

**NAME OF WORK :- Repairs work to Officers Hostel building in Walmi Campus RTC
Surat**

ITEM WISE SPECIFICATION

Item No.1

Excavation for foundation upto 1.5 m depth including sorting out and stacking of useful materials and disposing off the excavated stuff upto 50 Meter lead.(A) Loose or soft soil

1.0. General

1.1. Any soil which generally yields to the application of pickaxes and shovels, phawaras rakes or any such ordinary excavating implement or organic soil, gravel silt, sand turf loam, clay, peat etc., fall under this category

2.0. Clearing the site

2.1. 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

2.2. The rate of side clearance is deemed to be included in the rate of earth work for which no extra will be paid.

3.0. 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.

4.0. Excavation

The excavation in foundation shall be carried out in true line and level and shall have the width and depth as shown in the drawings or as directed. The contractor shall do the necessary shoring and shutting or providing necessary slopes to a safe angle, at his own cost. The payment for such precautionary measures shall be paid separately it not specified. The bottom of the excavated area shall be leveled both longitudinally and transversely as directed by removing and watering as required No. earth filling will be allowed for brining it to level If by mistake or any excavation is made deeper or wider than, that shown on the plan or directed. The extra depth or width shall be made up with concrete of same proportion as specified for the foundation concrete at the cost of the contractor. The excavation up to 1.5 m depth shall be measured under this item.

5.0. Disposal of the excavated stuff

5.1. The excavated stuff of the selected type shall be used in filling the trenches and plinth or leveling the ground in layers including ramming and watering etc.

5.2. The balance of the excavated quantity shall be removed by the contractor from the site of work to a place as directed with lead up to 50 M. and all lift.

6.0. Mode of measurements & payment

6.1. The measurement of excavation in trenches for foundation shall be made according to the sections of trenches shown on the drawing or as per sections given by the Engineer-m-charge. No payment shall be made for surplus excavation made in excess of above requirements or due to stopping and sloping back as found necessary on account of conditions of soil and requirements of safety.

6.2. The rate shall be for a unit of one cubic meter.

Item No.2

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

1.0. Materials

1.1. Murrum shall be clean, of good binding quality and of approved quality obtained from approved pots/ quarries of disintegrated rocks which contain silicon material and natural mixture of clay of clariens origin. The size of murrum shall not be more than 20 mm .

2.0. Workmanship

2.1. The Murrum to be used for filling shall be free from salts, organic or other foreign matter. All clods of earth shall be broken.

2.2. As soon as the work in foundation has been completed and measured the site of foundation shall be cleared of all debris, brick bats: mortar dropping etc., and filled with Murrum in layers not exceeding 20 cms. Each layer shall be adequately watered, rammed and consolidated before the succeeding layer is laid The earth shall be rammed with iron rammers where feasible and with the but ends of crow-bars, where rammer cannot be used.

2.3. The plinth shall be similarly filled with Murrum in layers not exceeding 20 cms. adequately watered and consolidated by ramming with iron or wooden rammers. When filling reaches finished level the surface shall be flooded with water for at least 24 hours and allowed to dry and then rammed and consolidated.

2.4. The finished level of filling shall be kept to shape intended to be given to floor.

2.5. In case off large heavy duty flooring like factory flooring, the consolidation may be done by power rollers, where so specified. The extent of consolidation required, shall also be as specified.

2.6. The excavated stuff of the selected type shall be allowed to be used in filling the trenches and plinth. Under no circumstances black cotton soil be used for filling the plinth.

3.0. Mode of Measurements & Payment

3.1. The payment shall be made for filling in plinth and trenches. No deduction shall be made for shrinkage or voids, if consolidated as instructed above.

3.2. The rate shall be for a unit of one cubic meter.

Item No.3

Supplying of crushed stone aggregates, chippings etc. of hard stone of following nominal size free of disintegrated pieces deleterious and oraganic mater (for Bitumen surface dressing etc.) and grading as per I.R.C. Code.(ii) 40mm

1.0. Materials

Coarse aggregates shall be either crushed or broken stone, crushed slag, overburnt (Jhama) brick aggregates or any other naturally occurring aggregates such as kankar and laterite of suitable quality. Materials other than crushed or broken stone and crushed slag shall be used in sub-base courses only. If crushed gravel /shingle is 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 400-8**. The type and size range of the aggregate shall be specified in the Contract or shall be as specified by the Engineer. If the water absorption value of the coarse aggregate is greater than 2 percent, the soundness test shall be carried out on the material delivered to site as per IS:2386 (Part 5).

Table 400-8 : Physical Requirements of Coarse Aggregates for Water Bound Macadam for Sub-base/Base Courses

S.No.	Test	Test Method	Requirements
1) ***	Los Angeles Abrasion value	IS: 2386(Part 4) IS: 2386 (Part-4) or	40 percent (Max) 30 percent (Max)
	or Aggregate Impact value	IS:5640*	

2)	Combined Flakiness and Elongation Indices (Total) **	IS:2386 (Part-1)	35 percent (Max)
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* Aggregates which get softened in presence of water shall be tested for Impact value under wet conditions in accordance with IS:5640.

** The requirement of flakiness index and elongation index shall be enforced only in the case of crushed broken stone and crushed slag.

