

TECHNICAL SPECIFICATION

(Civil Work Sub Estimate -01)

Item No. 01 : Dismantling doors, windows, ventilators etc. (wood or steel) shutters including chowkhats architraves, holdfasts and other attachment etc. complete and stacking them within all lead and lift.(i) Not exceeding 3 Sq.M. in area.

1. Workmanship:

- Work complete as per relevant specification of Sr. No: 20.1(I) page No -133 in General specification R & B booklet for building works.

2. Measurements:

- The rate shall be consolidated for all above items.
- The doors, windows, ventilators etc. not exceeding 3 sq. ml. in area (each) including shutters and chowkhats, Architrave, holdfasts and other attachment to frames etc. will be dismantled and measured under this item.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one number.

Item No. 02 : Removing and scraping of old deteriorated plaster of any thickness from wall / R.C.C member including stacking of serviceable material and disposal of unserviceable from site of work with all lead and lift

1. Workmanship:

- Work complete as per relevant specification of Sr. No: 20.1 (II) page No -130 in General specification R&B booklet for building works.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one Cubic Meter.

Item No. 03 : Dismantling tiled of stone floors laid in mortar including stacking of serviceable materials and disposal of unserviceable materials with all lead and lift.

1. Workmanship:

- Work complete as per relevant specification of Sr. No: 20.1(I) page No -131 in General specification R & B booklet for building works.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one Sq Meter.

Item No. 04 : Demolition of Brick work and stone masonry including stacking of serviceable materials and disposal of unserviceable materials with all lead and lift.(ii) In Cement Mortar.

1. Workmanship:

- Work complete as per relevant specification of Sr. No: 20.1(I) page No -130 in General specification R&B booklet for building works.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one Cubic Meter.

Item No. 05 : Demolition including stacking of serviceable materials and disposal of unserviceable materials with all lead and lift. (i) R.C.C. work

1. Workmanship:

- Work complete as per relevant specification of Sr. No: 20.1(I) page No -130 in General specification R&B booklet for building works.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one Cubic Meter.

Item No. 06 : Dismantling steel work including distempering and stacking the materials with all lead and lift.

1. Workmanship:

- Work complete as per relevant specification of Sr. No: 20.1(I) page No -130 in General specification R&B booklet for building works.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one Kg.

Item No. 07 : Dismantling sanitary fittings like wash basin . W.C. pan Indian and European type, flushing tank etc. including stacking the materials with all lead and lift.

1. Workmanship:

- Work complete as per relevant specification of Sr. No: 20.23page No -133 in General specification R & B booklet for building works.

2. Measurements:

- The rate shall be consolidated for all above items.
- No extra payment will be given for any of the reasons.
- Water pipe lines, including rain water pipes; with clamps and specials, sewer pipe lines, (Salt glazed ware or concrete) etc. shall be measured in running metre inclusive of joints (The measurements shall be taken along the centre line of pipe and fittings.)
- The-rate shall be for a unit of one Each.

Item No. 08 : Clearing and grubbing road land including uprooting rank vegetation grass bushes,shrubs,sapling and trees girth up to 300 mm removal of stumps of trees cut earlier and disposal of unserviceable materials (C) By mechanical means in area of light jungle

1. Workmanship:

- Clearing the site: 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 Vegetation, grass bushes, shrubs, sapling trees shall be removed as directed: The materials so obtained shall be property of the Government and be conveyed and 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. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of hectare.

Item No. 09 : Excavation for foundation up to 0 to 1.5 mt. depth including sorting out and stacking of useful materials and disposing of the excavated stuff upto 50 meter lead. (A) Loose or soft soil

1. Workmanship:

- Work complete as per relevant specification of Item No: 4.0.0.(a) page No -21 in General specification R & B booklet for building works

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labor, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No. 10: Excavation for foundation for depth from 1.5 m to 3.0 m including sorting out and stacking of useful materials and disposing off the excavated stuff upto 50 Meter lead. (A) Loose or soft soil

1. Workmanship:

- Work complete as per relevant specification of Item No: 4.001 (A) page No -25 in General specification R & B booklet for building works.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labor, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter

Item No. 11: Disposing off the surplus excavated stuff (Earth) for lead 5 K m as directed by engineer in charge. (A) lime murrum building rubbish earth manure or sludge & excavated rock and rubbish [Earth]

1. Workmanship:

- The whole work is to be completed as per requirement shall be as per instruction of Employer's representative/employer.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labor, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No. 12: Filling available excavated earth (excluding rock) in trenches. plinth, sides of foundations etc. in layers not exceeding 20 cm. in depth consolidating each disposed layer by ramming and watering.

1. Workmanship:

- Work complete as per relevant specification of Item No: 4.12 page No -27 in General

specification R & B booklet for building works.

2. Measurements:

- The rate shall be consolidated for all above items.
- 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.
- The rate shall include the cost of all labor, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No. 13: Filling in foundation and plinth with murrum or selected soil in layers of 20cm. thickness including watering, ramming and consolidating etc. complete.

1. Material:

- Sand shall be used for filling as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No: 4.24, page No -28 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No. 14: Filling in plinth with sand under floors including watering ramming, consolidating and dressing complete

1. Material:

- Sand shall be used for filling as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No: 4.24, page No -28 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.

- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No. 15: Applying general insecticide pest control treatment to floors, cupboards etc including labour materials etc. complete. Using Imidacloprid 20 EC As Per 6113 pests Concentration Weight 0.50 percent is recommended on litre chemical emulsion dilute with 39 liter of water will give. Total dilute concentration with will be 40 litre inclusive of one litre chemical emulsion application 0.5 litre chemical/Sqm of surface is recommended as per I.S.

1. Material:

- Pest control treatment shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No: 22.00.7 page No- 137 in General specification R & B booklet for building works shall be follow except that the application as per above specification work .

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Square meter.

Item No. 16: Providing and filling with good quality sinder (steam coal) as directed by engineer in charge in sunks in layers of 15 cm thk, including watering, placing, ramming/Compacting etc. as directed.

1. Material:

- Good quality cinder (steam coal) should be used as per approved sample by EIC/ Architect. It shall be sound clean free from clay, dirt, ash or other deleterious matter.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- The Cinder to be used for. Filling shall be free from salts, organic or other foreign matter.
- Work complete including all necessary materials, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect.
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Workmanship:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No. 17: P.C.C : Providing and laying cement concrete 1:2:4 (1-Cement : 2- Coarse sand : 4-graded stone aggregates 20 mm nominal size) and curing complete including cost of formwork in (A) Foundation and Plinth

1. Material:

- Cement, sand and stone aggregate shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No: 5.3.13, page No -32 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No. 18: Providing and laying controlled cement concrete M.30 Concrete with all lead, including all transportation, pumping, pouring, curing of concrete etc complete including the cost of formwork but excluding the cost of reinforcement for reinforced concrete work in M.30 all RCC elements of Foundation, Footings base of column at upto Plinth Level

1. Material:

- Cement, sand and stone aggregate shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No 5.8.3 (A), page No -40 and Item No.9.1 (A) Page No. 54 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.

- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No. 19: Providing and laying controlled cement concrete M.30 Concrete with all lead, including all transportation, pumping, pouring, curing of concrete etc complete including the cost of formwork but excluding the cost of reinforcement for reinforced concrete work in M.30 all RCC elements of Column at all floor level

1. Material:

- Cement, sand and stone aggregate shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No 5.8.3(D), page No-40 and Item No.9.1 (G) Page No. 56 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No. 20: Providing and laying controlled cement concrete M.30 Concrete with all lead, including all transportation, pumping, pouring, curing of concrete etc complete including the cost of formwork but excluding the cost of reinforcement for reinforced concrete work in M.30 all RCC elements of RCC wall at all floor level

1. Material:

- Cement, sand and stone aggregate shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No 5.8.3 (B), page No-40 and Item No.9.1 (C) Page No. 56 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No.21: Providing and laying controlled cement concrete M.30 Concrete with all lead, including all transportation, pumping, pouring, curing of concrete etc complete including the cost of formwork but excluding the cost of reinforcement for reinforced concrete work in M.30 all RCC elements of Beam at all floor level

1. Material:

- Cement, sand and stone aggregate shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No 5.8.3 (C), page No-40 and Item No.9.1 (H)(1) Page No. 56 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No.22: Providing and laying controlled cement concrete M.30 Concrete with all lead, including all transportation, pumping, pouring, curing of concrete etc complete including the cost of formwork but excluding the cost of reinforcement for reinforced concrete work in M.30 all RCC elements of Slab at all floor level.

1. Material:

- Cement, sand and stone aggregate shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No 5.8.3 , page No -40 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No.23: Providing and laying controlled cement concrete M.30 Concrete with all lead, including all transportation, pumping, pouring, curing of concrete etc complete including the

cost of formwork but excluding the cost of reinforcement for reinforced concrete work in M.30 all RCC elements of Lintel at all floor level

1. Material:

- Cement, sand and stone aggregate shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No 5.8.3 , page No -40 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No.24 : Providing and laying controlled cement concrete M.30 Concrete with all lead, including all transportation, pumping, pouring, curing of concrete etc complete including the cost of formwork but excluding the cost of reinforcement for reinforced concrete work in M.30 all RCC elements of Stair at all floor level

1. Material:

- Cement, sand and stone aggregate shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No 5.8.3 , page No -40 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Cubic Meter.

Item No.25: Providing and laying controlled cement concrete M200 with all lead from plant site including all other taxes, octroi, transportation, pumping, pouring, curing, vibrating of concrete etc complete including the cost of any shape formwork (Round, Square, Rectangle, half circle, arc, etc.) of any height, and at all Level but excluding the cost of reinforcement for reinforced concrete work in M200 Grade Slab (Cement Level 360 Kg)

1. Material:

- Cement, sand and stone aggregate shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No: 5.8.2, page No -39 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect
- The rate shall be for a unit of One Cubic Meter

Item No.26: TRIMIX : Providing & Laying 15.0 cm thick M200 grade controlled cement concrete without fly ash trimix using P21(water reducing concrete admixture at 100 ml per bag of cement & recon 3 s fiber at 125 gm per bag of cement including making C channel 75 x 75 mm required to maintain level,slope and thickness of the concrete road leveling of placed concrete with surface vibrator and finishing with power floater & trowel light brooming the surface & including Construction joints to be formed at every 5 mt distance by grooving with mechanical saw within 48 hrs. Groove/sawed joints shall be made of 5 mm width and depth min (1/3 rd depth of the pavement) as shown in the drawing and shall be filled with ready to use PU sealant of UV gradedcutting & filling of expansion joint as directed by Engineer in charge.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No: 5.8.2 page No- 39 in General specification R & B booklet for building works. Work shall be carried out for road.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labor etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors. Area shall be measured & paid in Cubic Meter.

Item No.27: Providing TMT Bar FE 500/500D reinforcement for R.C.C. work including bending, binding and placing in position complete, all floor level

1. Material:

- TMT Fe 500 D shall be used as per approved sample and confirming to relevant IS codes and approved by Employer's representative/employer
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer.

2. Workmanship:

- The work shall consist of furnishing and-placing reinforcement to the shape and dimensions shown as on the drawings or as directed
- Steel shall be clean and free from rust and loose mill scale at the time of fixing in position and subsequent concreting.
- Reinforcing steel shall conform accurate to the dimensions given in the bar bending schedules shown on relevant drawings. Bars shall be bent cold to specified shape and dimensions or as directed, using a proper bar bender, operated by hand or power to attain proper radius of bends. Bars shall not be bent or straightened in a manner that will injure the material. Bars bent during transport-or handling shall be straightened before being used on the work. They shall not be heated to facilitate bending unless otherwise specified. A "U" type hook at the end of each bar shall invariably be provided to main reinforcement. The radius of the bend shall not be less than twice the diameter of the round bar and the length of the straight part of the bar beyond the end of the curve shall be at least four times the diameter of the round bar. In case of bars which are not round and in case of deformed bars, the diameter shall be taken as the diameter of circle having an equivalent effective area. The hooks shall be suitably encased to prevent any splitting of the concrete.
- All the reinforcement bars shall lie 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 stay blocks or metal chair spacers, metal hangers supporting wires or other approved devices at sufficiently close intervals. Bars shall not be allowed to sag between supports nor displaced during concreting or any other operations of the work. All devices used for positioning shall be of non-corrodible material. Wooden and metal supports shall not extend to the surface of concrete, except where shown on 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 blocks shall not be used. Layers of bars shall be separated by spacer bars, precast mortar blocks or other approved devices. Reinforcement after being 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 from corrosion, concrete cover shall be provided as indicated on drawings. All the bars protruding from concrete and to which other bars are to be lapped and which are likely to be exposed for a period exceeding 10 days shall be protected by a thick coat of neat cement grout.
- Bars crossing each other where required shall be secured by binding wire (annealed) of size not less than 1 mm. in such a manner that they do not slip over each other at the time of fixing and concreting.
- As far possible, bars of full length shall be used. In case this is not possible. Over lapping

of bars shall be done as directed when practicable, overlapping bars shall not touch each other, but be kept apart by 25 mm. Where not 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 shear nor bending moment is maximum.

- Whenever indicated on the drawings or desired by the Engineer-in-charge, bars shall be joined by couplings which shall have a cross-section sufficient to transmit the full stresses of bars. The ends of the bars that are joined by coupling shall be upset for sufficient length so that the effective cross section at the base of threads is not less than the normal cross-section of the bar. Threads shall be standard threads. Steel for coupling shall conform to I.S. 226.
- When permitted or specified on the drawings, joints of reinforcement bars shall be bull-welded so as to transmit their full stresses. Welded joints shall preferably be located at points where steel will not be subject to more than 75 percent of the maximum permissible stresses and welds so staggered that at any one section not more than 20 percent of the rods are welded. Only electric arc welding using a process which excludes air from the molten metal and conforms to any or all 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 the bars shall be cleaned of all loose scale, rust, stains, 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 to I.S. 814. Welded pieces of reinforcement shall be tested. Specimen shall be taken from the actual site and their number and frequency of test shall be as directed.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
 - The rate shall be for a unit of One Kg.

Item No.28: Constructing Under Ground water tank with Providing and laying controlled cement concrete M250 mix for R.C.C. work including reinforcement, boxing, centering, vibrating, curing and mixed with approved water proofing cement compound or "CEMWET" or "PIDICRETE LW" integral water proofing admixture as water proofing agent to be mixed with 50 kgs. bags shall be as recommended by the manufacture of the water proofing material, concrete work for top, bottom slab & side pardi, column, beam for under ground water tank item incl. 300mm Free Board and Necessary excavation & refilling the available earth, raft thickness 250mm & wall thickness 230mm, Sump Pit size 600mmX600mmX600mm water proofing cement plaster 20mm thick Double Coat with smooth finishing & Glazes tile Dedo, vata 10cm X 10cm , 50mm thick cement concrete flooring watering etc. Comp. to all face of tank. including locking arrangement outlet, inlet, overflow and washout outlet pipe arrangement as necessary & C.I. Cover 0.60 x 0.45 weight not less than 35 kg with locking arrangement.C.I. steps

etc. comp as per structural detail drawing Including thermo Mechanically treated bars (TMT BARS) Fe 500/500D as directed by Eng-in-charge.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- Work complete including all necessary materials, tools, tackles etc. as per described above specification.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect.
- Bidder shall be responsible for the any type of damage work at the time of execution.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.

The rate shall be for a unit of one Litre.

Item No. 29 : Providing erecting and fixing double coated ISI water tank of required capacity each with all necessary fittings and connection etc. complete on terrace.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Water storage tank shall be as per IS 12701, this material should be light Weight, non toxic all fitting materials shall be H.D.P.E. indicating the BIS license No
- The P.V.C. tank shall be of I.S.I. mark and approved quality and brand like infra or Sintex or equivalent. It shall be approved by Architect / Consultant & Engineer in charge.
- The thickness of P.V.C. materials shall be as per Company's specification. The size of tank shall be decided by Engineer in charge.
- The fixtures as shown in items of work shall be of IS approved.
- Water tank shall be installed on perfectly planed and smooth surface.
- Outlet pipe shall be 7.5 cm high then bottom surface.
- Diameter of overflow pipe shall be bigger then inlet pipe diameter
- Unions shall be used in inlet and outlet pipe.
- For connection in water tank required washer, and check-nuts shall be used. Fitting

shall be done by G.I. / P.V.C. (Grade & Quality as per prescribe in tender or detailed by Architect / Consultant & directed by EIC.) pipes as per instruction of Engineer in charge in each tank. All joints shall be leak proof.

3. Measurements:

- This shall be measured in liters and rates are as per liters of tank for the provided capacity of the water tank.
- Rate shall be inclusive of providing, placing, lifting, storing and making connection for fixtures as shown in item of work, inlet, outlet, overflow pipe, out pipe with all necessary plumbing work and material. For complete work.

The rate shall be for a unit of one Litre.

Item No.30: Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge. With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant approved by EIC/Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- Work complete as per relevant specification of Item No: 16.62, page No - 845 in General specification DSR VOL-2 for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.

The rate shall be for a unit of Cubic Meter.

Item No.31: Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge. With material conforming to Grade-II (size range 53 mm to 0.075 mm) having CBR Value-25

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant approved by EIC/ Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete as per relevant specification of Item No: 16.62, page No - 845 in General specification DSR VOL-2 for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of Cubic Meter.

Item No.32: Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical averfinisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achievethe desired density, complete as per specifications and directions of Engineer-in-Charge.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant approved by EIC/ Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete as per relevant specification of Item No: 16.63, page No - 847 in General specification DSR VOL-2 for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.

The rate shall be for a unit of Cubic Meter.

Item No.33: Brick work using common burnt clay building bricks having crushing strength not less than 35 kg/Sq.Cm. in foundation, plinth and superstructure in Cement Mortar 1:6 (1-Cement : 6 -fine sand) (B) Conventional, For all floor

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant approved by EIC/ Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete as per relevant specification of Item No: 6.13 (b) + 6.20, page No -44/46 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.

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

Item No.34: Masonry work with aerated light weight concrete Blocks of any size, having crushing strength @ 35 kg/sqcm Fixing with ready-mixed mortar ('Fixoblock' of M/s Ultratech cement Ltd./Rapid Fix/Lion) having tensile adhesion strength >0.8 N/mm² and compressive strength of >2N/mm². The mortar is to be fixed in a thickness of 3mm to 5mm on the clean and leveled surface of block masonry using proper trowel. For all floor and lead and lift For superstructure.

1. General:

- This work shall consist of furnishing and placing the Masonry work using light weight Autoclaved cellular (Aerated) concrete block having crushing strength not less than 40 kg/sqcm and density in oven dry condition between 551 to 650 Kg/cum for super structure above plinth level up to floor two level in cement mortar 1:4 (1 cement: 4 fine sand) of the shape and dimension shown in the drawings and conforming to these specification and approved by Architects / Engineer In Charge.

2. Terminology

- Autoclaved - Steam curing of concrete products, sand-lime bricks, asbestos cement products, hydrous calcium silicate insulation products, or cement in an autoclave at maximum ambient temperatures generally between 170 and 215°C.
- Block- A concrete masonry unit, any one of the external dimensions of which is greater than the corresponding dimension of a brick as specified in IS: 3952-1978, and of such size and mass as to permit it to be handled by one man. Furthermore, to avoid confusion with slabs and panels, the height of the block shall not exceed either its length or six times its width.
- Block Density- The density calculated by dividing the mass of a block by the overall volume, including holes or cavities and end recess. The density of the material shall be between 551 to 650 Kg/cum.

- Drying Shrinkage-The difference between the length of specimen which has been immersed in water and then subsequently dried to constant length, all under specified conditions; expressed as a percentage of the dry length of the specimen, The drying shrinkage shall be determined in the manner described in IS : 6441 (Part-2)-1972.

