints shall not be permitted.

Finishing

- Completed partition shall be rigid, level and stable.
- Surface shall be clean and free from damage, cracks or waviness.
- All exposed edges shall be neatly finished.

Mode of Measurement and payment

RePicon wall partition shall be measured and payment for a unit of Square Metre (Sq.m)

Item No. 198

Providing and Fixing 50 mm Jems Panneling with using 19 mm plywood & 12mm Plywood & on top 1.0 mm Lamination Horizontal / Walnut / Oak / Season Wood Series etc. Complete. work shall be as directed by architect concern Engineer in Charge.

Material & Workmanship:• The specification of item shall be followed as per item description and manufacturers pecification as per instruction given by EIC/Architect.

Mode of Measurement and payment:

Measurement and payment shall be done as per Smt. basis.

Item No. 199

Providing and fixing toilet cubical with 11 mm compact both side laminates board with vertical alluminium S.S. finish 12 mm Big U type heavy section alluminium S.S. finish 12 mm top rail, H Door edge, with necessary fitting S.S. matt door lock, clothes hook, S.S. door support leg, S.S. matt door nop etc. comp.

Materials

Aluminium Doors, Windows, Hold Fast : Shall Conform M31 page no-17 in General Technical Specification Booklet.

Fixtures and Fastenings: Shall Conform M43 page no-19 in General Technical Specification Booklet.

Compact Laminate Board

- 11 mm thick compact laminate board with decorative laminate finish on both sides.
- High pressure compact laminate with moisture resistant and anti-bacterial properties.
- Scratch resistant and impact resistant.
- Shade and texture as approved by Architect/Engineer-in-Charge.

Aluminium Profiles

- Heavy duty aluminium sections with stainless steel finish.
- Vertical profile: 12 mm Big U type section.
- Top rail and H-edge profile of approved size and design.
- Conforming to IS 733 and IS 1285.

Stainless Steel Hardware

- SS matt finish door lock, clothes hook, support leg, hinges and knob.
- Stainless steel grade SS 304.
- Corrosion resistant and heavy duty type.

Fasteners

- Stainless steel screws, anchors and fixing accessories of approved quality.

Workmanship

Workmanship shall comply with approved partition installation practice and relevant IS codes.

Preparation and Layout

- Toilet cubicle layout shall be marked accurately as per approved drawings.
- Levels, alignment and dimensions shall be checked before installation.

Fabrication of Panels

- Compact laminate boards shall be machine cut to required sizes.
- Edges shall be smooth and properly finished.
- Panels shall be free from warping, cracks or surface defects.

Fixing of Aluminium Profiles

- Aluminium profiles shall be fixed true to line and level.
- Vertical U sections and top rails shall be rigidly fixed.
- All joints shall be neat and secure.

Installation of Panels and Doors

- Panels and shutters shall be fixed properly with uniform gaps.
- Door alignment shall be accurate.
- Doors shall open and close smoothly without obstruction.

Hardware Fixing

- SS hardware shall be fixed firmly using approved fasteners.
- Door lock, knob, clothes hook and support leg shall be properly aligned.
- Hardware finish shall be smooth and free from scratches.

Finishing

- Completed cubicle shall be rigid and stable.
- Surfaces shall be clean and free from dents, scratches or adhesive marks.
- All exposed edges and joints shall be neatly finished.

Mode of Measurement and payment

Toilet cubicle shall be measured and payment for a unit of Square Metre (Sq.m).

Item No. 200

Providing and Fixing Partition made from 50x25 mm aluminium pipe framing and 8 mm plywood with top face finished with 3.6 mm MDF as per approved by E.I.C . Etc. complete.

The relevant specification for this item shall be followed as per item description and instruction given by Engineer in charge.

Mode of Measurement and payment

The item shall be measure and rate shall be for a unit of one Smt.

Item No. 201

Providing and fixing Slim Aluminium Partition with using 45 x 16mm Slim Section and 8mm thick toughen glass With Necessary clip connector and necessary accessories with jointing with silicon etc. complete.

The relevant specification for this item shall be followed as per item description and instruction given by Engineer in charge.

Mode of Measurement and payment

The item shall be measure and rate shall be for a unit of one Smt.

Item No. 202

Providing and fixing Slim 8mm thick tuffan glass Door with 45 x 16mm Slim Section & Floor Spring of 80 to 100 Kg. Capacity, top and bottom patch, S.S. Handle 10" and wall to glass lock and necessary accessories with jointing with silicon etc. complete.