*** In case water bound macadam is used for sub-base, the requirements in respect of Los Angeles Value and Aggregate Impact Value shall be relaxed to 50 percent and 40 percent maximum respectively.

Crushed or Broken Stone

The crushed or broken stone shall be hard, durable and free from excess flat, elongated, soft and disintegrated particles, dirt and other deleterious material.

3.0. Mode of Measurements & Payment

3.1. The payment shall be made for filling in plinth and trenches. No deduction shall be made for shrinkage or voids, if consolidated as instructed above.

3.2. The rate shall be for a unit of one cubic meter.

Item No.4

Spreading the stone aggregate for rolling and W.B.M. including filling the interstices to required camber and gradient (excluding spreading of Blindage)(ii) 40mm to 63mm size aggregates (H.B.)

The coarse aggregates shall be spread uniformly and evenly upon the prepared sub-grade/ sub-base in the required quantities from the stockpiles to proper profile by using templates placed across the road about 6 m apart, in such quantities that the thickness of each compacted layer is not more than 75 mm. In no case shall these be dumped in heaps directly on the area where these are to be laid nor shall their hauling over a partly completed base be permitted. Wherever possible, approved mechanical devices such as aggregate spreader shall be used to spread the aggregates uniformly so as to minimize the need for manual rectification afterwards.

No segregation of coarse aggregates shall be allowed and the coarse aggregates, as spread shall be of uniform gradation with no pockets of fine material.

The surface of the aggregates spread shall be carefully checked with templates and all high or low spots remedied by removing or adding aggregates as may be required. The surface shall be checked frequently with a straight edge while spreading and rolling so as to ensure a finished surface as per approved drawings.

The coarse aggregates shall not normally be spread more than 3 days in advance of the subsequent construction operations.

3.0. Mode of Measurements & Payment

3.1. The payment shall be made for filling in plinth and trenches. No deduction shall be made for shrinkage or voids, if consolidated as instructed above.

3.2. The rate shall be for a unit of one cubic meter.

Item No.5

Spreading blindage or road crust filling the gaps in metal and leveling to camber and gradient as directed.(ii)Sand

Application of binding material : After Spreading the stone aggregate, the binding material sand where it is required to be used shall be applied successively in two or more thin layers at a slow and uniform rate.

After each application, the surface shall be copiously sprinkled with water, the resulting slurry swept in with hand brooms, or mechanical brooms to fill the voids properly in proper slope and levelling if required. As per directions of engineer in charge.

3.0. Mode of Measurements & Payment

3.1. The payment shall be made for filling in plinth and trenches. No deduction shall be made for shrinkage or voids, if consolidated as instructed above.

3.2. The rate shall be for a unit of one cubic meter.

Item No.6

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 form work 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 P.No.40 .

3.0. Mode of Measurements & Payment

3.1. The payment shall be made for filling in plinth and trenches. No deduction shall be made for shrinkage or voids, if consolidated as instructed above.

3.2. The rate shall be for a unit of one cubic meter.

Item No.7

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.5.3.13 P.No. 129 .

Item No.8

Removing dry or oil bound distemper by a washing and scraping and sand papering the wall surface smooth including necessary repairs to scratches complete. (b) for removing dry oil bound distemper on ceilings and sloping roofs.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.5.3.13 P.No. 129 except the work to be done for ceilings and sloping roofs.

Item No.9

Point wiring for Light / Bell with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires up to 10 mtr length , in below type of pipe erected with 6A Modular type switch / bell push & accessories and earth continuity of following type, erected on PVC / Metallic/Wooden box, single mounting base frame covered with textured/metallic/white front plate modules erected on / in wall / ceiling as per pipe erected, with necessary Lamp holder/ceiling rose / H.D.Connector as directed.(h) with oval conduit /PVC casing capping double lock type erected concealed in wall/ceiling complete

The technical specification of this item is as per the “**Detailed Technical Specification for Electrical Items**” covered in this Tender.

Item No.10

Point wiring for Tissino / Modular secondary light point with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires, in below type of pipe to be erected complete with earth continuity and necessary connection with primary light with accessories erected on Metal / PVC / wooden box covered with 3 mm thick PC(Polycarbonate) / Acrylic sheet for open / concealed wiring. with necessary Lamp holder / ceiling rose / H.D.Connector as directed. (h) with oval conduit /PVC casing capping double lock type erected concealed in wall/ceiling complete

The technical specification of this item is as per the “Detailed Technical Specification for Electrical Items” covered in this Tender.

Item No.11

Point wiring for Individual Plug with & earth wire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires up to 10 mtr length, in below type of pipe erected complete with Modular type switch & 5 pin Plug erected on PVC / Metallic/Wooden box covered with appropriate front plate modules erected on / in wall / ceiling as per pipe erected with following type of accessories. [II] For 16A Plug and 16 amp switch with 2-2.5 sq.mm Cu. Wire from mcb db board. (c) with oval conduit /PVC casing capping double lock type erected flushed on wall/ceiling complete

The technical specification of this item is as per the “Detailed Technical Specification for Electrical Items” covered in this Tender.

Item No.12

Providing & erecting Switch board for Computer or electric apparatus consisting of following modular type accessories mounted with PVC / Metallic concealed/open box with single mounting base frame covered with textured/metallic /white front plate,modules erected with necessary connections as directed

1 no. 6A/16A universal plug-switch combined.