3. Dimensions and tolerances

- Concrete masonry building units shall be made in sizes and shapes to fit different construction needs. The nominal dimensions of the concrete block shall be as follows:
- Length 400,500 or 600 mm
- Height 200,250 or 300 mm
- Width 100, 150, 200 or 250 mm
- The maximum variation in the length of the units shall not be more than ± 5 mm and the maximum variation in the height and width of unit, not more than ± 3 mm.
- Subject to the tolerances specified, the faces of the masonry units shall be flat and rectangular, opposite faces shall be parallel, and all arises shall be square. The bedding surface shall be at right angles to the faces of the block.

4. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One cubic meter.

Item No.35: Providing 10mm.Thick cement plaster in single coat on ceiling and soffit for plastering upto any level finished even and smooth in [I]Cement mortar 1:3 (1 cement : 3 fine sand) Work complete including all type of scaffolding , tools, tackles etc complete.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No: 17.58.(I), page No -104 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one square meter.

Item No.36: Providing 20 mm thick double coat mala cement plaster on interior and external brick / concrete work for plastering comprising of base coat of 12 mm thick cement plaster in cement mortar (1 Cement : 4 coarse sand) in rough finishing and 8 mm thick top coat of cement mortar 1:2 (1 Cement : 2 Coarse sand) finished with trowel including scaffolding, curing, tools, tackles etc complete.

1. Material:

- Cement and sand shall be used for mortar of Double coat mala plaster work as per approved sample and confirming to relevant IS codes and approved by Employer's representative/employer
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer

2. Workmanship:

- Wooden bullies, bamboos, planks, trestles and other scaffolding shall be sound. These shall be properly examined before erection and use. Stage scaffolding shall be provided for ceiling plaster which shall be independent of the walls.
- Preparation of back-ground :
- The surface shall be cleaned of all dust, loose mortar droppings, traces of algae, efflorescence and other foreign matter by water or by brushing. Smooth surface shall be toughened by wire brushing if it is not hard and by hacking if it is hard. In case of concrete surface, if a chemical retarded has been applied to the form work, the surface shall be roughened by wire brushing and all the resulting dust and loose particles cleaned off and care shall be taken that none of the readers if left on the surface. Trimming of projections on brick/concrete surfaces where necessary shall be carried out to get an even surface.
- Raking of joints in case of masonry where necessary shall be allowed to dry out for sufficient period before carrying out the plaster work.
- The work shall not be soaked but only damped evenly before applying the plaster. If the surface becomes dry, such area shall be moistened again.
- For external plaster, the plastering operation shall be started from top floor and carried downwards. For internal plaster, the plastering operations may be-started wherever the building frame and cladding work are ready and the temporary supports of the ceiling resting on the wall of the floor have been removed. Ceiling plaster shall be completed before starting plaster to walls.
- Application of plaster:
- The plaster about 15x15 cms. Shall be first applied horizontally and vertically at not more than 2 meters intervals over the entire surface to serve as gauge. The surfaces of these gauges shall be truly in plane of the finished plastered surface. The mortar shall then be applied in uniform surface slightly more than the specified thickness, then brought to a true surface by working a wooden straight edge reaching across the gauges with small upward and sideways movements at a time. Finally, the surface shall be finished off true with a trowel or wooden float according as a smooth or a smooth or a sandy granular texture is required Excessive troweling or overworking the float shall be avoided. All corners, arises, angles and junctions shall be truly vertical or horizontal as the case may

be and shall be carefully finished. Hounding or chamfering, corners, arises junctions etc. shall be carried out with proper templates to be size required.

- Cement plaster shall be used within half an hour after addition of water. And mortar or plaster which is partially set shall be rejected and removed forthwith from the site.
- In suspending the work at the end of the day, the plaster shall be left out clean to the line both horizontally and vertically, when recommencing the plaster, the edges of the old work shall be scraped clean and wetted with cement putty before plaster is applied to the adjacent areas to enable the two to properly join together. Plastering work shall be closed at the end of the day on the body of the wall and nearer than 15 cm. to any corners or arises. It shall not be closed on the body of features such as plaster bands and cornices not at the corners or arises. Horizontal joints in plaster work shall not also occur on parapet tops and copings as these invariably lead to leakage. No portion of the surface shall be left out initially to be packed up later on.
- Each coat shall be kept damp continuously till the next coat is applied or for a minimum period of 7 days. Moistening shall commence as soon as plaster is hardened sufficiently. Soaking of walls shall be avoided and only as much water as can be readily absorbed shall be used, excessive evaporation on the sunny or windward side of building in hot air or dry weather shall be prevented by hanging matting or gunny bags on the outside of the plaster and keeping them wet.
- Proportion and thickness and cement mortar as per above specification work.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Square meter.

Item No.37: Providing 15mm thick cement plaster in single coat on Rough (Similar) side of single or half brick walls/RCC for plastering any level and finished even in Cement mortar 1:4 (1-cement :4-sand) Work complete including all type of scaffolding , tools, tackles etc complete.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Item No: 17.61(ii), page No -106 in General specification R & B booklet for building works. Work shall be carried out of 15mm thick plaster instead of 20mm.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.

- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one square meter

Item No.38: Providing and applying external finish of average 2 to 2.5mm thick acrylic polymer based texture and pattern with standard tool and applicator as specified by manufacturer on exterior surfaces at all heights including scaffolding to give even shades including thoroughly brushing the surfaces free from mortar dropping and other foreign matter and sand paper smoothed etc. complete as per the manufacture specifications and up to the satisfaction of Engineer in-charge/ Architect. The rate includes making of grooves, pattas and finishing as directed by Architect/ EIC. Paint shall be measured and paid in seperate tender item. (Item should be executed by approved applicator only.)

1. Material:

- Acrylic polymer based texture and pattern shall be used as per sample approved by EIC/Architect.
- All type of material shall be used for work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Scaffolding: Wherever scaffolding is necessary it shall be erected in such a way that as far as possible on part of scaffolding shall rest against the surface to be color washed. A properly secured strong and well tied suspended platform (Zoola) may be used for painting. Where ladders are used, pieces of old gunny bag shall be tied at top and bottom to prevent scratches to the floors and walls. For paint of ceilings proper stage scaffolding shall be erected where necessary.
- Preparation of surface: The substrate must be sound, clean, dry, free from dust, oil, grease and laitance etc. All traces of release agents must be removed. On chalky and dusty surfaces, all loose material must be removed by stiff bristle brushing. The primer / paint application is to be done with the rollers. Rate shall be including crack filling and leveling as per manufacturer's specification.
- Application: Wall painting two coats with low VOC Jota shield Tax Ultra of Jotun or equivalent approved brand in any shades and color as directed on wall surface to give an even shade including applying of a one coat of Penetrating primer or equivalent and two coats of paint, scaffolding to at any height with all labor and material thoroughly brushing the surface free from mortar droppings and other foreign matter and sand prepared smooth etc. complete.
- Precautions: Splashes on floors etc. shall be cleaned out without delay as they will be difficult to remove after hardening. Washing of surfaces treated with Paints shall not be done within 3to4weeks of application.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Rate shall be including crack filling and leveling as per manufacturer's specification.
- 1) Low VOC content. 2) Crack Bridging ability up to 2.6 mm. 3) 100% pure acrylic

emulsion

- 4) Anti-Carbonation concrete protection 5) Very Low Flame spread 6) Superior Wash ability.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors.
- Area shall be measured & paid in Square Meter.

Item No.39: Providing and fixing G.I. hexagonal chickenmesh of size 16 x24 of 22 gauge at junction of concrete and brick work or between different materials after making "V" groove between two different material surface and filled with rich cement mortar and @ 100mm on each side of surfaces including necessary "U" nails / screws / washers with cleats for fixing, overlaps, scaffolding at all floors / all levels / all heights / all shapes etc. complete as per drawing / specifications and direction of Engineer-in-charge. For civil, plumbing, electrical & infrastructure works.

1. Material:

- The G.I chicken mesh material as per approved sample by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete including all necessary material, tools, tackles etc.
- Work should be carried out all RCC, masonry joints at any height and instruction of EIC/ Architect
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of Square Meter.

Item No.40: Providing and laying six courses water proofing treatment with bitumen felt over roofs consisting of first, third and fifth course of blown bitumen 85/25 or 90/15 conforming to IS : 702 applied hot @ 1.45, 1.20 and 1.45 Kg per square metre of area respectively, second and fourth courses of roofing felt type 3 grade I conforming to IS : 1322 (Hessian based self finished

bitumen felt) , sixth and final course of stone grit 6 mm and down size or pea sized gravel spread at 6 cubic decimeter per sqm including preparation of surface but excluding grading, complete.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant approved by EIC/Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- Work complete as per relevant specification of Item No: 22.8, page No -1176 in General specification DSR VOL-2 for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of Square Meter.

Item No.41: "Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying :

(a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours. (b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry."

1. Materials:

- Cementations repair mortar (Decorate CWP or equivalent) shall be used for Cementations Waterproofing System as per approval by EIC/Architect.
- All type of material shall be used for waterproofing as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Remove all loose material, grease, oil, dust etc. from the surface on which the treatment is to be done.
- All Vertical pipe penetrations must be firmly grouted and an angle fillet must be formed around it.
- Spilled concrete or other material should be cut back to sound concrete and made good with suitable Cementations repair mortar (Deucrete CWP or equivalent). 2 : 3 Coat Cementations Waterproofing System (Primer + 2 Coats) (Deucrete CWP, Pidilite , Bal Endure or Equivalent) Once the surface is prepared as per the requirement, Damp down the concrete surface with clean water. 2. Whilst damp, but free from standing water,

apply using a short, stiff bristle brush or roller. For heavy 6-10 mm depressions, etc. use less gauging liquid and mix to the desired consistency. 3. A first primer coat of waterproofing chemical Deucrete CWP (or Equivalent), mixed with water, cement and sand in the ratio of 1:1:1:1 is applied to the floor and walls.

- After the primer coat dries, a second coat with the ratio of 1:1:1 (Deucrete CWP/Pidilite/BAL Endure: Cement: Sand) is applied at an average consumption of waterproofing material at 2 Kg/M².
- Once the second coat is dry, Third coat is applied at the same rate and ratio. Ponding Test 1. Once
- The Waterproofing work is finished and dried (confirmed by the site supervisor), ponding test must be conducted by filling the entire wet area with water. 2. Once ponding test is certified with absence of any kind of leakage or dampness, further work must be commenced. Work complete including all type of tools, tackles, scaffolding etc complete at any level and height.
- Work complete including all necessary materials, tools, tackles etc. as per described above specification.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect.
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of Square Meter.

Item No.42: Providing and laying broken chine mosaic flooring for terrace using 12 mm to 20 mm broken pieces of glazed tiles to be laid over cement mortar 1:3 to plain or slope and to be tempered to bring mortar creme out upto surface using white cement including rounding off junctions and extending them upto 15 cm along the wall,clearing with water and oxalic acid etc. as directed.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete as per relevant specification of Item No: 14.21(B), page No -82 in General specification R & B booklet for building works. Work shall be carried out of 12mm to 20mm broken pieces of glazed tiles instead of marble chips.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one square meter.

Item No.43 : Water proof plaster : Providing 15 mm thick water proof cement plaster in single coat on brick/ block masonry or RCC wall, at all heights, finished even and smooth in CM 1:3 (1 cement : 3 sand) including providing and mixing water proofing materials of approved make in recommended proportions by manufacturer and as directed by Engineer-in-charge and finishing the surface wired finish to receive the tiles/ smooth finish with a floating coat of neat cement slurry at 2.75 Kg/ sqm etc. complete at floor

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant approved by EIC/ Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete as per relevant specification of Item No: 17.61(I), page No -106 in General specification R & B booklet for building works. Work shall be carried out for 15mm in cm 1:3 instead of

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one square meter.

Item No.44 : Vitrified Flooring : 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 finised with flush pointing & cleaning the surface etc. complete for light shade

1. Material:

- 10 mm thick Vitrified tiles shall be used and as per sample approved by EIC/ Architect.
- Epoxy grouting shall be used of Laticrete or equivalent approved material by EIC/ Architect.
- All type of material shall be used for flooring work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Bedding:
- Bedding shall be cleaned, wetted and mopped. The bedding shall then be laid evenly over the surface tamped and corrected to desired level and allowed to harden enough to offer a rigid cushion to tiles and to enable the monsoon to place wooden planks across and squat on it.
- The Vitrified tiles shall be laid on cement mortar bedding of 20 mm. thick in CM.1:6. The mortar shall have sufficient plasticity for laying and there shall be no hard lumps that would interfere with the evenness of bedding. The bedding shall be cleared and well wetted. The mortar shall then be spread in thickness not less than 20 mm. at any place and average 20 mm thickness. The proportion of the cement mortar shall be as specified in the item.
- Fixing tiles:
- The tiles before laying shall be soaked in water for at least two hours. Neat grey cement grout at 33 kg/Cement/Sqmt. of honey like consistency shall be spread over the mortar bedding as directed. The edges of the tiles shall be smeared with neat cement slurry.
- The tiles shall be well pressed and gently tapped with a wooden mallet till they are properly bedded and in level with the adjoining tiles. There shall be no hollows in bed or joints. The joints between the tiles shall be as in straight line or as per pattern as per detailed drawing.
- The tiles shall not have staggered joints. The joints shall be true to centre line both ways. The Nahni trap coming in the flooring shall be so positioned that its grating shall replace only one tile as far as possible. Where full size tiles cannot be fixed they shall be cut (Swan) to the required size and the edges rubbed smooth to ensure straight and true joints. The joints shall be filled with laticrete grouting with wire brush or trowel to a depth of 6 mm. and loose material removed. Laticrete shall be used for pointing the joints. After fixing the tiles finally in an even plane the flooring shall be kept wet and allowed to nature undisturbed for 7 days.
- Cleaning:
- The surplus grouting material that may have come out of the joints shall be cleaned off before it sets. Once the floor has set, it shall be carefully washed, cleared and dried. Proper precautions and measures shall be taken to ensure that the tiles are not damaged in any way till the completion of the construction.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured in square meter for visible area of work done. The length and width of the flooring shall be measured between the faces of Skirting or dado or plastered face of wall as the case may be. The paving under dado or skirting shall not

be measured. No deduction shall be made not extra paid for any opening in the floor of area up to 0.1 sqmt. Nothing extra shall be paid for laying the floors at different levels in the same rooms.

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

Item No.45 : 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 finised with flush pointing & cleaning the surface etc. complete for antiskit

1. Material:

- 8 mm thick Vitrified tiles shall be used and as per sample approved by EIC/Architect.
- Epoxy grouting shall be used of Laticrete or equivalent approved material by EIC/Architect.
- All type of material shall be used for flooring work as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- **Bedding:**
 - Bedding shall be cleaned, wetted and mopped. The bedding shall then be laid evenly over the surface tamped and corrected to desired level and allowed to harden enough to offer a rigid cushion to tiles and to enable the monsoon to place wooden planks across and squat on it.
 - The Vitrified tiles shall be laid on cement mortar bedding of 20 mm. thick in CM.1:6. The mortar shall have sufficient plasticity for laying and there shall be no hard lumps that would interfere with the evenness of bedding. The bedding shall be cleared and well wetted. The mortar shall then be spread in thickness not less than 20 mm. at any place and average 20 mm thickness. The proportion of the cement mortar shall be as specified in the item.
- **Fixing tiles:**
 - The tiles before laying shall be soaked in water for at least two hours. Neat grey cement grout at 33 kg/Cement/Sqmt. of honey like consistency shall be spread over the mortar bedding as directed. The edges of the tiles shall be smeared with neat cement slurry.
 - The tiles shall be well pressed and gently tapped with a wooden mallet till they are properly bedded and in level with the adjoining tiles.' There shall be no hollows in bed or joints. The joints between the tiles shall be as in straight line or as per pattern as per detailed drawing.
 - The tiles shall not have staggered joints. The joints shall be true to centre line both ways. The Nahni trap coming in the flooring shall be so positioned that its grating shall replace only one tile as far as possible. Where full size tiles cannot be fixed they shall be cut (Swan) to the required size and the edges rubbed smooth to ensure straight and true joints. The joints shall be filled with laticrete grouting with wire brush or trowel to a depth of 6 mm. and loose material removed. Laticrete shall be used for pointing the

joints. After fixing the tiles finally in an even plane the flooring shall be kept wet and allowed to nature undisturbed for 7 days.

- **Cleaning:**
- The surplus grouting material that may have come out of the joints shall be cleaned off before it sets. Once the floor has set, it shall be carefully washed, cleared and dried. Proper precautions and measures shall be taken to ensure that the tiles are not damaged in any way till the completion of the construction.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.

The work done shall be measured in square meter for visible area of work done. The length and width of the flooring shall be measured between the faces of Skirting or dedo or plastered face of wall as the case may be. The paving under dedo or skirting shall not be measured. No deduction shall be made not extra paid for any opening in the floor of area Up to 0.1 sqmt. Nothing extra shall be paid for laying the floors at different levels in the same rooms. The rate shall be for a unit of one square meter.

Item No.46: Providing and laying Vitrified tiles 8 to 10 mm thick , in skirting risers of steps and dedo on 10mm thick cement plaster 1:3 (1-cement : 3-coarse sand) and jointed with white cement slurry.

1. Materials:

- Vitrified tiles shall be used as per sample approved by EIC/ Architect.
- Epoxy grouting shall be used of Laticrete or equivalent approved material by EIC/ Architect.
- All type of material shall be used for flooring work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- The relevant specifications of item No. 14.32 page no. 84 shall be followed except that the tiles shall be fixed for risers of steps, dado or skirting in C.M. 1:3 shall be done.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.

- The work done shall be measured and paid in one square meter.

Item No.47: Providing and laying Granite slab (16 to 18 mm thick) one side polished flooring over 20 mm (average) base of cement mortar 1:6 (1 cement : 6 coarse sand) or L.M. 1:1.5 laid and jointed with grey cement slurry including rubbing & polishing complete, The work shall be carried out as per the approval of architect and engineer-in-charge. for all floors.

1. Material:

- 18 mm thick Granite with finish shall be used as per sample approved by EIC/ Architect.
- Matching Pigment shall be used of approved material by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes 1134- 1974 and approved by EIC/ Architect.

2. Workmanship:

- **Dressing of slabs:** stone shall be cut to require size and fine chisel dressed to give a smooth and even surface on all sides to full depth. A straight edge laid along the sides of the stone shall be fully in contact with it Chisel dressing shall also be done on top surface to remove any waviness. The sides and top surface of marble slabs shall be machined rubbed or table rubbed with coarse sand before using. All angles and edges or slabs shall be true, square and free from chipping. The thickness of stone shall be 18 mm. The allowable tolerance shall be 2 mm. allowable. The 'tolerance shall + 5 mm. in length and breadth.
- **Bedding:** Granite slab shall be laid on Bedding of cement mortar 1:6 (1 cement: 6 coarse sand) of including 35mm to 70 mm thick (Average thickness 50 mm) as given in description of item.
- **Laying:** The surface of sub-grade shall be cleared, wetted and mopped. Mortar of specified mix and thickness shall then be spread on an area sufficient to receive one slab. The slab be washed clean before laying. It tie laid on top pressed and tapped gently to bring it in level with other slabs. It shall then be lifted and a side. The top surface of the mortar shall then be corrected by adding fresh mortar at hollows, or depressions. The mortar shall then be allowed to harden it over this surface cement slurry or honey like consistency at 4.4 Kg. of cement per sq. meter. The edges of slabs already paved shall be buttered with gray cement. The slab shall then be gently placed in position and tapped with wooden mallet till it is properly bedded in level with and close to the adjoining slab. The joints shall be as fine as possible. Surplus cement on the surface of the slab shall be removed. The slab fixed in the floor adjoining the walls shall enter not less than 10 mm. under the plaster skirting or dedo. The junction between the walls and floors shall be finished neatly. The finished surface shall be true to level and slopes as directed. The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.

