

Name of work :- Constructing Library Building @ Village:- BOGAJ. Taluka:- Dediapada. District:- Narmada.

ITEMWISE SPECIFICATIONS

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

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.4.0.0.[B] / P.29

ITEM No:- 2 Providing and Cement Cncrete 1:2:4 (1 Cement: 2 coarse sand:4graded StoneAggregate 20 mm Nominal Size) including cost of form work but Excluding cost of reinforcement for R.C.C. Work in foundation & Plinth

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.5.3.13 [A] / P. 40

ITEM No:- 3 Providing and laying cement concrete1:4:8 (1 cement:4 coarse sand:8 hand broken stone agreegate 40 mm nominal size) & curing complete excluding cost of formwork in foundation and plinth.

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.5.3.3 [A] / P. 38

ITEM No:- 4 Providing & laying ordinary cement concrete M.200 with curing etc. Complete including cost of form work but excluding cost of reinforcement for reinforced concrete work in Column Footing. & Mass Concrete.

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.5.8.2 [A] / P. 47

ITEM No:- 5 Providing & laying ordinary cement concrete 1:2:4 (1-Cement 2- coarse sand : 4- graded stone aggregates 20 mm nominal size) and finishing smooth with,curing etc. complete including the cost of formwork but excluding the cost of reinforcement for R.C.C work in (B) COLUMNS: (i) Having cross-sectional area 0.05 to 0.08 Sq.M

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.5.4.1 [D] / P. 43 Except that for Ordinary Concrete instead of Controlled Cement Concrete.

Item No.6 Brick work using Common Burnt Clay building bricks having crushing Strength not less than 35 kg. / sq.cm. in foundation and plinth in cement mortar 1:6(1 cement : 6 fine sand). Conventional.

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.6.13[A]P.51 except that Conventional bricks shall be used instead of clay bricks.

ITEM No:- 7 Providing & laying ordinary cement concrete 1:2:4 (1-Cement 2- Coarse sand : 4- graded stone aggregates 20 mm nominal size) and finishing smooth with,curing etc. complete including the cost of formwork but excluding the cost of reinforcement for R.C.C work in (A) BEAMS :(i) Having cross-sectional area 0.05 to 0.08 Sq.M

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.5.00.6 [A] / P.47 + 9.1[G] [i] / P.56 except para 2.2 & 2.2 respectively. Except that for Ordinary Concrete instead of Controlled Cement Concrete.for Cross Section area more than 0.05 sqmt & upto .08 Sq.M.The consolidated item shall be measured & paid on **Cum. basis**.

Item No.08 Filling available excavated earth(excluding rock) in trenches,plinth,sides of foundation etc. in layers not exceeding 20 cm. In depth consolidating each deposited layer by ramming and watering.

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.4.12 / P.35.

Item No.09 Filling in foundation & plinth with Murrum or selected soil in layers of 20 cm. thickness including watering, ramming and consolidating etc. complete.

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.4..0.4 / P.35.

Item No:- 10 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 in (A) Foundation and Plinth.Excl.cost of form work but excluding cost of reinforcement for reinforced concrete work in in Wall Caps / Coping

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.5.3.13[A]/P.47 + 9.1[G][i]/P.56 except para 2.2 & 2.2 respectively. Except that for Ordinary Concrete instead of Controlled Cemethn Concrete. The consolidated item shall be measured & paid **on Cum. basis**.

ITEM No: -11 Brick work using common burnt clay building bricks having crushing strength not less than 35 kg. / sq.cm. in super structure above plinth level from floor two level in cement mortar 1:6(1 cement : 6 fine sand). Conventional.

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.6.13[A] + 6.19[B] P.51 except that Conventional bricks shall be used instead of clay bricks.

ITEM No:- 12 Providing and laying ordinary cement concrete 1:2:4 (1- Cement 2- coarse sand : 4- graded stone aggregates 20 mm nominal size) for R.C.C lintel including finishing smooth with, curing etc.comp. incl.the cost of formwork but excluding the cost of reinforcement.

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.5.00.5 /P.48 + 9.1[G][i]/P.56 except para 2.2 & 2.2 respectively. The consolidated item shall be measured & paid **on Cum. basis**.