3 nos. 6A Switch

3 nos. 6A 5 pin Plug For Modular Type Accessories Cat. III

The technical specification of this item is as per the “Detailed Technical Specification for Electrical Items” covered in this Tender.

Item No.13

Providing & erecting Approved make Power Saving 50 Watt Ceiling Fan with double ball bearing ISI mark with Condenser 230 volt A.C. 50 Hz 1200 mm sweep complete having 3blades with aluminium blades with , canopy & 30 cm. down rod erected with earthing.(Make shall be approved by Engineer in charge))

The technical specification of this item is as per the “Detailed Technical Specification for Electrical Items” covered in this Tender.

Item No.14

Supplying and erecting approved make oscillating type bracket fan A.C. 230V. 50cy/s 400/450 mm sweep wall mounted with height adjustment and rotary tilting device complete with guard, flexible Core plug top complete erected with lead wires as directed. Cat.II

The technical specification of this item is as per the “**Detailed Technical Specification for Electrical Items**” covered in this Tender.

Item No.15

Supplying and erecting 19 / 20 mm. nominal bore Medium Class M.S. Pipe down rod erected duly painted for fan complete with proper insulation without leakage and earthing.

The technical specification of this item is as per the “**Detailed Technical Specification for Electrical Items**” covered in this Tender.

Item No.16

Supplying & erecting approved make low noise decorative exhaust fan having square frame ABS body with inbuilt lowers & square frame.200mm with 1350RPM

The technical specification of this item is as per the “**Detailed Technical Specification for Electrical Items**” covered in this Tender.

Item No.17

**Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA/aluminium pressure die cast powder coated and high U.V. & corrosion resistance with diffuser housed in aluminium casted body with company mark/name
160V to 270V,Power Factor more than 0.95, THD < 15 %,
CCT 3000 K to 6500K,
Luminaire efficacy> 85 lumens/watt ,
LED driver efficiency > 85 %
(fitting required LM-79 & LM-80 Certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) (A) Square/ Circular shaped Surface/Recessed Mount Downlight with provision for spring loaded mounting clips complete.IP20 (iii) 16-20 watts, Surge-2 KV**

The technical specification of this item is as per the “**Detailed Technical Specification for Electrical Items**” covered in this Tender.

Item No.18

Approved make CFL Retrofit 5 / 7 / 9 /11 Watt, erected if required Cat.III

The technical specification of this item is as per the “**Detailed Technical Specification for Electrical Items**” covered in this Tender.

Item No.19

Supplying and erecting LED street light / Flood light fittings with High power White LEDs wattage of 3 Watt and above assembled on single MCPCB, efficiency more than 130 lm/w and corrosion free High pressure die cast aluminum housing with smooth finish powder coated and heat sink extruded aluminium with diffuser and Polycarbonate optics/ lenses, with toughened glass with company mark/name engraved or embossed 160 to 270 V,Power Factor more than 0.95, THD < 10 %, CCT 3000 K to 5700K,Uniformity ratio >0.45, Luminaire efficacy> 100 lumens/watt .

LED driver efficiency > 85 %.(fittings required LM-79 & LM-80 certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) (A) Street Light (IP-65), Surge protection -4KV integral and ,Light must have 440VAC line supply with over-voltage protection. (ii) above 48 to 60 Watts - Cat-III

The technical specification of this item is as per the “Detailed Technical Specification for Electrical Items” covered in this Tender.

Item No.20

Providing and erecting street light pole bracket comprising main B Class MS pipe of 4.2 cm/require outside dia. complete with suitable B Class M.S. sleeve tubing of approx. 45cms.length and suitable for 76.5 mm / 80mm. / require size pole top having sufficient fasteners for fixing the brackets and having spread of 1 mtr. length with suitable rise as per site condition & suitable welded stiffener reducer and nipple with check nut complete painted with one coat of Red oxide / PU base primer and two coats of Aluminium / PU paint. paint with following nos of arms. [A] Single Arm bracket 1 Mtr

The technical specification of this item is as per the “Detailed Technical Specification for Electrical Items” covered in this Tender.

Item No.21

Providing and erecting Inverter based approved make split air-conditioning unit consisting of condensing unit with variable speed fan motor, inverter type hermetically sealed rotary compressor with accessories etc. duly connected separately erected evaporating unit and blower motor with its accessories by means of extra supplied proper insulated copper tubing, drain PVC pipes suitable for (cost includes Eco Friendly green gas charging and 15A plug top & Remote Control & MS Stand) with necessary core cutting. (1)For 3 Star Rating of current year (B) for 1.5 ton capacity

The technical specification of this item is as per the “Detailed Technical Specification for Electrical Items” covered in this Tender.