- No extra payment will be given for any of the reasons.
- The work done shall be measured in square meter for visible area of work done. The length and width of the flooring shall be measured between the faces of Skirting or dedo or plastered face of wall as the case may be. The paving under dedo or skirting shall not be measured.
- The rate shall be for a unit of one square meter.

Item No.48: As per above specification all work shall be done. For different kind of finishing like lapato/leather/thread or as per Architect suggestion

1. Workmanship

- For different kind of finishing like Lapato /leather /thread as per suggestion of EIC/Architect .Work complete including all type of finishing work.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured in square meter for visible area of work done.

Item No.49: Providing and laying 16 to18 mm thick polished Granite stone slab machine cut in single piece in risers of steps, dedo, pillar, sill and jambs or dedo laid on 10 mm thick cement mortar 1 : 3 (1 cement : 3 coarse sand) laid over and jointed with grey cement slurry incl. rubbing and polishing etc complete. The rate includes loding, unloding, scaffolding, wastage, making hole, cutting/ chasing, rounding champhering, edge polishing of edges. The work shall be carried out as per the approval of architect and engineer-in-charge. for all floors

1. Material:

- 18 mm thick Granite with finish shall be used as per Basic rate and sample approved by EIC/Architect.
- Epoxy adhesive shall be used of approved material by EIC/Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes 1134- 1974 and approved by EIC/Architect.
- Workmanship:
- Bedding: Granite slab shall be laid on Bedding on 16to18 mm thick cement mortar 1:3 (1 cement: 3 Fine sand) as given in description of item. The mortar shall have sufficient plasticity for laying and there shall be no hard lumps that would interfere with the evenness of bedding. The bedding shall be cleared and well wetted. The mortar shall then be spread in thickness not less than 10 mm. at any place and average 10 mm thickness. The proportion of the cement mortar shall be as specified in the item.
- Laying: The surface of sub-grade shall be cleared, wetted and mopped. Mortar of specified mix and thickness shall then be spread on an area sufficient to receive one slab. The slab be washed clean before laying. It tie laid on top pressed and tapped gently to bring it in level with other slabs. It shall then be lifted and a side. The top surface of the

mortar shall then be corrected by adding fresh mortar at hollows, or depressions. The mortar shall then be allowed to harden it over this surface cement slurry or honey like consistency at 3.3 Kg. of cement per sq. meter. The edges of slabs already paved shall be buttered with gray cement. The slab shall then be gently placed in position and tapped with wooden mallet till it is properly bedded in level with and close to the adjoining slab. The joints shall be as fine as possible. Surplus cement on the surface of the slab shall be removed. The slab fixed in the floor adjoining the walls shall enter not less than 10 mm. under the plaster skirting or dedo. The junction between the walls and floors shall be finished neatly. The finished surface shall be true to level and slopes as directed. The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one square meter.

Item No.50: Tactile : Providing and applying Tactile Polyurethane (PU) Flooring system of approved shade and design over the existing finished surface, including surface preparation, cleaning, grinding, and removal of dust, oil, or loose particles. The system shall comprise application of primer coat, base coat, and tactile PU topcoat with anti-slip finish to form tactile indicators (warning and directional tiles) for visually impaired persons, as per approved pattern and sample. Work includes all necessary surface levelling, repairing of undulations, masking, layout marking, and application using manufacturer's recommended tools and techniques to achieve a seamless, uniform, and durable tactile flooring.

1. Materials:

- Tactile shall be used as per sample approved by EIC/ Architect.
- All type of material shall be used for flooring work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one Square meter.

Item No.51: Wash Basin Basin Counter/Granite Platform (All Floor : Width - 600 mm) : Providing and constructing approved shade and sample of Mirror finish granite platform , 600mm width 25 mm thick Machine polished kotah stone as vertical supports at sides,including cutting granite & kotah as per required shape , dedo 1'6" ht & size to fit kitchen sink, moulding, tiles adhesive nosing, chamfered front edges, fixing, disposal of debris etc complete with all labour and materials and as per detailed drawings / architects instruction and approval by Engineer-in-charge. The sample mock shall be approved from Employer's representative/ Employer.

1. Materials:

- Granite shall be used as per Basic rate is Rs. 150 /Sq.Ft and sample approved by EIC/Architect.
- Tile adhesive and Pigments shall be used of as per approved by EIC/ Architect.
- All type of material shall be used for basin counter work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Two layers of wash basin counter, first layer using 25mm thick Kota stone of approved shade and second layer using approved shade and sample of Mirror finish Granite, joined together with 1:4 Cement mortar bedding / approved tile adhesive, to true plane & level or to slopes, or close jointed with cement slurry with pigment of matching shade and color and finishing with the same, Work including dedo 1'6" ht , cutting kota & tile as per required shape & size to fit Wash basin,& 3" to 9" face with molding, nosing, chamfered front edges, fixing. Disposal of debris etc.
- Work complete including all type of joining material, tools, tackles, with finishing, proper even surface etc. as per specification and suggestion.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of Square Meter.

Item No.52: Kerb Stone : Providing and fixing pre-cast concrete kerb stone of gray cement based concrete block 30cm length,30cm height and 15cm thick of M250 grade concret as per approved design and including excavation for fixing in proper line and level,filling the joint with C:M 1:3 (1 cement : 3 fine sand) etc complete.

1. Material:

- Kerb stone shall be used and sample approved by EIC/ Architect.
- All type of material shall be used for work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- The sub base, either PCC or other shall be properly cleaned, leveled and prepared to lay the paver blocks.
- The blocks shall be fixed as per approved design, pattern and detailed drawing.
- The pre-cast blocks shall be fixed by the skilled and experience laborers' only.
- Necessary cutting of blocks as required shall be done without any extra cost at edges, ends of walls as per site conditions.
- No extra cost shall be paid for wastage.
- After laying the blocks the finished job shall be thoroughly compacted/vibrated by means of mechanical vibration.
- If any settlement /dislocation is found after vibration, the same will be got rectified without any extra cost.
- After completion of the work the pavements shall be made neat and clean.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour,etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of Running Meter

Item No.53: Providing and fixing pre-cast Rubber Dye / steel Dye inter locking concrete block 60mm thick with grade of concrete M300 pneumatic compressed / vibrated mechanically and as per approved design Confirming to IS 15658 : 2006 including 35 mm Sand layer for levelling and filling the joint with sand in proper line and level as per guidelines of IRC : SP 63-2018 etc. Complete.

1. Material

- Rubber Dye inter locking concrete block shall be used and sample approved by EIC/Architect.
- All type of material shall be used for work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- The sub base, either PCC or other shall be properly cleaned, leveled and prepared to lay the paver blocks.
- The blocks shall be fixed as per approved design, pattern and detailed drawing.
- The interlocking blocks shall be fixed by the skilled and experience laborers' only.
- Necessary cutting of blocks as required shall be done without any extra cost at edges, ends of walls as per site conditions.
- No extra cost shall be paid for wastage.
- After laying the blocks the finished job shall be thoroughly compacted/vibrated by means of mechanical vibration.

- If any settlement /dislocation is found after vibration, the same will be got rectified without any extra cost.
- After completion of the work the pavements shall be made neat and clean.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one Square meter.
- Any opening /chamber whose area is more than 0.25 square meter shall be deducted.

Item No.54: Gypsum Ceiling : Providing and fixing single layer water proof gypsum board 12.5 mm thick sections using water proof board of size 1220 mm x 1830 mm x 8.0 mm suspended by GI suspender channel of size 25 mm x 3 mm with intermediate channel of size 18 mm x 40 mm x 0.8 mm at 1220 mm center to center ceiling section of size 40 mm x 35 mm x 0.55 mm at 457 mm c/c and perimeter channel A of size 20 mm x 27 mm x 30 mm x 0.5 mm at edges & drops incl. paper tap sand soffit cleat, anchor fastener, scotch bolt connecting cleat, joining compound top coat on ceiling incl. making necy. opening for light fitting, diffuser etc. comp. as per detail drawing as directed.

1. Workmanship:

- Water Proof Gypsum board shall be used as per approved make and sample by Employer / Employer's representative.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Employer / Employer's representative.
- Work complete as per above manufacturers specification.
- Work complete including all type of tools, tackles, scaffolding etc complete at any level and height
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer / Employer's representative.
- The relevant specification for this item shall be followed as per Item Description and instruction given by Engineer in charge.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall be for a unit of One Square Meter.

Item No.55: Wooden ceiling finish with veneer : Providing and fixing IS 710 12 mm thick plywood false ceiling as per drawing & instruction of EIC & sample approved (complete with frame work). finish with 4 mm th veneer gurjan base ply Semi glossy PU finish polish. Plywood shall be fixed with required fabrication work and ply frame work with all necessary accessories Rate shall include cost of making of all cutouts for light fixtures, gadgets, gizmo, pelmets,

grooves, beads and also provide support/template where ever required, The rate shall be in sq.mt for all floors and at all heights including all costs the shop drawing (or a sample mock of 5 Sqm minimum of the frame work and ceiling) shall be approved from EIC. 5mm Groove shall be provided at the junction of the false ceiling & the wall. (considering all levels with require all fabricataion work and fitting from MS Truss / RCC slab to false ceiling up to 2400 mm)

1. Material:

- 12 mm thick IS: 303 Commercial ply / MR grade Ply shall be used for wooden ceiling as per approved make and sample by Employer's representative/employer
- 4 mm thick veneer base ply shall be used for wooden ceiling as per approved make and sample by Employer's representative/employer
- Fabrication and ply frame shall be used as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer

2. Workmanship:

- Frame work shall be made by required fabrication and ply with necessary accessories complete. (RCC slab to false ceiling 100 to 1000 mm)
- 12 mm thick IS: 303 Commercial ply / MR grade ply shall be used for covering.
- Finishing: 4 mm thick veneer base ply matt PU finish polish.
- Work include cost of making of all cutouts for light fixtures, gadgets, gizmo, pelmets, grooves, beads and also provide support/template where ever required
- Work complete including all type of tools, tackles, scaffolding etc complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors.
- The work done shall be measured in square meter for area of work done. The rate shall be for a unit of one Square meter.

Item No.56: False 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 thick (minimum) sheet with the help of rawl plugs at 450mm centre to centre with 25mm long dry wall 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 prepainted 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% noncombustible 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

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.
- Fixtures and fastenings shall confirm M-43 of GTS Booklet for building works.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete as per relevant specification of General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour,etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one square meter.

Item No.57: GRC WORK : Providing & fixing architectural moldings profiles and other decorative elements made out of GRC (Glass Fibre reinforced Cement) in required shape, size & thickness all as per manufacturers specifications, such as all decorative articles should be made by using high power spray machine, using AR Glass fiber with minimum ZrO2 16% including necessary scaffoldings for all heights, as per approved drawings and reference

images. GRC elements thickness shall be 12-15 mm. fixing edges will be 40 TO 50 MM GRC Elements shall be fixed on RCC Structure/Brick Work/ Primary Steel Structure (MS with protective coat of Red oxide/Zinc Primer Shall be Used). Hilti make GI Screw Fastners or equivalent, GI Thread Rods and MS cleats shall be used for fixing of GRC elements on RCC/MS Primary fabricated structure. Joints shall be filled with PU sealants/ base material of GRC as and where required. The quote rate shall be inclusive of all design, & shop drawing and sample mock of all elements approval from Architect & consultant. Rate shall be inclusive of all required fabrication work for fixing only primary structure shall be provided as base structure only as per requirement. Mode and method of measurement shall be in accordance with IS: 1200.a) GRC Columns: as per specification work (Elevation area- At any height)

1. Material:

- GRC Work (Glass Fibre reinforced Cement) used as per sample approved by EIC/Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes 1134- 1974 and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per as described above specification.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- GRC Element Thickness is 12-15mm.
- The rate shall include the cost of all materials, finishing, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors. Clear opening area shall be measured & paid in Nos.

Item No.58: GRC WORK : Providing & fixing architectural moldings profiles and other decorative elements made out of GRC (Glass Fibre reinforced Cement) in required shape, size & thickness all as per manufacturers specifications, such as all decorative articles should be made by using high power spray machine, using AR Glass fiber with minimum ZrO₂ 16% including necessary scaffoldings for all heights, as per approved drawings and reference images. GRC elements thickness shall be 12-15 mm. fixing edges will be 40 TO 50 MM GRC Elements shall be fixed on RCC Structure/Brick Work/ Primary Steel Structure (MS with protective coat of Red oxide/Zinc Primer Shall be Used). Hilti make GI Screw Fastners or equivalent, GI Thread Rods and MS cleats shall be used for fixing of GRC elements on RCC/MS Primary fabricated structure. Joints shall be filled with PU sealants/ base material of GRC as and where required. The quote rate shall be inclusive of all design, & shop drawing and sample mock of all elements approval from Architect & consultant. Rate shall be inclusive of all required fabrication work for fixing only primary structure shall be provided as base structure only as per requirement. Mode and method of measurement shall be in accordance with IS: 1200.a) GRC CORNICE FINISH WITH GRC BEND-as per above specification work.(Elevation area)

1. Material:

- CORNICE FINISH WITH GRC BEND used as per sample approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes 1134- 1974 and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per as described above specification.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors.
- Clear opening area shall be measured & paid in Running meter.

Item No.59: GRC WORK : Providing & fixing architectural moldings profiles and other decorative elements made out of GRC (Glass Fibre reinforced Cement) in required shape, size & thickness all as per manufacturers specifications, such as all decorative articles should be made by using high power spray machine, using AR Glass fiber with minimum ZrO₂ 16% including necessary scaffoldings for all heights, as per approved drawings and reference images. GRC elements thickness shall be 12-15 mm. fixing edges will be 40 TO 50 MM GRC Elements shall be fixed on RCC Structure/Brick Work/ Primary Steel Structure (MS with protective coat of Red oxide/Zinc Primer Shall be Used). Hilti make GI Screw Fastners or equivalent, GI Thread Rods and MS cleats shall be used for fixing of GRC elements on RCC/MS Primary fabricated structure. Joints shall be filled with PU sealants/ base material of GRC as and where required. The quote rate shall be inclusive of all design, & shop drawing and sample mock of all elements approval from Architect & consultant. Rate shall be inclusive of all required fabrication work for fixing only primary strcure shall be provided as base structre only as per requirement. Mode and method of measurement shall be in accordance with IS: 1200.a) GRC JALI-As per above specification work.(Elevation area)

1. Material:

- GRC Jali Work (Glass Fibre reinforced Cement) used as per sample approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes 1134- 1974 and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per as described above specification.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- GRC Element Thickness is 12-15mm.
- The rate shall include the cost of all materials, finishing, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors.
- Clear opening area shall be measured & paid in Square Meter

Item No.60: Acoustic Fabric panelleing : Providing and supplying Armstrong/himaliay/Autumn or equivalent as per Approved by Architect/EIC 'Optra Acoustical Wall Paneling' with square edges made of fibre glass substrate 25mm thick and wrapped on the front side with an acoustically transparent and classified for Fire reaction Class B-s1, d1 as per EN13501, fabric with an option of colors - Ivory, Orange, Pista Green, Straw Gold, Rustic Green, Burgundy, Rust, Peacock Blue, Ash Grey, Mocha as per the choice of the Architect of size 600X1200 mm providing a minimum sound absorption level of 0.90 NRC to be affixed to wall using Wall panel impalers supplied by Approved make and construction adhesives as per the instructions laid down by the manufacturer. INSTALLATION : 4nos. make as per Approved by Architect/EIC, wall panel Impalers of shall be fixed to the wall surface using self tapping screws. Silica based construction adhesive to be dabbed on to the projecting elements (spikes) of the impalers. Optra wall panels shall be pierced through the spikes of the impalers ensuring the line and level of the panels are maintained. Installation to be carried out by approved make Trained Installation team & Installation should be carried out as per Armstrong or equivalent and approved make recommended procedure. Warranty Certificate and Test Reports for NRC and Fire rating shall be provided by Vendor.

1. Material:

- Acoustic panel board for paneling shall be used as per approved make and sample by EIC/Architect.
- FR fabric shall be used as approved make and sample by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Installation: Acoustical infill material of 25 mm Synth manufactured by approved equivalent make directly between wooden frame Synth shall be held in position by using adhesive tape Providing and Fixing vinyl grippers directly on plywood base approx. at 1200mm centers by using pneumatic stapler or suitable metal fasteners as per manufacturers specifications. Vinyl grippers must have base tapes for better grip.
- Providing and fixing wood wool board Sound Smooth of size 600 x 1200 mm providing a minimum sound absorption level of 0.90 NRC to be affixed to wall using Wall panel
- Supplying and laying FR grade fabric (for 54" wide) then cut into required size and shape. and stretched, inserted inside the gripper by using tools recommended by manufacturer Rate shall include cost of making of all cut-outs for light fixtures, switchboards gadgets,

gizmo, pelmets, grooves, beads cut out as per EIC instruction at site.

- Paneling should be in complete level without any variation and deviation. There shall be no tolerance in regard to wall finish. Wherever required proper framing has to be executed to make the surface level.
- Work complete including all type of tools, tackles, scaffolding etc. complete at any level and height
- Work complete as per above manufacturers specification.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc. for fixing at all heights and for all floors.
- Only the clear elevation area of the fabric shall be measured and paid. 3rd Party certificate for performance is required to be submitted for the proposed and installed system. Contractor shall submit system application certificate from the manufacturer
- The work done shall be measured in square meter for area of work done. The rate shall be for a unit of one square meter.

Item No.61: Providing and fixing of approved quality roller blinds using phifer or equivalent fabric of premium grade, with roller tube, bottom bar leveller made of extruded aluminium alloy an Idler, Insert Type- Brackets, PVC chain etc. all complete at all floor and heights as per approved specification. Roller Tube Control, Clutch, Idler Side by side or single Roller Tube of extruded Aluminium 38mm inner dia - 41mm outer dia minimum wall thickness of 1.6mm. Roller blind - roller blind fabric should be made up of 35% FibreGlass, 65% PVC, it should have specific low emissivity treatment and lead free with Greenguard gold certification. It should have 3% to 5% openness, fabric thickness should be 0.43 mm, mesh weight approx 400 gms/ sqmtr. It should cut UV rays, with antimicrobial properties preferably with Microban. The fabric should be Flame retardant and Lead Free. It should be GreenGuard certified with Gold Standard for low chemical emissions for indoor use. including all accessories, material, labour, installation etc..and complete the work satisfactorily as per instruction of architect or Engineer-in charge.

1. Material:

- Phifer fabric of premium grade as per selection of EIC/ Architect.
- Roller tube, bottom bar leveller made of extruded aluminium alloy an Idler, Insert Type- Brackets, PVC chain etc.
- Roller Tube Control, Clutch, Idler Side by side or single Roller Tube of extruded Aluminium 38mm inner dia - 41mm outer dia minimum wall thickness of 1.6mm. Roller blind

2. Workmanship:

- Entire work to be carried out as per drawings, instructions and supervision of the architect
- Work complete including all type of tools, tackles, scaffolding etc complete at any level and height
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction EIC/ Architect.
- The relevant specification for this item shall be followed as per Item Description and instruction given by Engineer in charge.

3. Measurements:

- The rate shall be for a unit of One Square Meter.

Item No.62: Flush Door With WPC frame (37 MM) : Providing and fixing in position 35mm thick solid core wooden flush doors of approved make having fire retardant ply facing on both sides and finished with 1 mm thick laminate as approved , WPC frame size - 125 X 63 MM Well Quality Hardware system of Hinges , Boxer type door closer , Door handle , Euro profile , lock ,Door stop . work complete including all type of hardware, fittings , fixtures etc complete as per detailed drawings and specifications, sample mock shall be approved from EIC.