ITEM No:- 13 Providing & laying cement concrete 1:2:4 (1-Cement: 2- Coarse sand : 4- graded stone aggregates 20 mm nominal size) for reinforced concrete Chhajjas not exceed-ing 10cm. thickness upto floor two level incl. finishing the exposed surfaces with cement mortar 1:3 (1-cement, 3 Fine sand) to give a smooth and even surface centering and formwork and curing complete excluding cost of reinforcement.

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.5.4.4 / P.44 + 9.1[G][i]/P.56 except para 2.2 & 2.2 respectively. The consolidated item shall be measured & paid **on Cum. basis.**

ITEM No:14 Providing and laying ordinary cement concrete 1:2:4 (1- Cement 2- coarse sand : 4- graded stone aggregates 20 mm nominal size) exposed work with curing etc. complete including the cost of formwork but excluding the cost of reinforcement for R.C.C work in (iii) Slabs having more than 10 cm and upto 13 cm. thickness

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No.5.00.1[III]/P.47 + 9.1[G][i]/P.56 except para 2.2 & 2.2 respectively. Except that Ordinary Concrete shall be used instead of Controlled Cement Concrete. The consolidated item shall be measured & paid **on Cum. basis.**

ITEM No:- 15 Providing T.M.T. FE 500D bar reinforcement for R.C.C. work including bending, binding and placing in position complete for all floor level.

1.0. GENERAL

This work shall consist of furnishing and placing coated, or uncoated or high strength deformed reinforcement, bars (intentioned) of the shape and dimensions shown on the drawings and conforming to these specifications or as approved by the Engineer in charge.

2.0. MATERIAL

2.1. TMT Bars

Reinforcements may be either T.M.T. tensile steel, [confirms to IS 1786-2008 bars](#). They may be uncoated or coated with epoxy or with approved protective coatings.

2.2. T.M.T. bars reinforcement for R.C.C. work shall conform IS 432 (Part II) 1982 (Reaffirmed 1995) and shall be of tested quality. It shall also comply with relevant part of IS 456-2000.

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

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

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

3.0. Pitch

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

4.0. Binding wire

4.1. Mild steel binding wire shall be of 1.63 mm or 1.22 mm (16 to 18 gauge diameter and shall conform IS 280-2006.

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

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

5.0. PROTECTION OF REINFORCEMENT

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

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

6.0. Workmanship

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

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

7.0. BENDING OF REINFORCEMENT

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

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

7.3. Bars shall be bent cold to the specified shape and dimensions or directed by the Engineer using a proper bar bender operated by hand power to obtain the correct radius of bends and shape.

Bars shall not be bent or straightened in a manner that will damage parent material or the coating bars bent during transport or handling shall, be straightened before being used on work and shall not be heated to facilitate straightening.

8.0. PLACING OF REINFORCEMENT

- 8.1. The reinforcement cage should generally be fabricated in the yard at ground level, and then shifted and placed in position. The reinforcement shall be placed strictly, in accordance with the drawings and shall be assembled in position, only when structure is otherwise ready for placing of concrete. Prolonged time gap, between assembling of reinforcements and casting of concrete, which may result in rust formation on the surface, shall not be permitted.
- 8.2. Reinforcement bars shall be placed accurately in position as shown on the drawings. The bars, crossing one another shall be tied together at every intersection with binding wire (annealed), conforming to IS:280 to make the skeleton of the reinforcement rigid such that the reinforcement does not get displaced during placing of concrete, or any other operation. The diameter of binding wire shall not be less than 1 mm.
- 8.3. Bars shall be kept in position usually by the following methods:
In case of beam and slab construction, industrially produced polymer cover blocks of thickness equal to the specified cover shall be placed between the bars and formwork subject to Satisfactory evidence that the polymer composition is not harmful to concrete and reinforcement. Cover blocks made of concrete may be permitted by the Engineer, provided they have the same strength and specification as those of the member.
- 8.4. In case of dowels for Columns and walls the vertical reinforcement shall be kept in position by means of timber templates with slots in them accurately, or with cover blocks tied to the reinforcement timber templates shall be removed after the concreting has progressed up to a level just below their location.
- 8.5. Layers of reinforcements shall be separated by spacer bars at approximately One meter intervals. The minimum diameter of spacer bars shall be 12 mm or: equal to maximum size of main reinforcement or maximum size of coarse aggregate, whichever is greater. Horizontal reinforcement shall not be, allowed to sag between supports.
- 8.6. Necessary stays, blocks, metal chairs, spacers, metal hangers supporting wires etc, or other subsidiary, reinforcement shall be provided to fix the reinforcements firmly in its correct position.
- 8.7. Use of pebbles, broken stone, metal pipe, brick, mortar or wooden blocks etc as devices for positioning reinforcement shall not be permitted.
- 8.8. Bars coated with epoxy or any other approved protective coating shall be placed on supports that do not damage the coating. Supports shall be installed in a manner such that planes of weakness are not created in hardened concrete. The coated reinforcing steel shall be held in place by use of plastic or plastic coated binding wires especially manufactured for the purpose.
- 8.9. Placing and fixing of reinforcement shall be inspected and approved by the Engineer before concrete is deposited.