Item No.22

LIGHT WEIGHT CALCIUM SILICATE GRID CEILING:

Providing and fixing eco-friendly light weight calcium silicate false ceiling tiles having Tegular edge & 15 mm Thick Densified edges on the Tile Periphery for Extra Strength The Light weight calcium silicate ceiling tiles shall have , light reflection 85% non-combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity 0.043° w/m KC. for the best thermal Insulation. The Light weight calcium Silicate tile shall be of approved texture Fine fissured/ Spintone/Cosmos having NRC value of 0.5 & Globe having NRC value of 0.75 NRC or equivalent of size 595 X 595 mm to be laid on true horizontal level suspended inter locking metal grid of hot dipped galvanized steel sections (galvanizing @120 grams per sqm including both side) consisting of main ‘T’ runner suitably spaced at joints to get required length and size of 24X38mm made from 0.30 mm thick (minimum) sheet, 1200mm centre to centre, and cross ‘T’ of size 24X28mm made out of 0.33mm (Minimum) sheet spaced 1200mm along spaced between main ‘T’ at 600mm centre to centre to form agrid of 1200X600mm and secondary cross ‘T’ of length 600mm and size 24x28mm made of 0.30 mm thick (Minimum) sheet to be interlocked at

middle of the 1200X600mm panel to form grid of size 600X600mm resting on periphery walls/ partitions on a perimeter wall angle pre-coated steel of size (24X24X3000mm made of 0.40mm) sheet with the help of rawl plugs at 450mm centre to centre with 25mm long drywall screws @ 230mm interval and laying 15mm thick Densified edges light weight calcium silicate ceiling tiles of approved texture (Fine Fissured/Cosmos/Spintone) in the grid including, cutting /making opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required, Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25X35X1.6mm fixed to ceiling with 12.5mm dia and 50mm long dash fasteners, 4mm G.I. adjustable rods with galvanized steel level clips of size 85X30X0.8mm, spaced at 1200mm centre to centre long main 'T' bottom exposed with 24mm of all T-sections shall be pre-painted with polyester baked paint, for all heights, as per specifications, drawings and as directed by engineer-in-charge. Note:- Only calcium silicate false ceiling area will be measured from wall to wall. No deduction shall be made for exposed frames/opening (cut outs) having area less than 0.30 sqm. The calcium silicate ceiling tiles shall have NRC. Value of 0.50 (Minimum) for Fine fissured/Spintone/Cosmos and 0.75 NRC for Globe, light reflection 85% non-combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity. 0.043°

Materials:-

- 1.1 Calcium silicate tiles for false ceiling confirming to relevant IS standard.
- 1.2 Grid channels of G.I. hot dipped galvanised steel section and Misc. fixtures and fastening shall be confirming to relevant IS/as approved by Engineer-in-charge.

1.3 Workmanship:-

The item covers the requirement of fixing of Calcium silicate tiles and grid framing of G.I. sections with approved fixtures & fasteners such as bolts, screws etc., as per details, drawings and as directed by the Engineer-in charge.

- 1.4 G.I. channels confirming M-23 shall only be used.
- 1.5.1 Wall angle fixed to the perimeter at the wall at the ceiling level which decided.
- 1.5.2 Main sections are suspended from the soffit with the help of plugs, soffit cleat, 4 mm rod and levelling deep.
- 1.5.3 Cross sections are locked with the main section.
- 1.5.4 Completed frame work with section ready for laying ceiling panels.
- 1.5.5 The light weight calcium silicate tile shall be of approved texture fine fissured/Spin tone/Cosmos having NRC value of 0.5 & Globe having NRC value of 0.75 NRC or equivalent of size 595 x 595 mm to be laid on true horizontal level.

1.6 Mode of measurement and payment:-

The rate includes cost of materials, all labours, tools tackles etc. required for satisfactory completion of item. The necessary vouchers bill of purchase of materials shall be produced if demanded by the Engineer-in-charge.

- 1.9 Rate shall be in unit of on **sq.mt** basis.

Item No.23

Finishing wall with weather proof exterior emulsion paint on wall surface (two coats) to give an required shape even shade after thoroughly brushing the surface to remove all dirt, and remains of loose powdered materials.etc complete

Material:-

The water shall conform to M-1, exterior acrylic emulsion conform to M-83 (I.S.5411) Part-2, Asian apex ultima, ICI weather shield, Neroleck, or equivalent.

Workmanship:-

Scaffolding - Where scaffolding is necessary it shall be erected in such a way that as far as possible no part of scaffolding shall rest against the surface to be white or colour washed. A properly secured strong and well tied suspended platform (zoola)

may be used for white washing. Where ladders are used, pieces of old gunny bags shall be tied at top and bottom to prevent scratches to the floors and walls. For white washing of ceilings, proper stage scaffolding shall be erected where necessary.

Preparation of Surface :- The relevant specification of painting item as per specification booklet shall be followed except that the work white wash shall be submitted with exterior acrylic emulsion. The surface shall be thoroughly wetted with clean water before exterior acrylic emulsion is applied.

Preparation of Paint :- Semi exterior acrylic emulsion shall be prepared by adding 1 (one) part of clean water to 2 (two) part of exterior acrylic emulsion by volume.

Application of paint :-

No painting shall be done when the paint is likely to be exposed to a temperature of below 7°C within 48 hours after application.

When weather conditions are such as to cause be carried out "in the shadow" as far as possible. This helps the proper hardening of the paint film by keeping the surface moist for a longer period.

To maintain the uniform mixture and to prevent segregation, the paint shall be stirred frequently in the bucket.