8 mm thick tuffan glass door shall be approved by engineer in charge. It shall be fitted with proper arrangement in line & level. It shall be free from any bubbles it shall be fitted line & level. The work is carried out by directed by engineer in charge necessary top-bottom patch, heavy floor spring, H handle 32 x 450 mm, Glass to Glass lock and necessary accessories shall be done and it shall be of inox, ozone or hardwyn company. The door shall be move on floor spring with easy movement

Mode of Measurement and payment

The item shall be measure and rate shall be unit One Sq.Mt.

Item No. 203

Applying Deco Paint/PU Paint (two coats) with approved brand and manufacture on undecorated wall surface to give an even shade including throughly brushing the surface free from mortar droppings and other foreign matter and sand papered smooth.

The relevant specification for this item shall be followed as per item description and instruction given by Engineer in charge.

Mode of Measurement and payment

The item shall be measure and rate shall be for a unit of one Smt.

Item No. 204

Providing and Fixing Teakwood border patti of size 3" x 1" Ghana Patti with machine spray melamine polish with all labour and materials etc. completed.

The relevant specification for this item shall be followed as per item description and instruction given by Engineer in charge.

Mode of Measurement and payment

The item shall be measure and rate shall be for a unit of one Rmt.

Item No 205 Providing and fixing C.P. Brass Jaquar / Somany telephone shower with S.S. stand, spout and shower tube etc. complete.

For detail specification refer item No.-23.141(A)/P.149 of G.T.S. booklet. C.P. Brass Jaquar / Somany telephone shower with S.S. stand, spout and shower tube shall be used.

Mode of Measurement and Payment:

The item shall be measure and rate shall be unit of One Number.

Item No 206 Providing and fixing Jaquar / Somany C.P. Brass Two way bib cock of heavy series with C.P. brass Nipple & brass elbow etc. complete. Code : FLR 5041

For detail specification refer item No.-23.92(B)/P.151 of G.T.S. booklet. Two C.P. Brass bib cock shall be fitted of approved brand & quality.

Item No 207 Providing and fixing Jaquar / Hindware continental series towel rack 600 mm long with lower hangers code AKP 35781PS with S.S. screw etc. complete.

Jaquar / Hindware continental series towel rack 600 mm long with lower hangers shall be used approved brand & quality. It shall be fitted with S.S. screws in line & Level. The work carried out as by directed engineer in charge.

Mode of Measurement and Payment:

The item shall be measure and rate shall be as per unit of One Number.

Item No 208 Providing and fixing Jaquar /Essco continental series Kitchen Sink Cock with S.S. screw etc. complete.

The Jaquar/Essco continental series Kitchen Sink Cock shall be of approved by E.I.C. It shall be fitted in line & level. It shall be fitted as easy operation.

Mode of Measurement and Payment:

The item shall be measure and rate shall be as per unit of one No.

Item No 209 Providing and fixing P.V.C. L.L. tank with all necessary labour & fittings etc. complete.

For detail specification refer item No.-23.115A/P.147 of G.T.S. booklet. PVC L.L. tank shall be used instead of china L.L. tank.

Mode of Measurement and Payment:

The item shall be measure and rate shall be for a unit of One number.

Item No 210 Providing and fixing Zoloto or equivalent Gun metal check or non-return fullway wheel valve.(E) 40mm dia.

Material:

Zoloto Gun Metal Check or Non-Return Fullway Wheel Valve: Size - 40mm diameter.

Workmanship:

Preparation:

Ensure the workspace is clean and ready for installation.

Inspect the valve for any defects or damages before installation.

Identification of Installation Location:

Determine the appropriate location for installing the valve in the plumbing system.

Ensure the location allows for proper functioning and accessibility.

Mounting of Valve:

Shut off the water supply to the area where the valve will be installed.

Install the valve in the desired location, ensuring it is securely attached and properly aligned with the plumbing pipes.

Connection:

Connect the valve to the existing plumbing system using appropriate fittings and connectors.

Ensure all connections are tight and properly sealed to prevent leaks.

Testing:

Turn on the water supply and test the valve for proper functionality.

Verify that the valve effectively controls the flow of water in the desired direction.

Check for any leaks or irregularities and make adjustments as necessary.

Mode of measurement and payment:

Item shall be measure and Rate shall be paid for a unit of one Nos.

Signature of Contractor

Deputy Executive Engineer
Capital Project Sub Division No-6
Gandhinagar

Executive Engineer
Capital Project Division No-2
Gandhinagar