9.0. Lapping

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

10.0. Welding

- 10.1** Splicing by welding of reinforcement will be permitted only if detailed on the drawing or approved by the Engineer. Weld shall develop an ultimate strength equal to or greater than that of the bars connected.
- 10.2.** While welding may be permitted for T.M.T. reinforcing bars conforming to IS:432, welding of deformed bars conforming to IS: 1786 shall in general be prohibited. Welding may be permitted in case of bars of other than S 240 grade including special. Welding grade of S 415 grade bars conforming to IS:1786, for which necessary chemical analysis has been secured and the carbon equivalent (CE) calculated from the chemical composition using the formula:

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

is 0.4 or less.

- 10.3.** The method of welding shall conform to IS:2751 and IS:9417 and to any supplemental specifications to the satisfaction of the Engineer
- 10.4.** Bars shall be bent cold to the specified shape and dimensions or as directed by Engineer in charge using the proper bender tool, operated by hand or power to attain proper radius of bends. Bars shall not be 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
- 10.5.** Unless otherwise specified a 'U' type hook at the end of each bar shall invariably be provided to main reinforcement. The radius of the 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
- 10.6.** All reinforcement bars shall be accurately placed in exact position shown on the drawings and shall be securely held in position during placing of concrete by annealed binding wire not less than 1 mm in size and by using say blocks or metal chairs spacers, metal hangers, supporting wires or other approved devices at sufficiently close intervals, Bars shall not be allowed to sag between supports not displaced during concreting or any other operations of the work All devices used for positioning shall be of not corrodible material wooden and metal supports shall not extended to the surface of the concrete, except where shown in drawings. Placing bars on layers of freshly laid concrete as the work progresses for adjusting bar spacing shall not be allowed. Pieces of broken stone or brick and wooden blocs shall not be used Layers of bars shall be separated by spacer bars pre-cast mortar blocks or other approved devices. Reinforcement after bending placed in position shall be maintained in a clean condition until completely embedded in concrete, Special care shall be exercised to prevent any displacement of reinforcement in concrete already placed. To prevent reinforcement form corrosion, concrete cover shall be provided as indicated on drawings. All bars protruding from concrete and to which other bars are to be sliced and which are likely to be exposed for a period exceeding 10 days shall be protected by a thick coat of neat cement grout
- 10.7.** Bars crossing each other where required shall be secured by binding wire (annealed) of size not less than 1 mm in such a manner that they do not slip over at the time of fixing and concreting As far possible bars of full length shall be used in case this is not possible, overlapping of bars shall be done as directed by the Engineer in charge When practicable overlapping bars shall not touch each other, but be kept apart by 25 mm Where no feasible overlapping bars shall be bound with annealed wires not less than 1 mm thick twisted tight The overlaps shall be staggered for different bars and located at points along the span where neither sheer not bending moments is maximum.