The surface shall be treated with minimum two coats of exterior acrylic emulsion. Not less than 24 hours shall be allowed between two coats. New coat shall not be started until the proceeding coat has become sufficiently hard to resist marking by the brush being used. In hot dry weather, the proceeding coat shall be slightly moistened before applying the subsequent coat.

The finished surface shall be even and uniform in shade, without patches, brush marks, paint drops etc.

The exterior acrylic emulsion shall be applied with a brush with relatively short stiff hog or fibre bristles. The paint shall be brushed in uniform thickness and shall be free from excessively heavy brush marks. The lamps shall not well brushed out.

Exterior acrylic emulsion shall not be applied on surface already treated with white wash, colour wash, distemper dry or oil bound varnished paint etc. It shall not be applied on gypsum, wood and metal surfaces.

Mode of measurements and payment :-

The payment shall be made for a unit of one sq.metre.

Item No.24

Providing dry pressure type Powder Based N2 (Stored Pressure) Low Pressure Extinguisher (Service Pressure ≤19 bar) ABC Powder Based Fire Extinguisher Capacity in 9 Kg Class -B FIRE EXTINGUISHERS as directed by executive incharge

TECHNICAL SPECIFICATIONS DRY POWDER TYPE FIRE EXTINGUISHER 9KG etc,

1. Dry Chemical Powder fire Extinguishers (Cartridge type) with fire rating ABC manufactured as per IS: 15683 of 2006 with IS mark and also comply with latest approval of prevailing regulations of fire safety in the state government.
2. The body and handle should be made of stainless steel.
3. The neck ring, cap, plunger, cartridge holder, piercer, siphon tube should be of brass or stainless steel.
4. It should be filled with ABC dry chemical powder, manufactured per IS: 14609 of 1999.
5. The CO2 Cartridge shall confirm to IS: 4947 of 2006 with IS mark.
5. The outlet connection, seating device and other parts in the CO2 cartridge should be nonferrous or stainless steel as per IS: 3224.

Mode of measurements and payment :-

The testing certificate shall be produced before payment to the concern engineer in Charge.

The payment shall be made for a unit of one No basis.

Item No.25

Providing and fixing 600mm x 450mm bevelled edge mirror of superior glass mounted on 6mm thick A.C. sheet or plywood sheet and fixing to wooden plug with C.P. brass screws and washers

1. Materials

2. The 600 mm. x 450 mm. size mirror shall be of superior glass with edge rounded or beveled as specified. It shall be free from flaws, specks, or bubbles and its thickness shall not be less than 6 mm. The glass for the mirror shall be uniformly silver plated at the back and shall be free from silvering defects. Silvering shall have a protective uniform covering of red lead paint. The 6 mm. thick plywood shall conform to M-37 the 6 mm. thick A. C. Sheets shall conform to M-24.

2.0. Workmanship

2.1. The mirror of 600 mm. x 450 mm size mounted on A.C. Sheet or plywood 6 mm. thick with C.P. brass clips shall be fixed as directed, by fixing wooden plugs in wall and C.P. brass screws and washers. The work shall be carried out in best workman like manner.

3.1. Mode of measurements & payment

3.2. The rate includes cost of all labour and materials tools and plant etc. required for satisfactory completion of this item.

3.3 The payment shall be made for a unit of One number.

Item No.26

Providing and fixing C.P. brass towel rail complete with C.P. brass brackets fixed to wooden plugs with C.P. brass screws. (B) 600mm x 20mm size.

1.0. Materials

1.1. The C.P. brass towel rail shall be 600 x 20 mm. of best quality as approved by the Engineer-in-charge. The brackets shall be of C.P. brass. The rail shall conform to I.S. 1068-1958.

2.0. Workmanship

2.1. The brackets of the towel rail shall be fixed by means of C.P. brass screws to wooden plugs firmly embedded in the wall with C.M. 1:3 (1 cement : 3 coarse sand). The towel rail shall be fixed as and where directed.

3.0. Mode of measurements and payment

3.1. The rate includes cost of all labour and materials, tools and plant etc. required for satisfactory completion of this item.

3.2. The rate shall be for a unit of One number

Item No.27

Providing and fixing 600mm x 120mm glass shelf with C.P. brass bracket and guard rail complete fixed to wooden plug with C.P. brass screws.

1.0. Materials : The glass shelf of 600 mm. x 120 mm. size shall be of 5 mm. thick plate glass. The edge of the glass shall be ground. The C.P. over brass guard rail shall be best quality and make.

2.0. Workmanship

2.1. The C.P. brass brackets of the glass shelf shall be fixed with C.P. screws to wooden plugs firmly embedded in the wall C.M. 1:3 (1 cement : 3 coarse sand). The C.P. guard rail shall be fixed to glass shelf as directed.

3.0. Mode of measurement and payment

3.1. The rate includes all labour and materials tools and plant etc. required for satisfactory completion of this item,

3.2. The rate shall be for a unit of One number.

Item No.28 & 29

Providing laying and jointing in true line and level 15mm dia. U.P.V.C. Pipe (SCH-40) for cold water including fittings 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 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.

(1) 15mm Dia (2)25mm Dia

Material:

The Pipe shall be As per relevant standard ASTM –D-1785.

Laying :

The Contractor shall set the Layout and clear marking on Floor / walls before laying the Pipes. The pipe should be must fixed in positioned and Truly in Line Level. Making zari in walls / floors as per suitable dimension and dia of pipe.