1. Material:

- 35 mm thick flush door shall be used as per sample approved by Employer's representative/employer
- Waterproof ply shall be used for door as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer
- WPC frame (125 X 63 mm) shall be used as per approved sample by Employer's representative/employer 8 mm thick milky glass shall be used as per approved sample by Employer's representative/employer
- 1 mm thick laminate shall be used for finish of door as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer Hardware shall use of as per approved by Employer's representative/employer
- All type of material shall be used for Door as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer.
- Flush door shall confirm M-30 of GTS Booklet for building works.
- Fixtures and fastenings shall confirm M-43 of GTS Booklet for building works.

2. Workmanship:

- Fixing of 35 mm thick solid core wooden single leaf flush doors of approved make having Waterproof ply facing on both sides as per approved sample.
- Fixing of WPC frame (125 x 63 mm) shall be used as per approved sample by Employer's representative/employer
- Fixing of Both side 1 mm thick laminate finishes as per selection.
- Fixing of Hardware system of Geze/Dorma like Hinges, Concealed door closer, Door handle, Euro profile, lock, Door stop as per selection work complete.
- All doors should be properly leveled without any sagging and with smooth opening and

closing. There should be no variation or deviation of any kinds.

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors. Clear opening area shall be measured & paid in Square meter.

Item No.63: Flush Door with frame and finish with 1mm thick Laminate (37MM): Providing and fixing in position 35 mm thick solid core wooden flush doors of approved make having fire retardant ply facing on both sides and finished with 1mm thick laminate as approved ,Indian Teak Wood Frame size - 125 X 75 MM, Single rebet , Well Quality Hardware system of Hinges , Boxer type door closer , Door handle , Euro profile , lock ,Door stop . work complete including all type of hardware, fittings , fixtures etc complete as per detailed drawings and specifications, sample mock shall be approved from EIC.

1. Material:

- 35 mm thick Single leaf flush door shall be used as per sample approved by Employer's representative/employer
- Teak wood frame shall be used as per approved sample by Employer's representative/employer
- Waterproof ply shall be used for door as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer
- Teak Veneer shall be used for finish of door as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer
- Hardware shall used of as per approved by Employer's representative/employer
- All type of material shall be used for Door as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer
- Flush door shall confirm M-30 of GTS Booklet for building works.
- Fixtures and fastenings shall confirm M-43 of GTS Booklet for building works.

2. Workmanship:

- Fixing of 35mm thick solid core wooden single leaf flush doors of approved make having Waterproof ply facing on both sides as per approved sample.
- Fixing of Teak wood frame (125 x 75 mm) shall be used as per approved sample by EMPLOYER'S REPRESENTATIVE/EMPLOYER/Architect
- Fixing of Both side veneer as per selection.
- Fixing of Hardware system of Geze/Dorma like Hinges, Concealed door closer, Door handle, Euro profile, lock, Door stop as per selection work complete.
- All doors should be properly leveled without any sagging and with smooth opening and closing. There should be no variation or deviation of any kinds.
- The whole work is to be completed as per design; sample material & any other

requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc. for fixing at all heights and for all floors. Clear opening area shall be measured & paid in Square meter.

Item No.64: Providing and fixing factory made upvc fenesta wooden colour sliding glazed window with Mosquito net and Approved sample by Architect/Client/EIC. all height dimension comprising of upvc multi chambered frame with in built roller track and sash extruded profiles duly reinforced with 1.60 + 0.2 mm thick galvanizd mild steel section made from roll forming process of required lenght (shape & size according to upvc profile), appropriate dimension of upvc extruded glazing beads and upvc extruded interlocks, epdm gasket,wool pile,zinc alloy (white powder coated) touch locks with hook,zinc alloy body with single nylon rollers (weight bearing capacity to be 40 kg),g.i. fasteners 100 x 8 mm size for fixing frame to finished wall and necessary stainless steel screws etc. profile of frame & sash shall be mitred cut and fusion welded at all corners,including drilling of holes for fixing hardware's and drainage of water etc. after fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality,all complete as per approved drawing & direction of engineer-in-charge. three track three panels sliding window of 5 mm thick toughen glass and series 2000 frame 65 x 58 mm & sash 45 x 90 mm both having wall thickness of 1.9+ 0.2 mm and single glazing bead of appropriate dimension.

1. Material:

- Upvc section shall be used as per sample approved by EIC/ Architect.
- 5 mm thick transparent bronze color tinted float glass shall be used as per sample approved by EIC/ Architect.
- All type of material shall be used for work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.
- Aluminum window shall confirm M-31 of GTS Booklet for building works.
- Fixtures and fastenings shall confirm M-43 of GTS Booklet for building works.
- Frame and sash: Specify dimensions, such as 60mm×58mm60 mm cross 58 mm
- for the frame and 78mm×60mm78 mm cross 60 mm for the shutter.
- Multi-chambered design: For improved thermal and acoustic insulation.
- Reinforcement: A galvanized mild steel section of a specified thickness 1.9 ± 0.2 mm 1.6 plus or minus 0.2 mm must be used to reinforce the uPVC profiles.
- Gaskets: EPDM gaskets are standard.
- Fasteners: Stainless steel fasteners (SS 304 grade) for frames, typically 100×8mm
- Rollers: For sliding windows, specify stainless steel rollers with a high load-bearing capacity 40kg.
- Locks: Specify the type of lock, e.g., a multi-point locking system with a zinc alloy handle and a crescent lock on extreme panels.
- Screws: Stainless steel screws should be used for all fixings.

2. Workmanship:

- Work complete as per as described above specification.
- Profile finishing: Frames and sashes are to be mitred cut and fusion welded at all corners.
- Sealing: The gap between the frame and the finished wall must be filled with approved weatherproof silicon sealant over a backer rod.
- Drilling: Ensure holes for hardware and drainage are correctly drilled as per the design.
- Other materials: Include the use of plastic packers and caps as needed for proper installation.
- Work should be properly leveled without any sagging and with smooth opening and closing. There should be no variation or deviation of any kinds.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc. for fixing at all heights and for all floors. Clear opening area shall be measured & paid in Square meter.

Item No.65: Providing and fixing standard extruded of aluminium section of size 63mm x 38.10mm x 1.2mm (Jindal Section:2434, @ Wt. 0.643 Kg/mt) with colour Powder Coated aluminium frame for ventilation with 5mm thick frosted glass as details etc complete for Ventilation

1. Material:

- Aluminum section shall be used as per sample approved by EIC/ Architect.
- 5 mm thick frosted glass shall be used as per sample approved by EIC/ Architect.
- Hardware and accessories shall be used as per sample approved by EIC/ Architect
- All type of material shall be used for work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.
- Aluminum ventilation shall confirm M-31 of GTS Booklet for building works.
- Fixtures and fastenings shall confirm M-43 of GTS Booklet for building works.

2. Workmanship:

- Work complete as per as described above specification.
- Work should be properly leveled without any sagging and with smooth opening and closing. There should be no variation or deviation of any kinds.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding etc. to

complete the whole work satisfactorily as per instruction of EIC/Architect.

- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors. Clear opening area shall be measured & paid in Square Meter.

Item No.66: Providing and fixing M.S. grills of required pattern to wooden frames of windows etc. with M.S. flats at required spacings and frame around, square or round bars with round headed bolts and nuts or by screws (A) Plain Grill.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- Work complete as per relevant specification of Item No: 10.100(A), page No -66 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for unit of one Kg.

Item No.67: Wall Punning : Providing and applying Plasto XP Gypsum plaster (USG Boral) or equivalent make , minimum 12 mm thick in Wall and minimum 6 mm thick in ceiling , including all labors, tools, tackles, scaffolding, surface preparation, mixing of material, transportation (lead & lift) applying in position, Levelling, finishing, cleaning etc. complete to satisfaction of Employer's representative/ Employer. The rate also include making of grooves above skirting, Dado tiles and around window and door jambs etc. (cost of Bonding agent to the ceiling or RCC surfaces is to be included in the item).item shall be used as per instruction of Employer's representative/ Employer .

1. Material:

- Plasto XP Gypsum plaster shall be used as per sample approved by Employer's representative/employer
- All type of material shall be used for work as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer

2. Workmanship:

- 12 mm thick in Wall and minimum 6 mm thick in ceiling , including all labors, tools, tackles, scaffolding, surface preparation, mixing of material, transportation (lead & lift) applying in position, Levelling, finishing, cleaning etc. complete to satisfaction of EMPLOYER'S REPRESENTATIVE/EMPLOYER.
- The rate also include making of grooves above skirting, dado tiles and around window

and door jambs etc. (cost of Bonding agent to the ceiling or RCC surfaces is to be included in the item)

- Work should be properly leveled without any sagging and with smooth. There should be no variation or deviation of any kinds.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors. Area shall be measured & paid in Square Meter.

Item No.68: Applying two coats of putty & two coats of primer of approved brand and manufacture on new wall surface to give an even shade including thoroughly brushing the surface free from mortar dropping and other foreign matter and sand papered smooth.

1. Material:

- Birla or Asian acrylic putty shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per relevant specification of Sr. No: 19.59 page No -124 in General specification R & B booklet for building works except that the Putty work.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labor, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rates all be for a unit of One Square Meter.

Item No.69: Wall painting (two coats) with plastic emulsion paint of approved brand and manufacture on undecorated wall surface to give an even shade including thoroughly brushing the surface free from mortar droppings and other foreign matter and sand papered smooth.

1. Material:

- Wall paint shall be used as per sample approved by EIC/ Architect.
- Work complete as per relevant specification of Item No: 18.57, page No -120 in General specification R & B booklet for building works.

- All type of material shall be used for work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Scaffolding: Wherever scaffolding is necessary it shall be erected in such a way that as far as possible on part of scaffolding shall rest against the surface to be colour washed. A properly secured strong and well tied suspended platform (Zoola) may be used for painting. Where ladders are used, pieces of old gunny bag shall be tied at top and bottom to prevent scratches to the floors and walls. For paint of ceilings proper stage scaffolding shall be erected where necessary.
- Preparation of surface: The substrate must be sound, clean, dry, free from dust, oil, grease and laitance etc. All traces of release agents must be removed. On chalky and dusty surfaces, all loose material must be removed by stiff bristle brushing. The primer/ Paint application is to be done with the rollers. Rate shall be including crack filling and levelling as per manufacturer's specification.
- Application: Applying two coats of Acrylic co-polymer Stucco putty of Jotun or equivalent on a one coat of PVA primer/Deco prime or equivalent and two coats of paint, scaffolding to at any height with all labour and material thoroughly brushing the surface free from mortar droppings and other foreign matter and sand prepared smooth etc. complete.
- Precautions: Splashes on floors etc. shall be cleaned out without delay as they will be difficult to remove after hardening. Washing of surfaces treated with Paints shall not be done within 3to4weeks of application.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Rate shall be including crack filling and leveling as per manufacturer's specification.
- Low VOC content. 2) Crack Bridging ability up to 1 mm. 3) Ability to resist bacteria/fungus 4) APEO (Alkyl Phenol Ethylate) and Formaldehyde free 5) Very Low Flame spread 6) Superior Wash ability.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc. for fixing at all heights and for all floors. Area shall be measured & paid in Square Meter.

Item No.70: 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

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant

IS codes and approved by EIC/Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- Work complete as per relevant specification of Item No: 18.51, page No -119 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one square meter.

Item No.71: Applying priming coat over new steel and other metal surface after and including preparing the surface by thoroughly cleaning, oil, grease, dirt and other foreign matter and scoured with brushes fine steel wood, scraper sands and paper with ready mixed priming paint brushing red lead.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- Work complete as per relevant specification of Item No: 19.21, page No -123 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one square meter.

Item No.72: Painting two coats (excluding priming coat) on new steel and other metal surface with enamel Paint, brushing, interior to give an even shade including cleaning the surface an even shade including cleaning the surface of all dirt, dust and other foreign matter.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete as per relevant specification of Item No: 19.19, page No -123 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one square meter.

Item No.73: Providing and fixing rolling shutters of approved make made of 80 mm wide M.S. laths inter-locked together through their entire length and jointed together at the ends by end locks mounted on specially designed pipe shaft with bracket plates, guide channels and arrangements for inside and outside locking with push-pull operation including the cost of hood cover and spring etc. complete.(A) Shutters having width below 3.5 M.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete as per relevant specification of Item No: 19.19, page No -123 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.

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

Item No.74: Providing in position PVC pipe sleeves of 6Kg/cm² and length as per design for following diameters for services wherever pipes pass through walls/ slabs/ beam in mtrs length. All pipes shall be accurately cut to the required sizes, laid as per drawing, kept in the position while concreting, and burrs removed before laying. Open ends of the pipe shall be closed as the pipe is installed to avoid clogging while concreting. Rate shall be inclusive of removal of sleeves before water proofing or grouting. For all floors / all levels / all heights. (a) 50mm Diameter

1. Material:

- All type of material shall be used as per approved make & Sample and confirming to relevant IS codes and approved by EIC/ Architect.

- 50mm Dia PVC pipe sleeves shall be used as per approved by EIC/Architect/Client.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- The piping system must be clamped properly as required, pipes passing through walls, beams, slabs, columns should pass through sleeves which are padded with insulation material internally (between pipe and sleeve) covering the pipe to avoid transfer of body and structural borne sounds (refer manufacturer's installation guide lines). The piping must not touch any wall, structure, paneling, false ceiling etc.. Cut-outs in the floor slab for installing the various pipes area are indicated in the drawings. Contractor shall carefully examine the cut-outs provided and clearly point out wherever the cut-outs shown in the drawings, do not meet with the requirements.
- Pipe sleeves, larger diameter than pipes, shall be provided wherever pipes pass through walls and slab and annular space filled with fiberglass and finished with retainer rings

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, scaffolding, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured and paid in running meter for visible area of work done.

Item No.75: Providing in position PVC pipe sleeves of 6Kg/cm² and length as per design for following diameters for services wherever pipes pass through walls/ slabs/ beam in mtrs length. All pipes shall be accurately cut to the required sizes, laid as per drawing, kept in the position while concreting, and burrs removed before laying. Open ends of the pipe shall be closed as the pipe is installed to avoid clogging while concreting. Rate shall be inclusive of removal of sleeves before water proofing or grouting. For all floors / all levels / all heights. (a) 75mm Diameter

1. Material:

- All type of material shall be used as per approved make & Sample and confirming to relevant IS codes and approved by EIC/Architect.
- 75mm Dia PVC pipe sleeves shall be used as per approved by EIC/Architect/Client.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- The piping system must be clamped properly as required, pipes passing through walls, beams, slabs, columns should pass through sleeves which are padded with insulation material internally (between pipe and sleeve) covering the pipe to avoid transfer of body and structural borne sounds (refer manufacturer's installation guide lines). The piping must not touch any wall, structure, paneling, false ceiling etc..
- Cut-outs in the floor slab for installing the various pipes area are indicated in the

drawings. Contractor shall carefully examine the cut-outs provided and clearly point out wherever the cut-outs shown in the drawings, do not meet with the requirements.

- Pipe sleeves, larger diameter than pipes, shall be provided wherever pipes pass through walls and slab and annular space filled with fiberglass and finished with retainer rings

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, scaffolding, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured and paid in Running meter for visible area of work done

Item No.76: Providing in position PVC pipe sleeves of 6Kg/cm² and length as per design for following diameters for services wherever pipes pass through walls/ slabs/ beam in mtrs length. All pipes shall be accurately cut to the required sizes, laid as per drawing, kept in the position while concreting, and burrs removed before laying. Open ends of the pipe shall be closed as the pipe is installed to avoid clogging while concreting. Rate shall be inclusive of removal of sleeves before water proofing or grouting. For all floors / all levels / all heights. (a) 110mm Diameter

1. Material:

- All type of material shall be used as per approved make & Sample and confirming to relevant IS codes and approved by EIC/Architect.
- 110mm Dia PVC pipe sleeves shall be used as per approved by EIC/Architect/Client.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- The piping system must be clamped properly as required, pipes passing through walls, beams, slabs, columns should pass through sleeves which are padded with insulation material internally (between pipe and sleeve) covering the pipe to avoid transfer of body and structural borne sounds (refer manufacturer's installation guide lines). The piping must not touch any wall, structure, paneling, false ceiling etc..
- Cut-outs in the floor slab for installing the various pipes area are indicated in the drawings. Contractor shall carefully examine the cut-outs provided and clearly point out wherever the cut-outs shown in the drawings, do not meet with the requirements.
- Pipe sleeves, larger diameter than pipes, shall be provided wherever pipes pass through walls and slab and annular space filled with fiberglass and finished with retainer rings

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, scaffolding, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured and paid in Running meter for visible area of work

done

Item No.77: Providing in position PVC pipe sleeves of 6Kg/cm² and length as per design for following diameters for services wherever pipes pass through walls/ slabs/ beam in mtrs length. All pipes shall be accurately cut to the required sizes, laid as per drawing, kept in the position while concreting, and burrs removed before laying. Open ends of the pipe shall be closed as the pipe is installed to avoid clogging while concreting. Rate shall be inclusive of removal of sleeves before water proofing or grouting. For all floors / all levels / all heights. (a) 160mm Diameter

1. Material:

- All type of material shall be used as per approved make & Sample and confirming to relevant IS codes and approved by EIC/ Architect.
- 160mm Dia PVC pipe sleeves shall be used as per approved by EIC/ Architect/Client.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- The piping system must be clamped properly as required, pipes passing through walls, beams, slabs, columns should pass through sleeves which are padded with insulation material internally (between pipe and sleeve) covering the pipe to avoid transfer of body and structural borne sounds (refer manufacturer's installation guide lines). The piping must not touch any wall, structure, paneling, false ceiling etc..
- Cut-outs in the floor slab for installing the various pipes area are indicated in the drawings. Contractor shall carefully examine the cut-outs provided and clearly point out wherever the cut-outs shown in the drawings, do not meet with the requirements.
- Pipe sleeves, larger diameter than pipes, shall be provided wherever pipes pass through walls and slab and annular space filled with fiberglass and finished with retainer rings

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, scaffolding, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured and paid in Running meter for visible area of work done

Item No.78: Core cutting : Providing and wet drilling accurate and clean holes of specified diameter in RCC walls, slabs, beam or any other RCC member without vibration by core cutting (diamond drilling) machine including scaffolding, safety majors, disposing the debris, cleaning for all levels/ all height as per structural consultant's drawing, after approval of engineer in charge etc compete. Rate shall be inclusive of filling the hole with non shrink grout/Chemical Anchoring in good manner. Measurement shall be taken for the depth of holes in running meter for specified diameter. Holes shall made by authorised approved agency. (a) holes from 100 dia.

1. Material and Workmanship:

- Marking of holes is to be approved by Employer's representative/employer Holes in

RCC walls, slabs, beams or any other RCC member by Core cutting machine of HILTI or as per approved list of make is to be done.

- RCC surface is cleaned after drilling including disposing of debris as specified in the disposal item. Necessary platform for the machine location and electrical wire management shall be adhere to safety standards. Bidder shall be responsible for the any type of damage work at the time of execution.
- The work include for epoxy based waterproofing compound for sealing the joints around the pipes at all heights as per instruction of Employer's representative/employer
- All work should be carried out as per detailed drawing and instruction of EMPLOYER'S REPRESENTATIVE/EMPLOYER/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design & any other requirement shall be as per instruction of Employer's representative/employer

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, fixtures, joineries, labour, scaffolding, etc.to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of Numbers.

Item No.79: Core cutting : Providing and wet drilling accurate and clean holes of specified diameter in RCC walls, slabs, beam or any other RCC member without vibration by core cutting (diamond drilling) machine including scaffolding, safety majors, disposing the debris, cleaning for all levels/ all height as per structural consultant's drawing, after approval of engineer in charge etc compete. Rate shall be inclusive of filling the hole with non shrink grout//Chemical Anchoring in good manner. Measurement shall be taken for the depth of holes in running meter for specified diameter. Holes shall made by authorised approved agency. (b) holes from 150 dia.