- 10.8.** Whenever indicated on drawing or desired the Engineer in charge bars shall be jointed by coupling which shall have a cross section sufficient to transmit the full stresses of bars The end of the bars that are jointed by coupling shall be upset for sufficient length so that the effective cross section at the base of threads is not less than the normal cross section of the bar. Threads shall be standards threads Steel for coupling shall conform to IS 226.
- 10.9.** When permitted or specified on the drawings joints of reinforcement bars shall butt-welded so as to transmit their full stresses Welded joints shall preferably be located at points when steel will not be subject to more than 75 percent of the maximum permissible stresses and welds so staggered that at any one section not more than 20 percent of the rods are welded Only electric are welding using a process which excludes air form the molten metal and conforms to any or other special provisions for the work shall be accepted Suitable means shall be provided for holding bars securely in position during welding It shall be ensured that no voids are left in welding and when welding is done in two or three stages previous surface shall be cleaned properly Ends of bars shall be cleaned of all loose scale rust stages paint and other foreign matter before welding Only competent welders shall be employed on the work. The M.S. electrodes used for welding shall conform IS 814 Welded pieces of reinforcement shall be tested. Specimen shall be taken form the actual site and their number shall frequency to test shall be as directed by the Engineer in charge.

11.0 MODE OF MEASUREMENTS & PAYMENT

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

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

- 11.1.** Excess consumption over 5% will be charged at penal rate.
- 11.2.** 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.
- 11.3.** 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.

- 11.4.** The rate shall be for a unit of **One K.G.**

ITEM No:-16 Providing and fixing Flush Door Shutters ,Solid Core construction with frame of first class hard wood with cross board and fixed with 1 mm thick laminated sheet both side of shutter with Aluminum Section Frame of jindal 20047 fram section size 63.50X38.10X1.5mm thick wt.0.942kg/mt with shutter Flush door shuuter fixed with required Fixtures & Fastenning as per Approved by Engineer - in - Charge 38 mm thick total Thickness of Shutter etc. Complete.

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No. 10.30 / P.72 except that the Section of Alluminium Pipe Shall be as per Detail drawing of Doors & instructed by the Engineer – in – Charge. The consolidated item shall be measured & paid on Measured with **Sqmt. basis.**

ITEM No:- 17 Providing and fixing extruded aluminum window having extruded aluminum Colour Powder Coated section frame main outer size 127mm x 38.10 mm x1.35mm(of Jindal Section no:2443,@ Wt.1.384 Kg/mt), horizontal Four track member size 122.20mm x 31.75mm x 1.10mm (of Jindal Section no:8787,@ Wt. 1.205 Kg/mt), vertical member of size 122.20 mm x 31.75mm x 1.50mm (of Jindal Section no:8935,@ Wt. 1.398 Kg/mt) with sliding shutters of horizontal member size 40mm x 18mm x 1.29mm (of Jindal Section no:8949 @ wt.of 0.456Kg/mt),vertical member of size 40mm x18mm x 1.29mm (of Jindal Section no: 8947@ wt.of 0.456Kg/mt/ Section 8948,@ Wt. 0.457 Kg/ mt) with5 mm thick transparent bronze colour tinted float glass with powder coated aluminum fittings,fixtures and transparent silicon sealant glass fixing to frame as per details etc comp. for window.

The item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It.No.M- 31 / P. No. 17 . The size of frame shall be 127 MM x 38.10 x1.35 MM size of Alluminium section. and the thickness of shutter shall be 38 mm instead of 35 mm. . The Window Shutter shall be as per the Size Specified in Item Description and glazed with 5 mm thick transparent bronze colour tinted float glass with transparent silicon Gasket and section of frame shall not be less than1.094 kg / Rmt .The consolidated item shall be measured and paid on Sq.m. basis.

ITEM No:- 18 Providing and laying Green (Or Specified By Engineer - in - Charge) Marble Colla 25 cm in Width for Doors Windows over 20mm (average) base of cement mortar 1:6 (a-cement : 6 coarse sand) laid and jointed with gray cement slurry including Half Round Moulding to Both Side Edges, rubbing and polishing complete.

General

This work shall consist of providing and laying machine cut, free edges, machine polished Marble stone slab 18mm thick (single piece not more than 150 cm) for Windows sill and jambs cladding as per design of the shape and dimensions shown on the drawings and conforming to these specifications or as approved by the Engineer in charge.

1.0 MATERIAL

Water shall confirm to M-1. Cement Mortar shall confirm to M-11. Marble slab shall confirm to M-51. Sand shall conform to M-6.