Piping Installation Support and Spacing

Concealed Piping: Pipes to ne concealed in chases. The pipes and fitting are to be pressure tested prior to concealing the chases. To maintain alignment of CP fittings while joining, all alignment of fittings and pipe shall be done correctly. DO NOT USE NAILS FOR HOLDING OF PIPES IN THE CHASES.

External Installations: For pipes fixed in the shafts, ducts etc. there should be sufficient space to work on the pipes. Pipes sleeves shall be fixed at a place the pipe is passing through a wall or floor so as to allow freedom for expansion and contraction. Clamping of the pipe is done to support it while allowing the freedom for movement. Pipes in trenching shall be laid in accordance to the Good Plumbing practices followed for All water supply systems shall be tested to hydrostatic pressure test. The pressure tests are similar to the test pressure used for other plastic/metal pipes. System may be tested in sections and such section shall be entirely checked on completion of connection to the overhead tank or pumping system or mains.

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. These clamps shall be spaced at regular intervals in straight length at 2 M C/C interval in horizontal run and 2.5 M. interval in vertical run. 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 of the smallest required size. After fixing the pipe the holes shall be made good with cement mortar 1:3(1 cement : 3 coarse sand) and properly finished to match the adjacent surface

Mode of measurements and payment :

1 The description of each 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; testing, fitting in position, straight, cutting and waste, return of packing etc.

2 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 walls, ceiling, floors etc shall be measured and paid under this item.

3 All the work shall be measured in decimal system as fixed in its place, subject to tolerance given below unless otherwise stated:

(i) Dimension shall be measured to the nearest 0.01 meter

(ii) Area shall be worked out to the nearest 0.01 sq. meter.

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

5 In case of fitting of unequal bore, the largest bore shall be measured for the rest.

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

3.7 The rate includes Fixing pipe with screwed socket joints, together with all fittings of SCH 40 (such as bends, sockets, springs, elbows, tees, crosses, short pieces, clamps and plugs unions etc.) and fixing complete with clamping wall-hooks, wooden plugs etc and also cutting ,screwing and waste and for making forged (or hand made) bends on piping as required. Connector shall be inserted, where required or directed. The rate also includes cutting through walls, floors etc. and their making good and painting exposed threads with anti corrosive paint as above and testing. Where tubes are to be fixed to wall, ceiling and flooring, the rate shall not include painting of pipes, providing sleeves and sand filling under floor for which separate payment shall be made.

3.8 The payment shall be made for a unit of one running meter.

Item No.30

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 intenal 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 slabe with 1:2:4 mix (1-cement :2- coarse sand :4-graded stone aggregate 20mm size) foundation concrete 1:5:10 inside plaster 15mm thick with cement mortar 1:3 finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete.(i) Inside dimensions 455mmx610mm and 450mm deep for single pipe line.

1.0. Materials & Workmanship:

Water shall conform to M-1 Cement shall conform to M-3. Coarse sand shall conform to M-5 Brick shall conform to M-15. Stone aggregates shall conform to M-12. Brick bat shall conform to M-14 Ms. Bat shall conform to M-18.

2.Workmanship :

1. C.I. inspection chamber with provision of C.I. bends of specified size with bolts, nuts and felt washers for underground drain shall be enclosed in masonry chamber which shall be constructed as under :
 - a. The excavation shall be done true to dimensions and levels shown on the plans or as directed.
 - b. Bed concrete shall be 15 cms. thick C.C. 1:5:10 (1 cement : 5 coarse sand : 10 graded brick bat aggregates. The projection of bed concrete beyond the masonry walls shall be 7.5 cms.
 - c. Masonry walls and plaster work shall be carried out as per general technical specification
 - d. The cover slab shall be constructed as per relevant specifications of 24.27

3.0. Mode of measurements and payment

1. The earth work in excavation, providing and laying C.I. inspection chamber and bends shall be measured and paid for separately.
2. The payment shall be made for a unit of One number.

Item No.31

Providing big plastic bucket use for hostel building.

1.0. Materials & Workmanship:

Heavy duty plastic bucket/ water container, 20 liters capacity with handle and removable tight-fit lid. Attached clip-on cap on the lid. The bucket is designed for transport and storage of clean, safe drinking water for domestic use

(b) Buckets made of virgin grade HDPE (High Density Poly Ethylene) and virgin LDPE (low density polyethylene), tough durable UV resistant and safe for food and drinking water storage (food grade material)

(c) Should not contain toxic elements.

(d) Capacity: 20 litres of water

(e) The top is reinforced to prevent ovaling, bottom part is reinforced to prevent scraping of the base

(f) Lid should be able to close tight, but easy to open and close.

(g) Strong flat plastic or anti rust metal handle without sharp edges and a roller grip strongly fixed to the bucket.

(h) Curved inside base to wall join for easy cleaning.

1.2 Appearance - The buckets shall have smooth surface finish without any blemishes. Any spruce (stalk) shall be neatly removed by milling or by cutting. The buckets shall be free from moulding flash.

1.3 Handle - The handle shall be rigid and made of metal, coated metal or HDPE. Where metal handles are used, they shall be corrosion resistant. If they are injection moulded, then the HDPE used shall be of grade 45 MA or 54 MA (see IS : 7328-1974*).