1. Material and Workmanship:

- Marking of holes is to be approved by Employer's representative/employer Holes in RCC walls, slabs, beams or any other RCC member by Core cutting machine of HILTI or as per approved list of make is to be done.
- RCC surface is cleaned after drilling including disposing of debris as specified in the disposal item. Necessary platform for the machine location and electrical wire management shall be adhere to safety standards. Bidder shall be responsible for the any type of damage work at the time of execution.
- The work include for epoxy based waterproofing compound for sealing the joints around the pipes at all heights as per instruction of Employer's representative/employer
- All work should be carried out as per detailed drawing and instruction of EMPLOYER'S REPRESENTATIVE/EMPLOYER/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design & any other requirement shall be as per

instruction of Employer's representative/employer

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, fixtures, joineries, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of Numbers.

Item No.80: SS RAILING : Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, solid bar, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners, stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in charge, (for payment purpose only weight of stainless steel members shall be considered including fixing accessories such as nuts, bolts, fasteners etc.). Contractor shall prepare shop drawing based on design, and get approved. Sample/ mockup shall be approved by Architect.

1. Material:

- SS 304 grade element for railing work shall be used as per approved make and sample by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Balcony railing shall be made with Stainless steel seamless tube of grade 304, continuously welded and grinded smooth polished smooth/ rough, bend/ curved at turning as per design, fixed/ welded with the Stainless steel balusters complete as per architectural drawing.
- All members of railing shall be machine cut, machine polished to get the best finishing. The balusters to be fixed with floor/ wall as the case may be with hidden type metal fasten of approved make and approved size.
- Base of baluster shall be covered with 2mm thk SS covering as per design
- All the work complete as per the detailed drawing and instruction of EIC/ Architect.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all

heights and for all floors.

- Area shall be measured in Running Meter.

Item No. 81: Duct Door finish with cement sheet & frame : Providing and fixing in position 12mm thick ply all proof shutter & Indian Teak Wood Frame of approved make having fire retardant ply facing on one sides and finished with 12mm thick cement fiber board with interior Paint and inner side oil paint as approved , shutter fixed with floor of approved make , lock & handle etc fixtures of approved make list with all necessary fittings etc. complete as per detailed drawings and specifications. sample mock shall be approved from Architect/EIC.

1. Materials:

- 12 mm thick flush door shall be used as per sample approved by EIC/Architect.
- Waterproof ply shall be used for door as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.
- Cement sheet shall be used for finish of door as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.
- Hardware shall use of as per approved by EIC/Architect.
- All type of material shall be used for Door as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Fixing of 12 mm thick solid core wooden single leaf flush doors of approved make having Waterproof ply facing on both sides as per approved sample.
- Fixing of Both side Cement sheet for finishes as per selection.
- Fixing of Hardware system of Gaze/Dorma as per selection work complete.
- All doors should be properly leveled without any sagging and with smooth opening and closing. There should be no variation or deviation of any kinds.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc. for fixing at all heights and for all floors. Clear opening area shall be measured & paid in Square meter.

Item No.82: White washing with lime on wall surface (three coats) to give an even shade incl. thoroughly brooming the surface to remove all dirt, dust, mortar drops and extra subsequent coat of white washing with lime on wall surface.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant

IS codes and approved by EIC/Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- Work complete as per relevant specification of Item No: 18.11-18.12, page No -126 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one square meter.

Item No.83: Providing and fixing rolling shutters of approved make made of 80 mm wide M.S. laths inter-locked together through their entire length and jointed together at the ends by end locks mounted on specially designed pipe shaft with bracket plates, guide channels and arrangements for inside and outside locking with push-pull operation including the cost of hood cover and spring etc. complete. (B) Shutters having width 3.5 M. and above

1. Material:

- Rolling shutters shall be of approved make, constructed from 80 mm wide M.S. laths, not less than 1.25 mm thick, cold rolled, interlocked throughout their length, and jointed with end locks.
- Laths shall be mounted on a specially designed pipe shaft with brackets, guide channels, and hood cover. Springs shall be of tested high tensile spring steel of adequate strength to balance the shutter

2. Workmanship:

- The shutters shall be fabricated true to size and shape, free from twists or warping, and assembled to operate smoothly. For shutters above 3.5 m in width, ball bearings and gear-operated arrangements shall be provided for ease of operation.
- The locking arrangement shall be provided at both ends with suitable push-pull operation for inside and outside use. The entire surface shall be finished as directed by the Engineer-in-Charge.

3. Measurements:

- Measurement shall be taken for the clear area of rolling shutter in square meters (sqm), covering shutter laths, guide channels, brackets, hood cover, spring, locking arrangements, and all fittings complete.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.

- The work done shall be measured in each for area of work done. The rate shall be for a unit of sqm.

Item No. 84 : Steel work, welded in built up sections framed work including cutting, hoisting, fixing in position and applying a priming coat of red lead paint. (A)In trusses and trussed purlins, beams and joists, channels angles Tees, flats, with connecting plates or angle cleats as in main and cross beams. Hip and jack rafters, purlins conneted to common rafters and the like

1. Material:

- Material brackets shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. . Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete as per relevant specification of Item No: 11.4(a), page No -70 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors.
- The rate shall be for a unit of one quintal.

Item No.85 : "Providing and fixing double scaffolding system (cup lock type) on the exterior side, up to seven story height made with 40 mm dia M.S. tube 1.5 m centre to centre, horizontal & vertical tubes joining with cup & lock system with M.S. tubes, M.S. tube challies, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it there after .The scaffolding system shall be stiffened with bracings, runners, connection with the building etc wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineerin-charge .The elevational area of the scaffolding shall be measured for payment purpose .The payment will be made once irrespective of duration of scaffolding."

1. Materials:

- All type of material shall be as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete as per relevant specification of Item No: 14.33, page No -707 in General specification DSR VOL-2 for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one square meter.

Item No.86: Road Marking with hot applied thermoplastic paints with reflectorising glass beads on bitumen/RCC surface providing and laying a hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads @250gms/m² area , thickness of 2.5mm is excluding of surface applied glass beads as per IRC: 35-2015. The finished surface to be levelled, uniform and free from streaks and holes. Thermoplastic paint shall be used for Zebra Patta, Bump Patta lane, edge line, cut patta, arrows for direction, letter or number writing etc. The white colour marking should provide luminance co-efficient on cement road shall be min 130 mcd/m²/lux and Asphalt road shall be min 100 mcd/m²/lux during the service life during the day time the marking should make the performance criteria for night time reflectivity, wet reflectivity and skid resistance as mentioned in the section- 15 of IRC: 35-2015. Warranty for retro reflectivity shall be 2 (Two) years.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.
- The road marking paint shall conform to I. S. 164-1951.

2. Workmanship:

- Work complete as per relevant specification of Item No: 19.126 (II), page No -129 in General specification R & B booklet for building works.
- Work complete including all type of joining material, tools, tackles, with finishing, proper even surface etc as per government standard specification and suggestion.

3. Measurements:

- The rate shall be consolidated for all above items.
- The relevant specifications of item No. 5.8.1. Shall be followed.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Square Meter.

Item No.87: Providing and fixing of Corner Guard for Various Flashing in 100mm x 100mm

size in Equal Shape with 5mm edge lipping on both side . The Angle Flashing shall be made out of 8 to 10 mm thick, The corner guard shall have plastic protective guard film of minimum 25 microns to avoid scratches during transportation. The U track shall be fixed with suitable POP rivet with wall and roof panels with minimum spacing of 450 mm c/c. size of guard 1000mm length

1. Material:

- The material as per approved sample by EIC/ Architect.
- All type of material shall be used for work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one Number.

Item No.88: Cat Eye/Road Stud/RPM: Supplying of Molded TwinShanks Raised Pavement Markers made of polycarbonate and ABS moulded body and reflective panelswithmicro prismatic lens capable of providing total internal reflection of the lightenteringthe lens face and shall support a loadof 13635kgs. tested in accordance to ASTM D4280Type Handcomplying to Specifications of Category A of MORTH Circular No RW/NH/33023/10-97 DO III Dt 11.06. 1997. The height, width and length shall not exceed 20mm, 130mm and 130mm and with minimum reflective area of 13Sq cmon each side and the slope to the base shall be 35+/-5 degree.The strength of detachment of the integrated cylindrical shanks, (of diameter not less than19+/-2mm and height not less than 30+/-2mm) from the body is to be a minimum value of 500Kgf. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturers recommendation and The color of the marker should be as per the IRC 35-2015 and as directed by Engineer-in-charge.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant approved by EIC/ Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete including all necessary materials, tool, tackles etc
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.

- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one each.

Item No.89: Direct Bought Out Item : Providing and placing in position SS brush finish (12 LTS PEDAL BIN/ STEP BIN -) of Kich , Dorma ,etc Square Pedal bin 10x15 Stainless Steel Dustbin or Equivalent as per images and as selected by the Architect.

1. Material:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.
- SS brush finish (12 LTS pedal bin/ step bin) shall be used as per approved make and sample By Employer's representative/ employer

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete as per above specification.
- Work complete including all types of tools, tackles, labour etc. complete at any level and Height

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of Number.

Item No.90: Providing and fixing in position Duel (2 No) of Dustbin for wet and dry garbage, of suggested size, material (corrosion resistance), finish (PU painted/ polyster powder coated), with logo of client and type/ function of dustbin and as per sample approved by Architect. The rate shall be for duel dustbin or two seperate dustbin (min 40 Lit each capacity) as per selection. Rate shall be inclusive of fixing of dustbin with all required civil work, anchor fastners of approved make and required capacity and making good.

4. Material:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.
- SS brush finish (12 LTS pedal bin/ step bin) shall be used as per approved make and sample By Employer's representative/ employer

5. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Work complete as per above specification.
- Work complete including all types of tools, tackles, labour etc. complete at any level and

Height

6. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.

The rate shall be for a unit of Number.

Item No.91: Artificial Plant : Providing and supplying planters with plant as per selection of Architect. Item includes cost of all labour, transport etc. as required for completing the work in all respects. All works are carried as per approval and instructions of the architect. Rate shall inclusive of sample, all materials, loading, unloading, all taxes, transportation, placing at all floors and for all leads.

1. Material:

- Planter with artificial plant shall be used as per approved make and sample by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Planter with artificial plant as per approval sample.
- Work complete as per above specification.
- Work complete including all types of tools, tackles, labour etc complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Number for area of work done. The rate shall be for a unit of one Number

Item No.92: Providing and fixing Sainless steel signage plate of 1.5mm thick with laser print/ etching and filled with duco paint of approved make including fixing to the wall or door with required accessories and as specified type including fixing etc complete as directed by engineer in charge

1. Material:

- Signages shall be used as per approved make and sample by EIC/ Architect.

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per above manufacturer's specification.
- Work complete including all types of tools, tackles, labour etc. complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Square Meter for area of work done. The rate shall be for a unit of one Square Meter.

Item No.93: DOOR MAT : 3M Nomad - Wiping technology - Heavy Duty 7150 - or equivalent approved make Grey Colour: Open Contraction Loop Matting with Crush Resilient Vinyl with backing. Matting Should be durable shouldn't Flatten over time. Thickness Should be 13mm Min.Suitable for heavy traffic areas, where traffic is upto 4 lakh people per year. work complete as per approved sample.

1. Material:

- Heavy traffic area door mat (Type -1: Wiping technology) shall be used as per approved Make and sample by Employer's representative/employer
- All type of material shall be used as per approved make list and confirming to relevant IS Codes and approved by Employer's representative/employer

2. Workmanship:

- Heavy Duty 7150 - or equivalent approved make Grey Colour: Open Contraction Loop Matting with Crush Resilient Vinyl with backing. Matting should be durable shouldn't Flatten over time.
- Thickness should be 13mm.
- Work complete as per above specification.
- Work complete including all types of tools, tackles, labour etc. complete at any level and Height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the

whole Work satisfactorily as per instruction of Employer's representative/employer

- No extra payment will be given for any of the reasons.
- The work done shall be measured in Square Meter for area of work done. The rate shall be for a unit of one Square Meter.

Item No.94: Providing & placing in position DIGITAL CLOCK - WALL MOUNTED as per architect selection Ajanta Digital Wall Clock(Brown, Black, With Glass)

1. Material:

- Digital clock - wall mounted shall be used for as per approved make and sample by EMPLOYER'S REPRESENTATIVE/EMPLOYER/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS Codes and approved by Employer's representative/employer

2. Workmanship:

- Work complete as per above specification.
- Work complete including all types of tools, tackles, labour etc. complete at any level and Height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole Work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Number for area of work done. The rate shall be for a Unit of one Number.

Item No.95: Signages : Providing and fixing of the following signages using make of cosign or equivalent approved make by architect.All the detailed work out as per the detailed drawing and instruction of Employer's representative/ Employer., specifications and drawings as indicated there in to all heights and elevation including necessary scaffoldings / supports /permanant fixing with cement mortor if fixed to ground etc complete in all respects.The Signage cost should be inclusive of panels,hanging system,bridges,primary & secondary fixings,vinyl,painting,powder coating self glowing mateial as directed etc.All shop drawings and coordination with other services is in scopeof contractor.(At all floor) Size (150 x 600mm) - FACE/WALL MOUNTED NAME PLATES/SIGNAGES/INFORMATION SIGNAGES (with back lit)

1. Material:

- Signage's shall be used as per approved make and sample by Employer's representative/employer.
- All type of material shall be used as per approved make list and confirming to relevant IS Codes and approved by Employer's representative/employer

2. Workmanship:

- Work complete as per above manufacturer's specification.
- Work complete including all types of tools, tackles, labour etc. complete at any level and Height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole Work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The work done shall be measured in number for area of work done. The rate shall be For a unit of number.

Item No.96: Providing, supplying and placing World Globe - as per sample approved by architect

1. Material:

- World globe shall be used as per approved make and sample by Employer's representative/employer
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer

2. Workmanship:

- Work complete as per above specification.
- Work complete including all types of tools, tackles, labour etc complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Number for area of work done. The rate shall be for a unit of one Number

Item No.97: Providing and placing in position vinyl printed MAP of size 54"x65" mm with teak wooden frame with polishing.

1. Material:

- Map shall be used as per approved make and sample by Employer's representative/employer

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer

2. Workmanship:

- Vinyl printed MAP of size 54"x65" mm with teak wooden frame with polishing.
- Work complete as per above specification.
- Work complete including all types of tools, tackles, labour etc. complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Number for area of work done. The rate shall be for a unit of one Number.

Item No.98: Wall Painting (Canvas painting): Providing & fixing painting made from canvas painting Canvas –suitable for oil and acrylic paints. The 100% cotton plain-woven canvas 1.5 mm thick laminate with UV protection, abrasion & chemical resistance. with require stretching and/or framing. work approved by Architect. The art work shall be hanged on the wall using heavy duty approved key-hole chaplas The concept of the painting work will be suggested by architect and interior designer and based on that offers from the artists to be invited for design and execution of the painting. The selection of the artist is to be done by architect and interior designer only. Main contractor is bind to follow the methodology suggested by architect and interior designer to be followed for development of commissioned art work. Rate are inclusive of artist appointing by main contractor. (Paintings Generic)

1. Material:

- Canvas painting shall be used as per approved make and sample by Employer's representative/employer
- All type of material shall be used as per approved make list and confirming to relevant IS Codes and approved by Employer's representative/employer

2. Workmanship:

- Painting made from canvas painting Canvas –suitable for oil and acrylic paints.
- The 100% cotton plain-woven canvas 1. MM thick laminate with UV protection, abrasion & Chemical resistance. With require stretching and/or framing. Work approved by Employer's representative/employer
- The Painting shall be hanged on the wall using heavy duty approved key-hole chapels.
- Work complete as per above specification.
- Work complete including all types of tools, tackles, labour etc. complete at any level and

Height.

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole Work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Square Meter for area of work done. The rate shall be for a unit of one Square Meter.

Item No.99: Natural Plant : Providing and supplying planters as per site requirement. The contractor shall cater for planter with plant as per selection made by Architect. The Architect shall recommend worth Rs. 4000/-piece maximum or as requirement. The contractor shall be paid 15 % of the incurred cost on producing the bills / vouchers for the same. Item includes cost of all labour, transfort etc. as required for completing the work in all respects. All works are carried as per approval and instructions of the architect. Rate shall inclusive of sample, all materials, loading, unloading, all taxes, transportation, placing at all floors and for all leads,all accessories as described in item description.As approval of architect. (Chrysanthemum,Cyclamen hybrid variety fresh,Adenium Obesum, Ficus Starlight

1. Material:

- Natural plant shall be used as per approved sample by Employer's representative/employer
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer

2. Workmanship:

- Natural plant shall be used as per approved sample.
- Work complete including all types of tools, tackles, labour etc complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Number for area of work done. The rate shall be for a unit of one Number.

Item No.100: Inauguration Plate : Providing and installation of Granite Foundation stone/inauguration plank 18-19mm thick engraved with writing provided by EIC and

engraved filled with golden colour and with a wooden frame.

1. Material:

- Granite foundation stone / inauguration plaque shall be of approved quality, uniform colour, free from cracks, veins, or defects.
- Lettering and matter shall be as provided / approved by the Engineer-in-Charge.
- Engraving shall be done neatly and uniformly to adequate depth for durability.
- Engraved letters shall be filled with approved golden colour enamel / epoxy paint, ensuring long-lasting finish and legibility.
- Wooden frame shall be made from seasoned, termite-treated wood, of approved design and finish.
- Frame shall be polished / painted as approved.
- Necessary screws, clamps, adhesives, fasteners, and backing supports shall be of approved quality.

2. Workmanship:

- Lettering shall be sharp, evenly spaced, properly aligned, and as per approved layout.
- Granite plate shall be properly mounted on wall / pedestal / stand, as directed by the Engineer-in-Charge.
- Golden colour filling shall be smooth, uniform, and free from stains or smudges.
- Wooden frame shall be fixed firmly around the granite plate with clean joints and good finish.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- **The rate shall be for a unit of one square meter.**

Item No.101: Providing and Fixing the S.S. 304 Letters with back light of given size as per Architect's drawings and approved sample or make (Approx Height of each letter 18 to 24 inches) along with all necessary hardwares, scaffolding, Alu/MS Back support, hanging support and accessories, The rate shall be for complete item inclusive of all material, labour, wastages, necessary tools & tackles, for all floors, all heights, all levels and all places within campus. Contractor shall do all the needful and shall fulfill Architect's design intent. No additional claims will be entertained for this. (Consider Letter : DEPARTMENT OF ARCHEOLOGY, BHUJ)

1. Material:

- S.S. 304 Letters shall be used as per approved make and sample by Employer's representative/employer
- Letters Height should be of each letter 18 to 24 inches approx.
- All type of material shall be used as per approved make list and confirming to relevant IS Codes and approved by Employer's representative/employer

2. Workmanship:

- Work complete as per above manufacturer's specification.
- Work complete including all types of tools, tackles, labour etc. complete at any level and Height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole Work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The work done shall be measured in each for area of work done. The rate shall be for a unit of each.

Item No.102: Table arrangement planter with pot :Providing and supplying as per selection of architect.Decorative plants may vary height from 8" to 12" with pot.

1. Material:

- Planter with pot shall be used as per approved sample by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Planter with pot shall be used as per approved sample.
- Work complete including all types of tools, tackles, labour etc complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Number for area of work done.
- The rate shall be for a unit of one Number.

Item No.103: Providing and placing in position HAND KNOTED carpets made from 100% Newzeleand wool/Viscoes ,100 knotes aprox pile height 10 mm as required and approved by the Architect.