1.0 MARBLE SLAB

1.1. Marble slab shall be hard even sound, and regular in shape and generally uniform in colour. The colour of the stone shall generally be green. Only approved coloured shall not be allowed for use. They shall be without any soft veins cranks of flaws Marble slab shall be hard, even, and regular in shape and it should without fault.

1.2. The size of the Marble slab to be used for flooring shall be of size 600 mm x 600 mm size or as approved by Engineer in charge or Architect. However smaller sizes will be allowed to be used to the extent of maintaining required pattern. Thickness shall be as specified. For Windows Sill and jambs cladding the Marble slab shall be in single piece.

1.3. Tolerance of minus 30 mm. on accounts of chisel dressing of edges shall be permitted for length as well as breadth. Tolerance in thickness shall be ± 1 mm.

1.4. The edges of Marble slab shall be truly chiseled and table rubbed with coarse sand before paving. All angles and edges of the stones of shall be true, square and free chipping and surface shall be true and plain.

1.5. The Marble slab shall have machine cut free edges with half round pipe moulding mirror polished surface. When brought on site. The stones to be used for flooring dedo, skirting, sink, veneering, sills, steps, etc.

2.0 WORKMANSHIP

2.1 Marble slab shall be 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) or Lime Mortar 1:1.5 (1 lime : 1.5 lime putty by volume).

2.2 Marble slab shall be laid evenly as per detailed drawing or as directed by Engineer in charge. Width, length and shape of stone shall be as per pattern shown in detailed drawing.

2.3. 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 require 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.

2.4. 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.

2.5. 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.

- 2.6. Curing shall be started as soon as the mortar used for finished has hardened sufficiently no 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.
- 2.7. 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.
- 2.8. Joints of Marble slab flooring shall be through and continuous throughout the building as directed by Engineer in charge.
- 2.9. Joints shall be filled with a stiff mixture of gray cement slurry.
- 2.10. The Marble slab flooring work shall be finished by rubbing and mirror polishing after the work of flooring is set properly.

3.0 **MODE OF MEASUREMENT & PAYMENT :**

- 3.1. The unit rate **Marble stone slab** 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 & placing stones in position, finishing, curing etc. flooring all over the length of **Windows Sill and jambs cladding** etc. 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 includes cost of mirror polishing of flooring and dado work.
- 3.2 The rate shall include the cost of all materials and labours involved in all the operations described above. The **Marble stone slab** flooring shall be measured in Square meter correct to 2 places of decimal. Length and breadth shall be measured to correct to a centimeter and between the finished the finished face of the skirting, dado or wall plaster and no deduction shall be made nor extra paid for any opening in floors or areas up to 0.1 square meter.
- 3.3 The rate shall be for a unit of **one Square meter**.

ITEM No:- 19 Applying general insecticide pest control treatment to floors cupboards etc including labour material etc. complete.

The item shall be executed as per the relevant specifications of General Technical Specifications for Building works Booklet It. No. 22.00.9/ P.157 The consolidated item shall be measured & paid on Measured with **Sqmt. basis**.

ITEM No:- 20 Providing 15 mm thick cement plaster in double coat on fair side of brick/ concrete wall for interior plastering up to floor two level finished even and smooth Mala plaster in Cement mortar 1:3 (1 cement: 3 sand).

The item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It. No.17.58[I]/P.119 + 17.69/P.121 + 17.91/P.122. The Plaster work shall be carried out in C.M. 1:3 of 15 mm thick.

ITEM NO:- 21 Providing 10 mm thick MALA cement plaster in Single coat on brick/concrete wall for interior plastering upto floor two level and finished even and smooth in (i) Cement mortar 1:3 (1 cement : 3 sand) finishing with a floating coat of neat cement

The item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It. No.17.58[I]/P.119 + 17.69/P.121 + 17.91/P.122. The work shall be done on Wall. The work shall be carried out up to floor two level.

Item No:- 22 Providing 20 mm thick Gutka finished sand faced cement plaster on walls up to height 10 meters above ground level 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 item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It. No.17.95/P.122.

ITEM NO :- 23 P & L 24" x 24" vitrified 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 including dismantling of existing flooring and jointed with color cement slurry including finished with flush pointing & cleaning the surface etc. complete.

The item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It. No.14.29/P.96 except that 8 mm thick Vitrified coloured Granite tiles of approved 60 cm x 60 cm size shall be used instead of 6 mm thick white glazed tiles.