Mode of measurement and payment

The rate shall be for a unit of One number.

Item No.32

Providing small plastic bucket of use for hostel building

The relevant specification of Item no.31 shall be followed except the size of bucket as per site use and selection of engineer in charge.

Mode of measurement and payment

The rate shall be for a unit of One number.

Item No.33

Providing plastic tumbler of bathroom use for hostel building

The relevant specification of Item no.31 shall be followed except the size of tumbler as per site use and selection of engineer in charge.

Mode of measurement and payment

The rate shall be for a unit of One number

Item No.34

Providing Door Mat (Big) for hostel building

The item included to Providing Door Mat (Big) for hostel building as per site use and selection of engineer in charge.

Mode of measurement and payment

The rate shall be for a unit of One number

Item No.35

Providing Door Mat (Small) for hostel building

The item included to Providing Door Mat (small) for hostel building as per site use and selection of engineer in charge.

Mode of measurement and payment

The rate shall be for a unit of One number

Item No.36

Providing bathroom mini table (patla) for hostel building

The item included to Providing bathroom mini table (patla) for hostel building as per site use and selection of engineer in charge.

Mode of measurement and payment

The rate shall be for a unit of One number

Item No.37

Providing bathroom mini dustbin for hostel building

The item included to Providing bathroom mini dustbin for hostel building as per site use and selection of engineer in charge.

Mode of measurement and payment

The rate shall be for a unit of One number

Item No.38

Providing big dustbin for rooms hostel building

The item included to Providing big dustbin for rooms hostel building as per site use and selection of engineer in charge.

Mode of measurement and payment

The rate shall be for a unit of One number

Item No.39

Providing Mini Hanger for Rooms hostel building

The item included to Providing Mini Hanger for Rooms hostel building as per site use and selection of engineer in charge.

Mode of measurement and payment

The rate shall be for a unit of One number

Item No.40

Providing curtain rods for rooms hostel building

The item included to Providing curtain rods for rooms hostel building as per site use and selection of engineer in charge.

Mode of measurement and payment

The rate shall be for a unit of One number

Item No.41

Providing and erecting water cooler having storage capacity 80Ltr. & cooling capacity 40 Ltr.per hour @ an ambient temp of 45° C. The outlet temp. of the water should drop by 15° C within a hour, The water cooler should be comprising of hermetically sealed compressor, fan motor, condensing unit, water tank surrounded by evaporating coil, thermostats, relay etc. complete with necessary inlet & outlet connection. The body of water cooler will be made from Stainless Steel.

The technical specification of this item is as per the “**Detailed Technical Specification for Electrical Items**” covered in this Tender

Item No.42

Supplying & erecting 5 stage single reverse osmosis water purification system with M.S. powder coated frame, prefilter housing with 'O' ring presediment filter GAC filter, carbon filter suitable buster DC pump capacity 80 psi, mention with 40 psi inline type post carbon filter auto low & high pressure switches with following size

of storage tank & LPH capacity & erected as directed with one year comprehensive maintenance guarantee [B] 25 Ltr / Hr with 30 Ltr. S.S.Pressure Tank

The technical specification of this item is as per the “**Detailed Technical Specification for Electrical Items**” covered in this Tender

Item No.43

Supplying and erecting horizontal / vertical mounting type storage water heater with copper container housed in M.S./S.S./ABS body insulated with glass wool/puff complete with heating elements,adjustable thermostats 300C to 850C, indicating lamp, safety valve, fusible plug, etc.complete erected with coach bolts, nuts. washers & cementation (B)15 Ltr-.with 2 /3K.W. heating element Cat – III

The technical specification of this item is as per the “**Detailed Technical Specification for Electrical Items**” covered in this Tender

Item No.44

Providing water proofing solution by painting interior surface of existing walls affected by dampness with 2coats of smart care hydroloc xtreme primer, 1coat of Damp seath interior paint with 2 coat water proofing putty and 2 coat of tractor emulsion paint as per directed with necessary washing, cleaning and other requires measures by engineer incharge

1.0. Materials

Water shall be conform M-1. The plastic emulsion shall conform to I.S.: 5411-1969 (part-I). High Performance Waterproof Primer - with waterproofing chemical added, acrylic co polymer based paint, water proofing Putty and emulsion paints.

2.0. Workmanship

Water proofing Treatment as below:

2.1. Preparation of surfaces : The surfaces painting shall be cleaned of all rust, scale, dirt and other foreign matter sticking to it with wire brushes, steel wool, scrapers, sand paper etc. This surface shall then be wiped finally with mineral turpentine which shall also remove grease and perspiration of hand marks. The surface shall then be allowed to dry.

2.2. Application of primer :(2 Coats of High Performance Waterproof Primer)

2.2.1. After the preparation of the surface, the 2 Coats of High Performance Waterproof Primer coats of shall be applied immediately. The brushing operations are to be adjusted to the spreading capacity advised by the manufacturer of the particular primer. 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 alternately in opposite directions, 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 wall constitute one coat.

2.2.2. During painting, every time, after the priming coat has been worked out of the brush bristles or after the brush has been unloaded, the bristles of the brush shall be opened up by striking the brush against portion of the unpainted surface with the end of the bristles, held at right angles to the surface, so that bristles thereafter will collect the correct amount of paint when dipped again in to a paint container The prima/y coat shall be allowed to dry completely before painting is started.