1. Material:

- Hand Knotted carpet shall be used as per approved make and sample by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant

IS codes and approved by EIC/Architect.

2. Workmanship:

- Work complete as per above specification.
- Carpets made from 100% Newzeleand wool/Viscoes, 100 knotes aprox pile height 10 mm as required and approved by the EIC/Architect.
- Work complete including all types of tools, tackles, labour etc complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Square Meter for area of work done.
- The rate shall be for a unit of one Square Meter.

Item No.104 : "Lawn plantation : 1) Supplying and filling with good quality garden soil obtained from outside, including watering, ramming well, consolidating, compacting and dressing etc. complete, as directed.

2) Supply and spreading of FYM shall be done in proper slope including watering and fine dressing. Termite treatment to be done before laying of FYM.

3) Providing and laying lawn with earth 50mm to 60mm thickness on prepared ground with proper level and ramming with tools wooden (Dhurmos) and than rolling the surface with light roller make the surface smoothen and light watering with sprinkler and maintenance more till the grass establish properly, as per direction of Engineer in charge. All steps have to followed by contractor as specified for proper establishment of lawn. Cost shall be for surface preparation to after lawn establishment, all steps inclusive in this item."

1. Materials:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.
- Lawn plantation shall be used as per approved sample by Employer's representative/employer
- The lawn plantation shall be filling with good quality garden soil obtained from outside, including watering, ramming well, consolidating, compacting and dressing etc. complete, as directed.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- The relevant specification for this item shall be followed as per Item Description and instruction given by Engineer in Charge.

3. Measurement:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one square meter.

Item No.105 : Tree plantation : Supplying and planting well grown species of trees of required height (average height of tree 3' to 5' above bags/ pots) including mixing of FYM & good/ garden soil, termite treatment, pesticides, and planting of plants in excavated pit/ existing tree pit and species as per selection given by Architect. Cost of excavation or tree pit shall be paid in relevant tender item.

1. Material:

- shall be used as per approved sample by Employer's representative/employer
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer

2. Workmanship:

- Trees shall be used as per approved sample.
- Work complete including all types of tools, tackles, labour etc complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Number for area of work done.
- The rate shall be for a unit of one Number.

Item No.106: Shrub plantation : Supplying well grown shrub plants and ground cover plants of average height 3' to 4' and planting in planter or on ground by providing and mixing FYM @ 0.06cum/pit with soil pesticide & insecticide. Plants should be disease free and fungus free in 8"x 10" polythene bag. Plastic bags or pots should be removed carefully and soil around the roots should not be dropped or disturbed much. Bill shall be placed after completion of maintenance period but not before stabilizing the shrubs. Mortality rates to be inclusive. Work shall be done as shown in the drawing or as directed and approved by EIC. The ground coverage should be dense and uniform throughout the planting area.

1. Material:

- Shrub plants shall be used as per approved sample by Employer's representative/employer

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer

2. Workmanship:

- Shrub plants shall be used as per approved sample.
- Work complete including all types of tools, tackles, labour etc complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Number for area of work done.
- The rate shall be for a unit of one Nos.

Item No.107: "FURNITURE WORK (CUSTOMADE & MODULAR)

FULL HT STORAGE(CARPENTRY WORK): Providing, making and fixing storage units in position as per reference drawings. Storage made from IS 710 MR Grade 19 mm thick and 12 mm ply , finish with 1 mm thick laminate both side as per approved make and shade Solid Shutter: shall be made from IS 710 MR Grade 19 mm thick ply with both side 1 mm thick laminate finish with approved locking arrangement system. Ply shutter with references image, sample, Detail Drawings and as per architect / EIC instruction. made from aluminium SS finish profile (olive or eqvilant approved make) with 4 mm th toughned glass with glass film finish with require all necessary accessories And locking arrangement system Shelf: as instruction of Employer's representative/ Employer making and fixing shelf from IS 710 MR Grade ply finish with both side approved 1 mm thick laminate."

1. Material:

- IS 710 ply shall be used for back support as per approved make and sample by EIC/Architect.
- Glass shall be used approved make list and confirming to relevant IS codes and approved by EIC/Architect.
- Hardware's shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Storage shall be made from IS 710 BWR 19 mm thick and 12 mm thick ply, finish with 19 mm thick laminate both side as per approved make and shade.
- Solid Shutter: shall be made from IS 710 BWR 19 mm thick ply with both side 19 mm

thick laminate finish with approved locking arrangement system.

- Shelves from IS 710 BWR ply finish with both side approved 19 mm thick laminate.
- Glass with profile shutter: made from aluminum SS finish profile (olive or equivalent approved make) with 4 mm thick toughened glass with glass film finish with require all necessary accessories And locking arrangement system
- Work complete including all types of tools, tackles, labour etc complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors.
- The work done shall be measured in Square meter for area of work done. The rate shall be for a unit of one Square Meter. Clear elevation area shall be measured and paid.

Item No.108: PANTRY BELOW STORAGE 600DX800 H: Providing, making, fixing as per detail drawing made from 19 mm IS 710 BWP ply structure and first class indian teak wood frame, both side 1 mm thick laminate finish shall be of approved make & shade and as per the detail drawing. All the edges of ply shall be covered with 1 mm thick laminate finish Rate shall also inclusive of all necessary brass satin finish nickel plated/S.S 304 grade hardware like Hinges, locks, 6" handle, 75 mm tower bolts, ball catches/Magnet, The rate shall be inclusive of shelf both side 1 mm thick laminate finish and as per detail drawer unit with SS 304 grade kitchen basket as per selection by architect The rate shall be in sqm of elevation area for all floors and at all heights including all costs complete as per the Architectural drawings & instructions. Only the elevation area of the storage unit will be measured and paid for. Item for 1 mm thick laminate fixing and polishing is included in this item. The work shall be measured & paid in sqm The rates shall be inclusive of all wastages, material, labor, taxes, transportation, loading, unloading, fixing in position, etc. complete to the satisfaction of the Architect and EIC. The mock-up of 1 unit shall be approved from EIC and Architecture prior to the final production.

1. Material:

- IS 710 MR Grade ply shall be used for back support as per approved make and sample by Employer's representative/employer
- 1.5 mm thick Laminate shall be used as per approved make and sample by Employer's representative/employer
- Glass shall be used approved make list and confirming to relevant IS codes and approved by Employer's representative/employer

- Hardware's shall be used as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by Employer's representative/employer
- Plywood shall confirm M-37 of GTS Booklet for building works.
- Fixtures and fastenings shall confirm M-43 of GTS Booklet for building works.

2. Workmanship:

- Storage shall be made from IS 710 MR Grade 19 mm thick and 12 mm thick ply, finish with 1.5 mm thick laminate both side as per approved make and shade.
- Solid Shutter: shall be made from IS 710 MR Grade 19 mm thick ply with both side 1. mm thick laminate finish with approved locking arrangement system.
- Shelves from IS 710 MR Grade ply finish with both side approved 1 mm thick laminate.
- Glass with profile shutter: made from aluminium SS finish profile (olive or equivalent approved make) with 4 mm th toughened glass with glass film finish with require all necessary accessories And locking arrangement system
- Work complete including all types of tools, tackles, labour etc complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of Employer's representative/employer

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of Employer's representative/employer
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors.
- The work done shall be measured in Square meter for area of work done.

The rate shall be for a unit of one Square Meter. Clear elevation area shall be measured and paid

Item No.109: PANTRY BELOW STORAGE 600DX800 H: Providing, making, fixing as per detail drawing made from 19 mm IS 710 BWP ply structure and first class indian teak wood frame, both side 1 mm thick laminate finish shall be of approved make & shade and as per the detail drawing. All the edges of ply shall be covered with 1 mm thick laminate finish Rate shall also inclusive of all necessary brass satin finish nickel plated/S.S 304 grade hardware like Hinges, locks, 6" handle, 75 mm tower bolts, ball catches/Magnet, The rate shall be inclusive of shelf both side 1 mm thick laminate finish and as per detail drawer unit with SS 304 grade kitchen basket as per selection by architect The rate shall be in sqm of elevation area for all floors and at all heights including all costs complete as per the Architectural drawings & instructions. Only the elevation area of the storage unit will be measured and paid for. Item for 1 mm thick laminate fixing and polishing is included in this item. The work shall be measured & paid in sqm The rates shall be inclusive of all wastages, material, labor, taxes, transportation,

loading, unloading, fixing in position, etc. complete to the satisfaction of the Architect and EIC. The mock-up of 1 unit shall be approved from EIC and Architecture prior to the final production.

1. Materials:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.
- IS 710 ply shall be used as per approved make and sample by EIC/Architect.
- Laminate shall be used as per approved make and sample by EIC/Architect.
- Hardware's shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- 19 mm IS 710 BWP ply structure and both side 1.5 mm thick laminate finish shall be of approved make & shade and as per the detail drawing.
- All the edges of ply shall be covered with 1.5 mm thick laminate finish Rate shall also inclusive of all necessary brass satin finish nickel plated/S.S 304 grade hardware like Hinges, locks, 6"handle, 75 mm tower bolts, ball catches/Magnet, The rate shall be inclusive of shelf both side 1.5 mm thick laminate finish and as per detail drawer unit with SS 304 grade kitchen basket as per selection by EIC/Architect.
- Work complete including all types of tools, tackles, labour etc. complete at any level and height.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc. for fixing at all heights and for all floors.
- No extra payment will be given for any of the reasons.
- The rate shall be in sqm of elevation area for all floors and at all heights including all costs complete as per the Architectural drawings & instructions. Only the elevation area of the storage unit will be measured and paid for. Item for 1.5 mm thick laminate fixing and polishing is included in this item.
- The rate shall be for a unit of one square meter.

Item No.110: PANTRY ABOVE STORAGE 600DX800 H: Providing, making, fixing as per detail drawing made from 19 mm IS 710 BWP ply structure and first class indian teak wood frame, both side 1 mm thick laminate finish shall be of approved make & shade and as per the detail drawing. All the edges of ply shall be covered with 1 mm thick laminate finish Rate shall also inclusive of all necessary brass satin finish nickel plated/S.S 304 grade hardware like Hinges, locks, 6"handle, 75 mm tower bolts, ball catches/Magnet, The rate shall be in sqm of

elevation area for all floors and at all heights including all costs complete as per the Architectural drawings & instructions. Only the elevation area of the storage unit will be measured and paid for. Item for 1 mm thick laminate fixing and polishing is included in this item. Approval of all loose material (sample of materials to be used) & raw manufacturing to be got approved in advance from EIC & Architect prior to the final production of the work. Manufacturing shall in parts or as whole as per the requirements & or assembled at site as per the requirement and directed by EIC & Architect. All material to be used shall be as per the drawings & confirm to the relevant detailed material specifications of this document. The work shall be measured & paid in sqm. The rates shall be inclusive of all wastages, material, labor, taxes, transportation, loading, unloading, fixing in position, etc. complete to the satisfaction of the Architect and EIC. The mock-up of 1 unit shall be approved from EIC and Architecture prior to the final production.

1. Materials:

- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.
- IS 710 ply shall be used as per approved make and sample by EIC/Architect.
- Laminate shall be used as per approved make and sample by EIC/Architect.
- Hardware's shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- 19 mm IS 710 BWP ply structure and both side 1.5 mm thick laminate finishes shall be of approved make & shade and as per the detail drawing.
- All the edges of ply shall be covered with 1.5 mm thick laminate finish. Rate shall also inclusive of all necessary brass satin finish nickel plated/S.S 304 grade hardware like Hinges, locks, 6" handle, 75 mm tower bolts, ball catches/Magnet,
- The rate shall be in sqm of elevation area for all floors and at all heights including all costs complete as per the Architectural drawings & instructions. Only the elevation area of the storage unit will be measured and paid for. Item for 1.5 mm thick laminate fixing and polishing is included in this item.
- Work complete including all types of tools, tackles, labour etc complete at any level and height.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors.
- The rate shall be in sqm of elevation area for all floors and at all heights including all

costs complete as per the Architectural drawings & instructions. Only the elevation area of the storage unit will be measured and paid for. Item for 1.5 mm thick laminate fixing and polishing is included in this item.

- The work done shall be measured in Square Meter for area of work done. The rate shall be for a unit of Square Meter.

Item No.111: 2 SEATER SOFA - 1500mmW x 750mmD x 750mmH REDEFINO - Providing and supply Sofa sturcture made from 18mm MR Grade Mr grad plywood supported with Maranti Solid wood, back side and curved part Covered with 3mm flexi ply, sofa arm made from 12mm thick MR Grade Mr grad plywood supported with maranti solid wood. Elastic Belt, 75mm board & 2.25 mm thick elastic webbing stapling in seat frame at 100 mm centre to centre distance, belt fastern in X and Y axes of seat, elastic belt elongation 45% tensile strength 350 kg. Foam 100 mm X 40 density Premium Quality foam covered with 25mm X 32 density super soft Premium Quality Foam for soft touch filling in seat. 50 mm X 40 density Premium Quality foam covered with 25mm X 32 density super soft Premium Quality foam for soft touch filling in back. Stiching Stiching work done with well known german brand (Aman / Gutermann) Thread. Nylone & Polyester thread used as per application. Stainless steel 202 Grade 50 mm X 25 mm Legs used in sofa.

1. Material:

- Sofa frame shall be made from 18 mm MR Grade plywood supported with Maranti solid wood, with curved/back parts covered in 3 mm flexi ply and arms in 12 mm MR Grade plywood with Maranti support.
- Seat support shall consist of 75 mm board with 2.25 mm thick elastic webbing, stapled at 100 mm centres in X and Y axes, with belts having elongation 45% and tensile strength 350 kg.
- Cushioning shall be with 100 mm thick, 40-density premium foam covered by 25 mm, 32-density super-soft foam for seating, and 50 mm, 40-density foam + 25 mm, 32-density super-soft foam for backrest.
- Upholstery stitching shall be done with Aman/Gutermann German threads, nylon/polyester type as per application.
- Legs shall be SS 202 grade, 50 × 25 mm, polished and rust-resistant.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Sofa frame shall be rigid, square, and properly jointed, with all ply edges sealed.
- Elastic belts shall be fixed securely to avoid sagging and to ensure uniform tension.
- Foam shall be cut, shaped, and upholstered neatly, ensuring wrinkle-free, smooth surfaces.
- Stitching shall be straight, firm, and consistent with high-quality finish.

- Final sofa shall be polished, inspected, and approved for comfort, durability, and aesthetics.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- Sofa shall be measured and paid for in numbers (each complete unit) of specified size.
- Rate shall be inclusive of frame, ply, foam, upholstery, webbing, stitching, SS legs, finishing, labour, transport, and installation.
- No extra shall be paid for wastage, stitching thread, or minor accessories.
- Work shall be deemed complete only after approval of quality, comfort, and finish by the Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One No.

Item No.112: 3 SEATER SOFA : 2100mm (L) x 600 mm (B) x 750 mm (H) made up of Solid teak wood frame PU matt finished polish. The seat & back shall be in high density foam & finished in Approved fabric upholstery & back - back side finish with ply 303 & veneer finish /with SS leveler as per the drawing/image and instruction from Architect/EIC all external & internal exposed woodwork to be finished in PU matt finish polish. The work shall be done as per the approved shop drawing (to be prepared by contractor), specifications, sample approved and as directed by the Architect and Engineer-in-charge. The rate shall be for complete item inclusive of all material, labour, wastages, necessary tools & tackles, approved make for all floors, all heights, all levels and all places within campus. Contractor shall do all the needful and shall fulfill Architect's design intent. No additional claims will be entertained for this. Rate shall inclusive of shop drawing ,mock up sample, all materials, loading, unloading, all taxes, transportation, placing at all floors and for all leads, all accessories as described in item description. As approval of architect.

1. Material:

- Sofa frame shall be made of solid teak wood, well-seasoned and treated, fabricated to the finished size of 2100mm length x 600mm breadth x 750mm height.
- Exposed wooden surfaces shall be finished in PU matt polish of approved shade.
- Seating and backrest shall be of high-density premium quality foam upholstered in approved fabric.
- Backside finish shall be with IS:303 grade plywood and veneer polished to match the front finish.
- Base shall include stainless steel levelers of approved design.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Contractor shall prepare shop drawings and a mock-up sample of the sofa (2100 × 600 × 750 mm) for approval before execution.
- Sofa shall be fabricated with precise joinery, ensuring durability, stability, and proper proportions.
- Foam and fabric shall be cut and upholstered neatly to achieve smooth, wrinkle-free finish.
- Veneer and polish shall be applied in uniform coats to obtain a smooth matt finish.
- All work shall reflect the Architect's design intent and be executed by skilled labour.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- Sofa shall be measured and paid for in numbers (each complete unit of size 2100mm × 600mm × 750mm).
- Rate shall include teak wood frame, ply, veneer, foam, upholstery, SS levelers, PU matt polish, mock-up, shop drawings, labour, transport, loading/unloading, and installation.
- No extra shall be paid for upholstery details, polishing, or accessories.
- Work shall be accepted only after approval of the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.113: CORNER TABLE (CUSTOM MADE) - 600MM (L) x 600MM (W) - Providing fixing complete as per drawing/Ref Image. center table 35 mm thick top made from IS 303 grade ply with gurjan base ply veneer finish semi gloss PU finish and vertical support from ss 304 grade including all type of hardware, fittings, fixtures , tools , tackles , etc complete as per attached ref image and drawing. The work shall be done as per the specifications, sample approved and as directed by the Architect and Engineer-in-charge.

1. Material:

- Table top shall be 35 mm thick, fabricated from IS:303 grade plywood with Gurjan base ply and finished in veneered surface with semi-gloss PU finish.
- Vertical support/legs shall be of SS 304 grade stainless steel, polished to smooth finish.
- All adhesives, hardware, and fittings shall be of approved make and suitable for long-term durability.
- Veneer shall be of approved shade and quality, free from cracks, patches, or discoloration.

- All materials shall be sourced from approved suppliers and checked before use.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- The contractor shall prepare the table as per approved drawing/reference image and obtain prior approval of Architect/Engineer-in-Charge.
- Table fabrication shall ensure rigid joints, stability, and accurate dimensions of 600mm × 600mm.
- Veneer finish shall be applied smoothly and finished with semi-gloss PU coating in multiple layers for durability.
- Stainless steel support shall be aligned, welded/bolted neatly, and polished.
- Final product shall be cleaned, polished, and protected until handover.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- The table shall be measured and paid for in numbers (each complete unit of size 600mm × 600mm).
- Rate shall be inclusive of all plywood, veneer, PU finish, SS 304 supports, fittings, polishing, labour, transport, loading/unloading, and installation.
- No extra shall be paid for tools, tackles, wastage, or working at site conditions.
- Work shall be accepted only after approval of finish, quality, and dimensions by the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.114: CENTER TABLE - 1200MM (L) x 600MM (W) x 450mm (H) - Providing fixing complete as per drawing/Ref Image/Sample and Approved make. center table top made from 303 BWR ply with veneer finish matt PU finish and vertical support from solid teak wood with detailed shape & size with PU matt polish , including all type of hardware, fittings, fixtures , tools , tackles , etc complete as per attached ref image and drawing. The work shall be done as per the specifications, sample approved and as directed by the Architect and Engineer-in-charge. Providing and fixing/placing custom made furniture as per detail drawing/ref.image.The work shall be done as per the approved shop drawing (to be prepared by contractor), specifications, mock up sample approved and as directed by the Architect and Engineer-in-charge. The rate shall be for complete item inclusive of all material, labour, wastages, necessary tools & tackles,approved make for all floors, all heights, all levels and all

places within campus. Contractor shall do all the needful and shall fulfill Architect's design intent. No additional claims will be entertained for this. The unit shall be manufactured in parts and these parts shall be assembled at site.