ITEM No:- 24 Providing & laying Marble Granite tiles 8 mm to 10 mm Thick in skirting risers of steps and dado on 10 mm. Thick cement plaster 1:3 (1 cement : 3 coarse sand) pointing in white cement and jointed with white cement slurry.

The item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It. No.14.44 [A] /P.99 Polished Kotah Stone of approved 60 cm x 60 cm size shall be used.

ITEM NO:25 Wall painting (two coats) with plastic emulsion paint of approved brand and manufacture on undecorated wall surfaces to give an even shade including thoroughly brushing the surface free from mortar droppings and other foreign matter and sand papered smooth.

The item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It. No.18.57/P.136 + 18.59/P.136.

ITEM No: 26 Ceilling Painting (three coats) with plastic emulsion paint of approved brand and manufacture on undeco-rated 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 item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It. No.18.57/P.136 + 18.59+18.59 /P.137

ITEM NO:- 27 Finishing wall with weather proof cement Paint on wall Surface (twocoat) to give even Approoved brand and manufacture of required shade after throughly brushing the surface to remove all dirt,dust,and remains of loose Material

The item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It. No.18.51/P.135 + 18.59/P.136.the Exterior paint shall be of Apex Ultima.

ITEM No:- 28 Providing and fixing to wall ceiling and floor 6.0 Kg. F/Cm2 working pressure poluthene pipes of the 110 mm outside Dia. Low densidy, complete with special falnge compre-ssion type fittings, wall clipsetc. including making good the wall ceiling and floor.

The item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It. No.23.8 / P.162 Except that the Dia. of Pipe shall be fixed of 110 mm dia.

ITEM No:- 29 Point wiring for Light / Bell with 2-1.5 sq.mm & earthwire of 1.5 sq.mm (green) both are of ISI marked FR PVC insulated multistrand copper wires, in existing pipe duly erected complete with 6A Modular type switch / bell push & accessories and earth continuity of following type, erected on PVC / Metallic box covered with appropriate front plate modules erected concealed in wall / ceiling. with casing caping double lock type. Cat. II

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost **per No. Basis.**

ITEM No:- 30 Point wiring for FAN with 2-1.5 sq.mm & earthwire of 1.5 sq.mm (green) both are of .ISI marked FR PVC insulated multi-strand copper wires, in existing pipe duly erected complete with 6A Modular type switch and hum free EME 5/6 step type electronic fan regulator with separately mounted & accessories with earth continuity of following type erected on PVC/Metallicbox covered with appropriate front plate modules erectedconcealed wall/ceiling rose as directed.

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost **per No. Basis.**

ITEM No:- 31 Point wiring forIndividual Plug with 2-1.5 sq.mm& earthwire of 1.5 sq.mm (green) both are of ISI marked FRPVC insula-ted multistrand copper wires, in existing pipe duly erected comp. with 6A Modular type switch & 6A 5pin Plug erected on PVC / Metallic box covered with aproprite front plate modules erected concealed in wall/ceiling with following type of accessories. for 6A Plug with 2-1.5 sqm cu. wire. Pvc CAsing Caping double lock type.- Cat. II (A) Seperate Point

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost **per No. Basis.**

ITEM No:- 32 Point wiring for Individual Plug with 2-1.5 sq.mm & earthwire of 1.5 sq.mm (green) both are of ISI marked FR PVC insulated multistrand copper wires, in existing pipe duly erected complete with 6A Modular type switch & 6A 5pin Plug erected on PVC / Metallic box covered with appropriate front plate modules erected concealed in wall / ceiling with following type of accessories. for 16A Plug with 2-4 sqm cu. wire. Pvc CAsing Caping double lock type.- Cat. II

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost **per No. Basis.**

ITEM No:- 33 Point wiring for looped PLUG with tissino type single pole ISI marked 6 A. Switch and 6A Socket erected with necessary connections erected on polished wooden block / Metal / PVC Box covered with 3 mm thick laminated sheet for open / concealed wiring.

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost **per No. Basis.**

ITEMNo:- 34 Supplying & erecting oved make 1x36./40 watt sleek batten type fluorescent fitting made of anodised Aluminium reflector. Complete with HF Electronic ballast assembly housed in engineering plastic covers with tube holders, erected with necessary lead wire & hardware materials and adopter if required.Cat – III.