2.2.3. No hair marks from the brush or clogging at pain puddles in the corner of panels angles of molding etc. shall be left on the work

2.2.4. Special care shall be taken while painting over bolts, nuts, rivets, overlaps etc.

2.2.5. The container when not in use shall be kept close and free from air so that paint does not thicken and also shall be kept guarded from dust.

2.3 Damp proof interior paint (1coat)

This additional primer in single coat is to be applied on previously painted wall to check dampness.

2.4 Water proofing Putty (2 Coat)

specially designed white cement based premium quality putty with unique properties and silicone additives. 2 coats of this waterproofing putty.

2.4. Emulsion paint (2Coats)

Preparation of Mix :

This shall be done as per manufacture's instructions. The thinning of emulsion is to be done with water and not with turpentine. The quantity of thinner to be added shall be as per manufacturer instructions

2.4. Application :

2.4.1. Before pouring into small containers for use, the paint shall be stirred thoroughly in item container. When applying also, the paint shall be continuously stirred in the smaller container, so that its consistency is kept uniform.

2.4.2. The paint shall be laid on evenly and smoothly by means of crossing and laying off the crossing and consist of covering the area over with paint, brushing the surface hard for the first time over and then, brushing alternately in opposite direction two or three times and then finally brushing lightly in direction at right angles to the same. In this process, no brush Marks shall be left after the laying off is finished. No hair marks from the brush or clogging of paint puddles in the corners of panels, angles of moldings, etc. shall be left on the work. The full process of crossing and laying off will constitute one coat.

2.4.3. The paint shall be applied with brush or rollers. The second or subsequent coat shall not be started until the proceeding coat as become sufficiently hard to resist marking by brushing being used.

2.4.4. The surface on finishing shall present a flat velvety smooth finish. It shall be even and uniform in shade without patches, brush marks, paint drops etc.

2.5. Precautions :

(a) Old brushes if they are to be used with emulsion paints, shall be completely dried of turpentine or oil paint by washing in warm soap water. Brushes shall be quickly washed in water immediately after use and kept immersed in water during break periods to prevent the paint from hardening on the brush.

(b) In the preparation of wall for plastic emulsion painting, no oil base putty shall be used in filling cracks, holes etc.

(c) Splashes on floors etc. shall be cleaned out without delay as they will be difficult to remove after hardening.

(d) Washing or surfaces treated with emulsion paint shall not be done within 3 to 4 weeks of application

3.0. Mode of measurement & payment

3.1. All the work shall be measured in the decimal system as under:

(a) Dimensions shall be measured to the nearest 0.01 m.

(b) Area in individual item shall be worked out to the nearest 0.01 sq.m.

All the work shall be measured in sq. mt. Deductions for jambs, soffits, sills etc. for openings not exceeding 0.5 sq. mt. each in area, for ends of joists, posts, beams, girders, steps etc. not exceeding 0.5 sq mt. each in area and for openings exceeding 0.5 sq. mt. and not exceeding 3.0. sq. mt. each in area, deductions and additions shall be made as under.

3.2. No deductions shall be made for ends of joists, beams, posts, etc. and openings not exceeding 0.5 sq mt. each. No addition shall be made for reveals, jambs, soffits, sills etc. of these openings not for finish around ends of joints, beams, posts etc.

3.3. No deductions for openings exceeding 0.5 sq.mt. but not exceeding 3 sq. mt. each shall be made as follows and no addition will be made for reveals, jambs, soffits etc. of these openings :

(a) When both the faces of walls are provided with finish, deduction shall be made for one face only.

(b) When each face of wall is provided with different finish, deduction shall be made for that side of frame for door, windows, etc. on which width of reveals is less than that of the other side. Where width of reveals on both faces of wall are equal, deduction of .50% of area of opening on each face shall be made from total area of finish.

(c) When only one face of wall is treated and the other face is not treated, full deduction shall be made if the width of reveal on the treated side is less than that on the untreated side, but if the width of the reveal is equal or more than on the untreated side neither deductions nor additions to be made for reveals, jambs, soffits, sills etc.

3.4 In case of area of openings exceeding 3 sq. mt. each, deductions shall be made for openings but jambs, soffits, sills shall be measured.

3.5. No deductions shall be made for attachment such as casing, conducts, pipe, electric wiring and the like.

3.6. Corrugated surfaces shall be measured flat as fixed and not girth. The quantities so measured shall be increased by the following percentage and the resultant shall be included with the general areas:

(a) Corrugated steel sheets..... 14%

(b) Corrugated A.C. sheets..... 20%

(c) Semi corrugated A.C. Sheets..... 10%

(d) Nainital pattern roof (Plain sheeting sheets)..... 10%

(e) Naintial pattern roof (with corrugated sheets)..... 25%

3.7. Cornices and other wall features, when they are not picked out in a different finish/colour shall be girthed and included in the general area.

3.8. The rate shall include the cost of ail materials, labour, scaffolding, protective measures etc. involved in all the operations described above.

3.9. The rate shall be for a unit of One sq. Meter.

Deputy Director (Tech)
WALMI Anand