1. Material:

- Table top shall be made from IS:303 BWR grade plywood, finished with approved veneer and coated with matt PU polish.
- Vertical supports/legs shall be made from solid teak wood, shaped and sized as per detailed drawing, finished with PU matt polish.
- All hardware, fittings, and adhesives shall be of approved make, rust-resistant, and suitable for long-term durability.
- Veneer shall be defect-free, with uniform colour and texture, of approved shade.
- The unit shall be manufactured in parts at factory/workshop and assembled at site.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Contractor shall prepare shop drawings and a mock-up sample for approval prior to execution.
- Fabrication shall ensure precise dimensions of 1200mm × 600mm × 450mm, rigid joinery, and stability.
- Veneer and PU finish shall be applied in multiple coats, achieving uniform matt finish.
- Solid teak supports shall be carved/shaped as per approved design and polished uniformly.
- All work shall be carried out under strict quality control to match the Architect's design intent.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- Center table shall be measured and paid in numbers (each complete unit of 1200 × 600 × 450 mm).
- Rate shall include cost of ply, veneer, teak wood, PU polish, fittings, mock-up, shop drawings, labour, transport, loading/unloading, and site assembly.
- No separate payment shall be made for tools, tackles, scaffolding, wastage, or assembly at site.
- Work shall be accepted only after final inspection and approval by the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.

- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.115: "CHAIR TYPE - 01 (MAIN CHAIR) : Providing and supply PREMIUM EXECUTIVE REVOLVING CHAIR (High Back)- Upholstered with Leatherette seat have be made up of 12 mm +/- 1 mm thick hot pressed Mr grad plywood and back in two Pieces - 12 mm Inner Back and 6 mm Rear Back. Moulded polyurethane foam with Fire Retardant Grade - (FR) used in making seat which have be moulded with density 45+/- 2 kg/m³, back have be Upholstered with density 32+/- 2 kg/m³ block foam & filling with polyurethane fiber. Spine bracket should be made of M.S plate 8 mm Thickness connecting back with mechanism. Armrest top is soft touch upholstered with leatherette mounted on to an injection moulded fix type armrest which is fix on the Aluminum Pressure Die Casted (PDC) bracket with mirror finish and supported on powder coated twin pipe fittings. The mechanism of the chair have have following features : 360° revolving type, synchronous DONATI, Italy. Mechanism, Tilt tension adjustment, 5-position locking with Anti-Shock feature. The chair have be provided with pneumatic height adjustment which have have stroke of 90 +/- 5 mm. The five leg Base is made up of 38mm dia x 1.2mm thick tubular with 3.15 mm thick centre hub CRC fabricated chrome finish. It have be fitted with 50 mm dia Twin wheel castor. The size of the base have be - 660 +/- 1 mm pitch-centre-diameter. Load test as per BIFMA compliance. The twin wheel castors have be made of Nylon injection moulded in black colour. Overall dimensions of Chair have be, Width of Chair - 640 mm, Depth of chair 640 mm as measured from base below. Height of back from ground - min 1170 mm to max 1270 mm. Seat height -min 475 mm to max 575 mm. Dimensions tolerance / variations have be within +/- 10 mm. (Make : FEATHERLITE / GODREJ / HAWORTH / HOF)"

1. Material:

- Chair seat shall be made from 12 mm (± 1 mm) thick hot-pressed MR Grade plywood, upholstered with leatherette.
- Backrest shall consist of 12 mm inner back + 6 mm rear back, upholstered with 32 ± 2 kg/m³ block foam and polyurethane fibre filling.
- Seat shall be made with moulded PU foam of FR (fire retardant) grade, density 45 ± 2 kg/m³.
- Armrests shall be upholstered soft-touch leatherette, mounted on aluminium pressure die-cast brackets with mirror finish, supported on powder-coated twin pipe fittings.
- Base shall be a five-leg, 660 ± 1 mm pitch centre diameter, 38 mm dia \times 1.2 mm thick tubular with 3.15 mm thick centre hub, chrome finish, fitted with 50 mm dia twin-wheel nylon castors.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Spine bracket shall be of 8 mm thick MS plate, securely connecting the backrest with the mechanism.
- Chair mechanism shall be DONATI (Italy) synchronous mechanism, 360° revolving, with tilt-tension adjustment, 5-position locking, and anti-shock feature.

- Pneumatic seat height adjustment shall have a stroke of 90 ± 5 mm.
- All upholstery stitching shall be neat, uniform, and free from wrinkles.
- Chair shall comply with BIFMA standards and shall be supplied from approved makes only (Featherlite, Godrej, Haworth, HOF).
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Chair shall be measured and paid for in numbers (each complete chair unit).
- Rate shall include plywood, foam, fibre, upholstery, mechanism, base, armrests, castors, labour, transport, loading/unloading, installation, and accessories.
- No extra shall be payable for variations in dimensions within ± 10 mm tolerance.
- Work shall be deemed complete only after supply, assembly, and approval by the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.116: CHAIR TYPE - 02 (VISITOR CHAIR) : Providing and supply PREMIUM EXECUTIVE REVOLVING CHAIR (Medium Back) - Upholstered with Leatherette seat have be made up of 12 mm +/- 1 mm thick hot pressed Mr grad plywood and back in two Pieces - 12 mm Inner Back and 6 mm Rear Back. Moulded polyurethane foam with Fire Retardant Grade - (FR) used in making seat which have be moulded with density 45 ± 2 kg/m³, back have be Upholstered with density 32 ± 2 kg/m³ block foam & filling with polyurethane fiber. Spine bracket should be made of M.S plate 8 mm Thickness connecting back with mechanism. Armrest top is soft touch upholstered with leatherette mounted on to an injection moulded fix type armrest which is fix on the Aluminum Pressure Die Casted (PDC) bracket with mirror finish and supported on powder coated twin pipe fittings. The mechanism of the chair have have following features : 360° revolving type, synchronous DONATI, Italy. Mechanism, Tilt tension adjustment, 5-position locking with Anti-Shock feature. The chair have be provided with pneumatic height adjustment which have have stroke of 90 ± 5 mm. The five leg Base is made up of 38mm dia x 1.2mm thick tubular with 3.15 mm thick centre hub CRC fabricated chrome finish. It have be fitted with 50 mm dia Twin wheel castor . The size of the base have be - 660 +/- 1 mm pitch-centre-diameter. Load test as per BIFMA compliance. The twin wheel castors have be made of Nylon injection moulded in black colour. Overall dimensions of Chair have be, Width of Chair - 640 mm, Depth of chair 640 mm as measured from base below. Height of back from ground - min 950 mm to max 1050 mm. Seat height -min 475 mm to max 575 mm. Dimensions tolerance / variations have be within +/- 10 mm.

1. Material:

- Seat shall be made of 12 mm (± 1 mm) thick hot-pressed MR Grade plywood, upholstered with leatherette.
- Back shall be made in two pieces – 12 mm inner back + 6 mm rear back, finished with 32 ± 2 kg/m³ block foam and polyurethane fibre filling.
- Seat cushion shall use moulded PU foam of FR grade, density 45 ± 2 kg/m³.
- Armrests shall be upholstered soft-touch leatherette, mounted on aluminium pressure die-cast brackets (mirror finish) with powder-coated twin pipe supports.
- Base shall be a five-leg, 660 ± 1 mm pitch-centre-diameter CRC chrome-finished hub, with 38 mm dia \times 1.2 mm thick tubular sections and 50 mm dia twin-wheel nylon castors.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Spine bracket shall be fabricated from 8 mm thick MS plate, connecting the back to the mechanism.
- Mechanism shall be synchronous DONATI (Italy), 360° revolving, with tilt-tension adjustment, 5-position locking, and anti-shock feature.
- Pneumatic seat height adjustment shall have a stroke of 90 ± 5 mm.
- Upholstery stitching shall be uniform, free of wrinkles, with neat finishing.
- All chairs shall conform to BIFMA compliance standards for load test and durability.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- "Work complete as per approved sample/model, BIFMA compliance, overall dimensions 640mm (W) \times 640mm (D) \times 950-1050mm (Back Height) \times 475-575mm (Seat Height), and as directed by the Architect/Engineer-in-Charge."
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- Visitor chairs shall be measured and paid in numbers (each complete chair unit).
- Rate shall include plywood, foam, fibre, upholstery, armrests, base, castors, mechanism, fittings, labour, transport, loading/unloading, and installation.
- No extra shall be paid for tolerance variations within ± 10 mm in overall dimensions.
- Work shall be accepted only after supply, assembly, and approval by the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.117: CHAIR TYPE - 03 (VISITOR) : Providing and supply Med. Back Rev. Chair Upholstered with Leatherette seat made up of 12 mm +/- 1 mm thick hot pressed MR grade plywood and back in two Pieces - 12 mm Rear Back and 6 mm inner Back. Moulded polyurethane foam used in making seat with moulded density 45 +/- 2 kg/m³. Back is made out of 32 Density Block Foam covered with 14 mm thick 32 density foam sheet (Block foam). Spine bracket made of M.S plate 8 mm Thickness connecting back with mechanism. Armrest top is soft touch polyurethane moulded of 250 to 300 density insert in chrome finish pipe having unique fix "T" shape. The mechanism of the chair have following features : 360° revolving type 3.5 mm Thick CRCA seat plate with 4 mm thick CRCA channel plate synchro Mechanism, Tilt tension adjustable, Single position locking, Plastic component inside the mechanism of Grade - MI 3530 and Epoxy Powder coated 70 Microns with tested 1.2 lacs cycles as per BIFMA Standard The chair have be provided with pneumatic height adjustment which have have stroke of 100 +/- 5 mm The five leg Base is made up of 38 mm dia x 1.2 mm thick tubular with 3.15 mm thick centre hub CRC fabricated chrome finish. It have be fitted with 50 mm dia Twin wheel castor. The size of the base have be - 660 +/- 1 mm pitch-centre-diameter. Load test as per BIFMA compliance. The twin wheel castors have be made of Nylon injection moulded in black colour. Overall dimensions of Chair have be, Width of Chair - 640 mm, Depth of chair 640 mm as measured from base below. Height of back from ground - min 950 mm to max 1050 mm. Seat height -min 455 mm to max 555 mm. Dimensions tolerance / variations have be within +/- 10 mm. (Location : Comm. Room/Sr. Class Office, Comm. Room/Jr. Class Office, Accountant Office)

1. Material:

- Seat shall be made of 12 mm (±1 mm) hot-pressed MR Grade plywood, upholstered with leatherette finish.
- Back shall consist of 12 mm rear back + 6 mm inner back, cushioned with 32 density block foam and an additional 14 mm thick, 32 density foam sheet.
- Seat cushion shall use moulded polyurethane foam of 45 ± 2 kg/m³ density (FR grade).
- Armrest shall be soft-touch polyurethane moulded (250–300 density insert) fixed on a chrome-finished "T" shaped support.
- Base shall be a five-leg CRC fabricated chrome finish hub, with 38 mm dia × 1.2 mm thick tubular frame and 50 mm dia nylon twin-wheel castors.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Spine bracket shall be made from 8 mm thick MS plate connecting the back to the mechanism.
- Mechanism shall be Synchro mechanism, with 3.5 mm thick CRCA seat plate + 4 mm CRCA channel plate, tilt-tension adjustment, and single-position locking.
- Mechanism plastic components shall conform to Grade MI 3530, epoxy powder coated (70 microns), and cycle-tested for 1.2 lakh operations as per BIFMA standards.
- Pneumatic height adjustment shall provide a stroke of 100 ± 5 mm.
- All parts shall comply with BIFMA testing standards for durability and load

performance.

- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- Work complete as per approved sample/model, BIFMA compliance, overall dimensions 640mm (W) × 640mm (D) × 950-1050mm (Back Height) × 455-555mm (Seat Height), and as directed by the Architect/Engineer-in-Charge
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Visitor chairs shall be measured in numbers (each complete chair unit).
- Rate shall include upholstery, plywood, foam, armrest, mechanism, base, castors, fittings, labour, loading/unloading, and installation at designated locations.
- No extra shall be paid for tolerance variations within ± 10 mm in dimensions.
- Work shall be executed, assembled, and handed over as per instructions of the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.118: CHAIR TYPE - 04 (STAFF CHAIR) : Providing and supply Med. Back Chair - Upholstered with Leatherette seat have be made up of 12 mm +/- 1 mm thick hot pressed Mr grad plywood on which moulded PU foam mounted .Back is made up moulded PU foam and Inner outer snap fitted covers injection moulded rectangular shape.Spine bracket made of ambose 6 mm Thick M S plate connecting back with mechanism. Armrest top is hard touch polypropylene moulded in ring shape . The mechanism of the chair have following features: 360° revolving type 2.5mm Thk CRCA seat plate with 3.5mm thk CRCA channel plate push back Mechanism, Tilt tension adjustable, Single position locking , Plastic component inside the mechanism of Grade - MI 3530 and Epoxy Powder coated 70 Microns with tested 1.2 lacs cycles as per BIFMA Standard The chair have be provided with pneumatic height adjustment which have have stroke of 100 +/- 5 mm The Base have be made of injection moulded nylon. It have be fitted with 5nos. twin wheel castor - 50 mm diameter. The size of the base be 660 +/- 1 mm pitch-centre-diameter The twin wheel castors have be made of Nylon injection moulded in black colour. Overall dimensions of Chair have be, Width of Chair - 580 mm, Depth of chair -580 mm as measured from base below. Height of back from ground - min 950 to max1050 mm. Seat height -min 440 mm to max 540 mm. Dimensions tolerance / variations have be within +/- 10 mm.

1. Material:

- Seat shall be made of 12 mm (± 1 mm) hot-pressed MR Grade plywood mounted with

moulded PU foam.

- Back shall be of moulded PU foam with inner and outer injection-moulded snap-fit rectangular covers.
- Spine bracket shall be fabricated from 6 mm thick ambose MS plate for rigid support.
- Armrest shall be polypropylene hard-touch moulded, designed in a ring shape.
- Base shall be injection moulded nylon, fitted with five twin-wheel castors (50 mm dia).
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Mechanism shall be push-back type, with 2.5 mm thick CRCA seat plate and 3.5 mm thick CRCA channel plate.
- Features include 360° revolving, tilt tension adjustment, and single-position locking.
- All plastic components shall conform to Grade MI 3530 and be epoxy powder coated (70 microns).
- Mechanism and moving parts shall be cycle-tested for 1.2 lakh operations as per BIFMA standards.
- Chair shall be ergonomically finished, with upholstery neat and free of wrinkles.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Staff chairs shall be measured in numbers (each complete chair unit).
- Rate shall include plywood, foam, backrest, armrest, mechanism, base, castors, fittings, labour, transportation, and installation.
- No extra shall be payable for dimensional tolerance within ± 10 mm.
- Work shall be carried out and handed over as directed by the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.119: STUDY TABLE : Providing and Supplying study table with Overall Size: Width - 750.0 mm Depth-450.0 mm Height - 750.0 mm Material: Top panel is made of 18 mm thick Prelaminated Particle Board All the exposed edges are edge banded with 2 mm thick PVC edge banding. Structure consist of metal frames made of M.S. 25 mm Square Pipes in 0.9 mm Thickness. Drawer assembly consists of drawer front made of 0.6mm CRCA sheet, drawer tray

of 0.8mm CRCA sheet. Hardware: The high quality hardware used Construction: Knock Down construction. Packets: 3 packets. Finish: 18 mm thick Prelaminated Particle Board is in 4501, make GODREJ (SHIRVAL). Side frame structure and Back frame structure are powder coated in shade: MATT TAUPE WHITE. REF NO. 9001904 to thickness of 50 microns (+/-10). Rest all metals are powder coated in shade: S/G CHARBROWN. REF NO. 9000605 to thickness of 50 microns (+/-10). The rate shall include all materials, hardware, and labour etc. complete as per instruction of engineer-in charge

1. Material:

- Overall size shall be 750 mm (W) × 450 mm (D) × 750 mm (H).
- Top panel shall be made of 18 mm thick prelaminated particle board with 2 mm PVC edge banding on all exposed edges.
- Table structure shall consist of MS 25 mm square pipes, 0.9 mm thickness, duly powder coated.
- Drawer assembly shall include drawer front (0.6 mm CRCA sheet) and drawer tray (0.8 mm CRCA sheet).
- Finish shall be prelaminated board in shade 4501 (GODREJ Shirval make) with side and back frames Matt Taupe White (REF 9001904, 50 ± 10 microns) and rest of the metals in S/G Charbrown (REF 9000605, 50 ± 10 microns).
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Table shall be supplied in knock-down construction and packed in 3 packets.
- All components shall be factory finished with uniform powder coating and free from scratches, dents, or welding marks.
- Drawer fittings shall be smooth in operation, with durable high-quality hardware.
- Joints shall be neat, aligned, and securely fastened as per approved shop drawings.
- Work shall be executed as per instructions of the Architect/Engineer-in-Charge.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- Study table shall be measured in numbers (each complete unit).
- Rate shall include all materials, hardware, powder coating, finishing, labour, transport, loading/unloading, and installation.
- No extra shall be payable for dimensional tolerances within ±10 mm.
- Work shall be considered complete upon delivery, assembly, and approval.
- The rate shall be consolidated for all above items.

- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.120: "STUDY TABLE CHAIR : Providing and placing Study Chair 510mm W x 510mm D x 615-825 mm H The seat made from 1.2cm thick hot pressed plywood and back is injection moulded from black Co-polymer polypropylene upholstered with fabric and moulded polyurethane foam together with seat and back covers. The back foam is deigned with contoured lumber support for extra comfort. Seat Size: 450mm W X 420mm D, Back Size 390mm W x 380mm H. The HR polyurethane foam is moulded with density of 45 +/- 2 kg per meter cube and hardness load of 16 +/- 2 kgf as per IS 7888 for 25% Compression. Armrest Assembly of one-piece armrest are fitted to the seat with armrest connecting bracket made of 0.5 +/- 0.05 cm thk. HR steel."

1. Material:

- Overall size shall be 510 mm (W) × 510 mm (D) × 615–825 mm (H).
- Seat shall be made of 12 mm hot-pressed plywood, upholstered with fabric and moulded polyurethane foam.
- Back shall be injection-moulded black co-polymer polypropylene, upholstered with moulded PU foam and fabric seat/back covers.
- PU foam shall be HR grade, moulded with density $45 \pm 2 \text{ kg/m}^3$ and hardness load $16 \pm 2 \text{ kgf}$ as per IS 7888 (25% compression).
- Armrest shall be of one-piece type, connected with a $0.5 \pm 0.05 \text{ cm}$ thick HR steel armrest bracket
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Backrest shall have contoured lumbar support for added comfort.
- Upholstery shall be wrinkle-free, neatly stitched, and tightly fixed to seat/back panels.
- Joints and fittings shall be secure, aligned, and factory finished.
- Hardware and armrest fittings shall be corrosion-resistant and durable.
- All chairs shall be supplied, assembled, and placed at site as per instructions of the Engineer-in-Charge.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Study chairs shall be measured in numbers (each complete unit).