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost per No. Basis

ITEM No:-35 Approved make Ceiling Fan with Condenser 230 volt A.C.50 Cys.1200 mm Sweep complete having 3blades alluminium body & blade sets having ornamental design shanks, canopy & 30 cms. down rod erected with 24/0.2 flae 3 core flexible wire with earthing. + add. 80.00 Rs Extra for Reguator

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost per No. Basis

ITEM No:- 36 Providing Fuse Unit of kit kat pattern porcellin cut out 10A or 16A. erected on polished wooden block.

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost per No. Basis

ITEM No:- 37 Supplying and erecting led lamps with following wattage capacity of 220 to 0 voltage, minimum 15000 burning hours life, 500 V in built-surge protection, Poly carbonate diffuser, mounting suitable for E14 / E27 / B22 lamp holders, pf >= 0.5 (A) LED Lamps integral Type, With PC diffusar suitable Lamp holder. 5 to 8 Watts

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost per No. Basis

ITEM No:- 38 Supplying and erecting led lamps with following wattage capacity of 220 to 240 voltage, minimum 15000 burning hours life, 500 V in built-surge protection, Poly carbonate diffuser, mounting suitable for E14 / E27 / B22 lamp holders, pf >= 0.5 (A) LED Lamps integral Type, With PC diffuser suitable Lamp holder.

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost per No. Basis

ITEM No:- 39 Mains with 1.1 KV gradeFR PVC insulated ISI marked stranded Copper conductor wire in existing pipe erected with 1.5 sq. mm copper conductor FR PVC insulated stranded wire of green colour for earth continuity of following size

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost per **Rmt** Basis

ITEM No:- 40 Approved make MEM type Double pole iron clad switch & fuse 240 / 250 V. 15 / 16 A. conforming to I.S.S. erected on polished wooden block. Cat. II

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost per No. Basis

ITEM NO:-41 Cast iron plate size 30 x 30 x 0.35 cms.Buried in specially prepared 2.50 mtr. Deep earth pit complete with necessary G.I. Strip in G.I. Pipe 2 mtr long with coupling and G.I. Plug for earthing of switchgear conduit run or power plug. etc.complete.

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost per No. Basis

ITEM No:- 42 Supplying and erecting standard or equivalent make 25Amp. 10 Ka. Double pole MCB (G) series curve with metal Top company fabric-ated powder coat & sheet enclosure erected suitable wooden base with connection. Cat. III

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost per No. Basis

ITEM No:- 43 Pipe type earthing having 15 cms. long & 2.50cms. Dia. Galvanised iron pipe with coupling and buch buried in speciallyprepared earth pit. Complete. Withnecessary 8swg. Earth wire incl. Using salt. And charcol / cock as required for pipr type earthing.

The work shall be carried out as Per the General Technical Specification of R&B Deptt. Electrical Division Booklet – Separately Attached. The Unit For Total Work done shall be paid as Per Unit Cost per No. Basis

ITEM NO:-44 P & L water China Mosaic type Water proofing treatment on terrace including applying neat slury cement 2.75 kg / sm of cement with water proofing compound after cleaning the surface (B) laying cement concrete using brick bat 25 to 100 mm size with 50% of cement mortar 1:5 to required slope including rounding of junction of walls and slabs (C) after two day of proper curing applying a second coat of cement slurry (d) finishing the surface with 20 mm thick CM 1:4 and china mosiac tiling and finally finishing the surface with trovel with white cement slurry (e) after finishing the whole terrace shall be floded with weater for a period of two weekas.

The item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It. No.M-11/P.5 + M-3/P.3 + M-14/P.6 + M-6/P.4 + M-4/P.3 + M-55/P.18. The work shall be carried out in the following manner. First the terrace of the existing building slab and wall shall be washed with water and brushed to remove the dust and mortar drops over the terrace surface then cement slurry @ 2.75 kg / sq.m. shall be evenly applied. Then a layer of 20 mm thick cement mortar 1:5 [1 cement : 5 sand]mixed with water proofing compound of approved quality is laid over the slab. The cement use shall confirm to specification M-3 and sand shall be confirm to M-5. The cement and sand shall be mixed in proportion as specified i.e. 1:5. The proportion of cement will be on volume basis of 50 kg/bag. The bag of cement being equal to 0.042 cu.m. The mortar may be hand mixed or machine mixed as directed by Engineer in charge.

The water used shall be pure and free from salts. The mortar of cement and sand shall be mixed in specified proportion and well mixed i.e. at least 3 times or more till the homogeneous mix of uniform courses obtained. Mixing platform shall be so arrange that no deleterious and extraneous materials shall got mixed with mortar. The water shall be gradually added and throughout mixed to form a plastic mass of uniform colour. So that each particle of sand shall be completely covered with a thin film of wet cement. The water cement ratio shall be adopted as directed by the Engineer in charge. The mortar shall be used within 30 minutes.

Over a layer of 20 mm thick cement mortar the brick bats cement concrete using brick bats of 25 to 100 mm size shall be laid and the gaps shall be filled with cement mortar 1:5 mixed with approved quality of water proofing material. The brick bats aggregates shall be broken from well burnt or slightly over burnt and dense brick. It shall be homogeneous in textures, roughly cubical in shape, clean and free from dirt and any other foreign materials and shall be sufficiently soaked in water.

The brick bats shall be of 25 to 100 mm size. The brick shall be confirm to M-14 specification for building materials. Also sufficiently soaked brick bats materials shall only be used for water proofing over terrace. The cement slurry is to be spread @ 0.08 bag / sq.m. over brick bats. The water proofing materials of approved make and quality shall only be added to the cement mortar at the rate specified or as directed by the Engineer in charge. The necessary gradient and level shall be maintained during laying of brick bats. Over brick bats layer the cement mortar in 1:4 [1 cement : 4 sand] shall be laid with mixing of water proofing compound as directed and finished with a floating coat of neat cement in average 20 mm thickness and with white china mosaic tiles pieces. The white china mosaic tiles pieces shall be of approved quality and to be used after sufficiently soaked in water. The china mosaic tiles pieces shall be of size as directed by Engineer in charge and shall be fixed with cement slurry as directed and the joints shall be finally finished with white cement.

The entire work shall be well watered and cured for a sufficient period of time i.e. at least seven days to fourteen days.

CONDITIONS ;-

Deposit of 10 % of total amount shall be kept with the executing authority for a period of one year [At least passing of one monsoon after execution]. A guarantee bond shall be given in written on stamp paper for the guarantee of work. Any leakage found in the work shall be repaired without any extra cost. 50 % of deposit shall be released after one monsoon passed and 50 % deposit will be released after five years. Item shall be measured and paid for the whole work for unit of **one sq.m.**

ITEM No:- 45 Clearing the Site including removing damaged structure, tree, Grass etc. complete.

1.0. Clearing the site

- 1.1. The site on which the structure is to be built shall be cleared, and all obstructions loose stone, materials and rubbish of all kind bush wood and trees shall be remove! as directed The materials so obtained shall be property of the Government and shall be conveyed und stacked as directed within 50 m lead. The roots of the trees coming in the sides shall be cut and coated with a hot asphalt.
- 1.2. The rate of side clearance is deemed to be included in the rate of Clearing of Site and Will be paid as per job Items. And engineer – in- Charge can justify the Work task done and no argument can be done by the contractor on justification of Engineer – in – Charge. Payment shall be done on recomondetion of Engineer – in – Charge with the Limitation of Rates Quoted by the Contractor.

1.3 Setting out

After clearing the site the centre lines will be given, by the Engineer-in-charge. The contractor shall assume full responsibility for alignment, elevation and dimension of each and all 'parts of the work. Contractor shall supply labours materials, etc. required for setting out the reference marks and bench 'marks and shall maintain them as long as required and directed.

ITEM NO:- 46 Providing and fixing M.S. grills of required pattern to wooden frames of windows etc. with M.S. flats at required spacings and frame alround, square or round bars with round headed bolts and nuts or by screws (A) Plain Grill.

The item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It. No.10.100[A] I / P.75.

**Deputy Executive Engineer
Panchayat (R & B) Sub Division
Dediapada.**

**Executive Engineer
Panchayat (R & B) Division
Rajpipla**