- Rate shall be inclusive of seat, back, foam, armrests, fittings, upholstery, labour, transportation, and installation.
- No extra shall be payable for dimensional tolerance within ± 10 mm.
- Work shall be considered complete upon placement and approval by the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.121: "CONFERENCE ROOM TABLE (3900X900X750) : Providing and supply Conference Table - 3900 x 900 x 750 Providing and supply Conference Table Work top considered in 25mm thick Prelam Particle Board with 2 mm thick PVC edge bidding finish. worktop height considered 750mm from ground level. Legs: Open type legs 50x50mm CRCA Pipe Under structure Metal powder coated finish. Metal powder coated under structure considered. Two 6 modul Pop box consider. etc all necessary hardware included. (Make :As per Approved Make)"

1. Material:

- Overall size shall be 3900 mm (L) \times 900 mm (W) \times 750 mm (H).
- Worktop shall be made of 25 mm thick prelaminated particle board, finished with 2 mm thick PVC edge banding on all exposed edges.
- Legs shall be of 50 \times 50 mm CRCA pipe (open type) with metal understructure in powder-coated finish.
- Table shall include two 6-module pop-up boxes for electrical/ data connections, with all necessary hardware.
- Entire unit shall be supplied in approved make with factory finish and defect-free components.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- All panels and understructure shall be machine cut, factory finished, and free from sharp edges.
- Powder coating of metal parts shall be uniform, minimum 50 microns (± 10), scratch-resistant, and corrosion-proof.
- Tabletop shall be properly aligned, levelled at 750 mm from finished floor level, and fixed securely.
- Edge banding shall be continuous, with neat joints, no peeling, and smooth finishing.
- All work shall be carried out as per approved shop drawings and direction of the Architect/Engineer-in-Charge.
- Work complete as per above specification / manufacturer's specification.

- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Conference table shall be measured in numbers (each complete table unit).
- Rate shall include all materials, hardware, fittings, powder coating, labour, transport, loading/unloading, assembly, and installation.
- No separate payment shall be made for pop-up boxes, hinges, or edge banding.
- Work shall be considered complete upon placement, alignment, and approval by the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.

The rate shall be for a unit of One Nos.

Item No.122: OFFICE TABLE : Table : Providing & fixing office table / staff table having ht of 750 mm Top, with 19mm thk plywood as per Architect/ Engineer Design or Selection and Back and side Ply of table is also made up of 19mm Thick. Top of Table is 19mm thk ply with laminate Finish Per Requirement and All internal & external Joints finished with teakwood beading Patti. Item includes fixing of drawers and keyboard tray and storage with shutters under table as per drawing. With grooves shown as per drawing. All exposed and internal surfaces covered with Laminate Finish of approved shade & Complete as per detail drawings & as instructed by Architect/consultant/ Engineer In charge. Complete with all necessary hardware like nails, ss screws, table chain, TDS channel, adhesives etc. Contractor has to provide all necessary cut outs for Electrical works & no extra payment shall be made for it. All ply should follow IS 710

1. Material:

- Main table size shall be 1200 mm (L) × 600 mm (W) × 750 mm (H) with 25 mm thick prelaminated particle board top, finished with 2 mm PVC edge banding.
- Legs shall be of 50 × 50 mm CRCA pipe (open type) with metal understructure in powder-coated finish.
- Apron shall be of MS perforated sheet with powder coating.
- MDU unit shall include three powder-coated metal drawers with castors and lock, as well as shutters made of 18 mm thick prelaminated particle board with 2 mm PVC edge banding, fixed on auto hinges with lock.
- Backside storage unit shall be of size 1800 mm (L) × 450 mm (W) × 750 mm (H), made of 18 mm prelaminated particle board with PVC edge banding.
- All type of material shall be used as per approved make list and confirming to relevant

IS codes and approved by EIC/Architect.

2. Workmanship:

- Table components shall be precision cut, factory finished, and free of sharp edges or defects.
- All powder coating shall be uniform, minimum 50 microns (± 10), scratch- and corrosion-resistant.
- Drawer operation shall be smooth, with high-quality telescopic channels and locking system.
- Shutters and hardware shall be fixed firmly with proper alignment, auto hinges, and locks in working condition.
- Entire unit shall be supplied, assembled, and placed at site as per approved drawings and Architect/Engineer-in-Charge instructions.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- Work table with MDU shall be measured in numbers (each complete unit including main table and back unit).
- Rate shall include all materials, fittings, hardware, powder coating, labour, transport, loading/unloading, assembly, and installation.
- No separate payment shall be made for locks, hinges, edge banding, or PVC finishes.
- Work shall be considered complete only after final approval by Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.123: SIDE TABLE : Providing and Supplying bed side table Overall Size: Width: 100cm Depth: 45.5cm Height: 45.00cm Material: Top panel of 25 mm and Drawer fronts of 18 mm PVC membrane pressed MDF. Body and drawer panels are made of 18 mm thick Prelaminated Particle Board. All the exposed edges are edge banded with 2 mm thick PVC edge banding Hardware: The high quality hardware used like Roller Slides, Hinges, minifix, dowels is of make Hettich. Packets: 1 packet. Finish: 18 mm thick Prelaminated Particle Board is in Wenge Realistic Pore. 18 mm and 25 mm PVC membrane pressed MDF is in Colarain. The rate shall include all materials, hardware, and labour etc. complete as per instruction of engineer-in charge. Side unit size- 1000x450x450

1. Material:

- Overall size shall be 1000 mm (W) × 450 mm (D) × 450 mm (H).
- Top panel shall be 25 mm thick PVC membrane pressed MDF, and drawer fronts shall be 18 mm thick PVC membrane pressed MDF.
- Body and drawer panels shall be made of 18 mm thick prelaminated particle board with 2 mm PVC edge banding on all exposed edges.
- Hardware shall be of Hettich make, including roller slides, hinges, minifix, and dowels.
- Finish: Prelaminated particle board in Wenge Realistic Pore and PVC membrane pressed MDF in Colarain shade.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Table shall be supplied as 1 packet (knock-down construction), properly packed to prevent transit damage.
- All edges shall be smooth, uniform, and neatly edge-banded.
- Drawer operation shall be smooth and noiseless with Hettich roller slides.
- Fittings shall be rust-proof and securely fixed with correct alignment.
- Work shall be executed as per approved sample and instructions of the Engineer-in-Charge.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- Bed side table shall be measured in numbers (each complete unit).
- Rate shall include materials, PVC finish, hardware, labour, transportation, loading/unloading, and installation.
- No extra payment shall be made for edge banding, fittings, or packaging.
- Work shall be considered complete upon assembly and approval by the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.124: "TV UNIT (CONFERENCE RROOM) : 2150(L) x 400(D) : Providing & fixing projector drawer unit As per detail drawing and reference image and detail shape & size with require accessories.

Top 35 MM th made from 12 mm th IS 303 ply & veneer finish with semi gloss PU finish
Storage body is made of 19mm 303 MR Grade ply with veneer finish and inner side 1.5 mm thick laminate finish including require nos of drawer with all type of fittings ,cutout for air circulation ,require fixtures, hardware Hettich/Haffle make etc complete .SS 304 grade conceal handle shall be provide as per approved selection &detailed drawing and instruction of Employer's representative/ Employer.Rate shall inclusive require fabrication work considering load capacity of AV equipment.The work shall be done as per the approved specifications, sample approved and as directed by the Architect and Engineer-in-charge. The rate shall be for complete item inclusive of all material, labour, wastages, necessary tools & tackles, adhesives consumable hardware & required SS 304 grade hardware/accessories of approved make."

1. Material:

- Overall size shall be 2150 mm (L) × 400 mm (D) (height as per detailed drawing).
- Top shall be 35 mm thick, made from 12 mm IS 303 grade plywood with veneer finish, polished with semi-gloss PU finish.
- Storage body shall be made from 19 mm IS 303 MR grade plywood with veneer finish, with inside finished in 1.5 mm thick laminate.
- Unit shall include required number of drawers with Hettich/Häfele fittings and hardware, cut-outs for ventilation/air circulation, and fixtures.
- Handles shall be SS 304 grade concealed type, selected and approved by the Employer's representative.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Veneer finishing shall be even, defect-free, and polished in semi-gloss PU of approved make and shade.
- All fittings shall be neatly fixed, aligned, and concealed wherever required.
- Drawer channels shall be smooth and heavy-duty to withstand AV equipment load.
- Cut-outs shall be machine-finished and located as per approved drawings for proper air circulation.
- Fabrication and installation shall be carried out strictly as per approved shop drawings and instructions of the Architect/Engineer-in-Charge.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- TV/Projector unit shall be measured in numbers (each complete unit including drawers, fittings, and accessories).

- Rate shall be inclusive of all materials, veneer, polishing, hardware, SS handles, accessories, adhesives, labour, transport, installation, and wastages.
- No separate payment shall be made for fittings, cut-outs, or SS handles.
- Work shall be considered complete upon fixing, finishing, and approval by the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.125: COMPACTOR : Material & Finishes CRCA Sheet . Material Thickness - 0.8mm shelf & panels, . 25 x 50 mm Pipe x 1.2 mm upright frame . 38 x 75 mm Pipe x 2.0 mm Frame for mobile base . Pre-treatment - Iron Phosphating . Finishes - Power coated with 50-60 micron thickness. Features Powder coated Aluminium Die cast rotating handle with safety latch . Aluminium Extrusion Track with levelers . Adjustable Dual purpose shelves (4 Nos.) making 5 loading levels, for Box File / Hanging files with 45 kg UDL carrying capacity per shelves . MFC Platform base in 25 mm thickness . Sloping Ramp for user safety & allowing wheel trolley access . Easy to operate locking mechanism fixed on the rotating handle . Optional 2 tone color design for external cladding. Self Suspended Installation which do not require to hack floors. . Smooth Pulley Belt Drive Mechanism. One bay bodies are push type with handle. Twin Mobile 3 bay. Rate shall inclusive of shop drawing ,mock up sample, all materials, loading, unloading, all taxes, transportation, placing at all floors and for all leads,all accessories as described in item description. As approval of architect. Size : 3.00 (L) x 0.45 (D) x 3nos = 1nos

1. Material:

- Overall size of unit: 3.00 m (L) × 0.45 m (D) × 3 bays = 1 no. unit.
- Main structure made of CRCA sheet – 0.8 mm thick shelves and panels, 25 × 50 mm pipe (1.2 mm thick) upright frame, and 38 × 75 mm pipe (2.0 mm thick) frame for mobile base.
- Mobile base platform made of 25 mm thick MFC board, with sloping ramp for user safety and trolley access.
- Rotating handle shall be powder-coated aluminium die-cast with safety latch, operating a smooth pulley belt drive mechanism.
- Adjustable dual-purpose shelves (4 nos. per bay, making 5 levels) suitable for box files/hanging files, with UDL load capacity of 45 kg per shelf.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- All CRCA components shall undergo iron phosphating pre-treatment and be powder-coated (50–60 micron thickness) for corrosion resistance.
- Aluminium extrusion track shall be provided with levelers for stable movement.
- Locking mechanism shall be integrated with rotating handle for ease of operation and safety.

- Bodies of one bay shall be push-type with handle, while mobile bodies shall be twin 3-bay type.
- Entire system shall be installed as self-suspended (no floor hacking required), with optional two-tone cladding as per approval.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Compactor unit shall be measured in numbers (each complete unit, including bays, base, drive mechanism, and fittings).
- Rate shall include shop drawing, mock-up sample, fabrication, powder coating, all materials, hardware, transport, loading/unloading, taxes, and installation.
- No separate payment shall be made for shelves, ramps, tracks, handles, or drive system.
- Work shall be considered complete only after installation, testing, and approval by the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.126: SINGLE BED : Providing and Supplying single bed with Overall Size: Width - 2060.0 mm Depth-900.0 mm Height - 720.0 mm. Material Headboard panels are made of 18 mm thick Prelaminated Particle Board. All the exposed edges are edge banded with 2 mm thick PVC edge banding Bed leg frame structure consist of metal frames made of M.S. 50 x 25 mm box section in 1.2 thickness Internal Pipes made of 19 x 19 mm box section in 0.9 mm thickness. Headboard pipes are made of 25 x 25 mm box section in 0.9 mm thickness. Mattress holding bkt is made of 0.6 mm CRCA SHEET Mattress frame sheetmetal top is made of 1 mm CRCA SHEET Hardware: The high quality hardware used. Construction: Knock Down construction Packets: 1 packet. Finish: 18 mm thick Prelaminated Particle Board is in 4501, make GODREJ (SHIRVAL). Bed leg frame structure are powder coated in shade: MATT TAUPE WHITE. REF NO. 9001904 to thickness of 50 microns (+-10). Mattress frame structure are powder coated in shade: EPP FR TEX, MILKY WHITE 20K, REF NO. 9003456 to thickness of 50 microns (+-10). Rest all metals are powder coated in shade: S/G CHARBROWN. REF NO. 9000605 to thickness of 50 microns (+-10). The rate shall include all materials, hardware, and labour etc. complete as per instruction of engineer-in charge.

1. Material:

- Overall size shall be 2060 mm (W) × 900 mm (D) × 720 mm (H).
- Headboard panels shall be made of 18 mm thick prelaminated particle board, with all

exposed edges finished with 2 mm PVC edge banding.

- Bed leg frame shall be made of MS 50 × 25 mm box section (1.2 mm thick), with internal pipes of 19 × 19 mm (0.9 mm thick) and headboard pipes of 25 × 25 mm (0.9 mm thick).
- Mattress holding brackets shall be of 0.6 mm CRCA sheet, and mattress frame top shall be of 1 mm CRCA sheet.
- All hardware shall be of approved high-quality make.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Bed shall be of knock-down construction and supplied in 1 packet, with all parts factory finished.
- Powder coating on MS frame and metal components shall be uniform, minimum 50 microns (± 10), and applied in approved shades.
- Edges of particle board shall be smooth, defect-free, and neatly edge-banded.
- Assembly at site shall ensure firm joints, alignment, and stability of structure.
- Work shall be executed as per approved sample, detailed drawing, and Architect/Engineer-in-Charge instructions.
- Work complete as per approved sample/model, overall dimensions 2060 × 900 × 720 mm, with prelaminated particle board headboard, MS box section frame, CRCA sheet mattress frame, powder-coated finish (50 ± 10 microns), and as directed by the Architect/Engineer-in-Charge
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- Single bed shall be measured in numbers (each complete bed unit).
- Rate shall include all materials, hardware, powder coating, labour, transportation, loading/unloading, and installation.
- No separate payment shall be made for edge banding, fittings, or packaging.
- Work shall be accepted only upon assembly and approval by the Architect/Engineer-in-Charge.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.127: Providing and Placing Single Bed Mattress, Pillow, Bedsheet with Pillow Cover

with 12mm thick prelam mdf back- 900x1950x100mm - goldline plus pu form 40 density 300 gsm cotton satin quilt cover. Mattress back putti made of 12mm thick prelam mdf bothside white finish. Kurlon dew pillow 600x400 Fill: Polyester Fibre Quality of shell fabric: 110 GSM cotton satin patti Outer Shell Layer: Cotton Fill Weight (in gms): 650. Bedsheet with pillow 100% cotton of bombay dyeing or eq.

1. Material:

- Mattress shall be of thickness 10 cm or 12.5 cm, as per requirement.
- Mattress shall be dual-sided, with a superior bonded foam base to provide enhanced back support.
- Outer fabric shall be tear-resistant yet breathable, ensuring durability and comfort.
- Mattress surface shall have foam quilting for additional cushioning and long-lasting shape retention.
- All materials shall be of approved make and quality.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Mattress shall be factory-made, uniform in thickness, and free from visible defects such as wrinkles, cuts, or uneven edges.
- Quilting shall be neat, consistent, and durable to withstand regular use.
- Mattress shall be supplied properly packed and protected against transit damage.
- Work complete as per approved sample/model, mattress thickness 100 mm / 125 mm, dual-sided bonded foam with foam quilting and tear-resistant breathable fabric, and as directed by the Architect/Engineer-in-Charge
- Work shall be completed as per approved sample and directions of the Architect/Engineer-in-Charge.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- Swing mats (modular mattresses) shall be measured in numbers (each complete unit).
- Rate shall include supply, packing, loading, unloading, transportation, and placement at site.
- No extra payment shall be made for thickness variation between 10 cm and 12.5 cm.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.

- The rate shall be for a unit of One Nos.

Item No.129: PLUMBING FIXTURE : Providing, fixing, jointing and testing in position of various Bathroom C.P. Fixtures with hydraulic testing complete as per design, drawing and instruction of site incharge. 25mm Dia Control Valve (Make: Zoloto, VB,SANT or equivalent)

1. Material:

- Control valve shall be of 25 mm nominal diameter, make Zoloto / VB / SANT / or equivalent approved make.
- Valve body shall be made of forged/brass construction with chrome-plated finish for durability and resistance to corrosion.
- All accessories, gaskets, nuts, and washers shall be of standard approved quality.
- Fixture shall conform to relevant IS standards for CP fittings.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- All fixtures shall be fixed, jointed, and aligned properly as per manufacturer's recommendations.
- Hydraulic testing shall be carried out after installation to ensure leak-proof performance under required pressure.
- Valves shall be installed with proper sealing compounds/teflon tape to avoid leakage.
- Work complete as per approved sample/make (Zoloto/VB/SANT or equivalent), 25 mm dia control valve, fixed, jointed, tested hydraulically, and as directed by the Architect/Engineer-in-Charge
- Work shall be executed as per drawings, site conditions, and instructions of Engineer-in-Charge.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- Control valves shall be measured in numbers (each complete fitting installed and tested).
- Rate shall include supply, fixing, jointing, testing, labour, accessories, and all incidental charges.
- No separate payment shall be made for testing arrangements or jointing materials.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.

- The rate shall be for a unit of One Nos.

Item No.130: Providing and fixing screw down bib taps of following size. (B) Brass chromium plated screws down Bib Tap. (i) 15mm dia. Jaquar Opal Prime OPP 15037PM (Make :- Jaquar, Hindware , Parryware or Equivalent).

1. Material:

- Bib tap shall be 15 mm nominal diameter, brass body with chromium plated finish.
- Model: Jaquar Opal Prime OPP 15037PM, or approved equivalent make such as Hindware / Parryware.
- Tap shall be of screw-down pattern, heavy duty, durable, and conforming to IS 8931 standards.
- All accessories (washers, nuts, gaskets) shall be included as per manufacturer's specification.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Bib tap shall be installed in correct alignment, level, and orientation as per site drawings.
- All joints shall be made watertight using teflon tape or approved sealing compound.
- After fixing, the tap shall be hydraulically tested under operating pressure to ensure zero leakage.
- Work complete as per approved sample/make (Jaquar Opal Prime OPP 15037PM / Hindware / Parryware or equivalent), 15 mm dia brass chromium plated screw down bib tap, fixed, jointed, tested, and as directed by the Architect/Engineer-in-Charge
- Work shall be executed as per manufacturer's recommendations and Engineer-in-Charge's direction.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Bib taps shall be measured in numbers (each complete fitting fixed and tested).
- Rate shall include supply, fixing, jointing, testing, labour, and all incidental materials.
- No extra payment shall be made for sealing or hydraulic testing.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One nos.

Item No.131: Providing and fixing health faucet with 1 m PVC tube and swivel hook including all fittings complete. (Jaquar Code : ALD-573)(Make :- Jaquar, Hindware , Parryware or Equivalent).

1. Material:

- Health faucet shall be of approved make, model Jaquar ALD-573 or equivalent Hindware / Parryware.
- Faucet set shall include hand spray, 1 m long flexible PVC tube, and swivel hook, with chrome-plated finish.
- All fittings and accessories (nuts, washers, clamps) shall be included as per manufacturer's standard supply.
- Material shall conform to relevant IS standards for sanitary CP fittings.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Faucet shall be fixed in correct alignment and securely mounted with swivel hook at convenient height.
- Joints shall be made watertight using PTFE tape or approved sealing compound.
- After installation, hydraulic testing shall be carried out to check leak-proof performance.
- Work shall be executed strictly as per manufacturer's recommendations and Engineer-in-Charge's directions.
- Work complete as per approved sample/make (Jaquar ALD-573 / Hindware / Parryware or equivalent), health faucet with 1 m PVC tube and swivel hook, fixed, jointed, tested, and as directed by the Architect/Engineer-in-Charge.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- Health faucet shall be measured in numbers (each complete unit installed and tested).
- Rate shall include supply, fixing, jointing, testing, hardware, labour, and transport.
- No extra payment shall be made for accessories or testing.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.132: Providing and fixing white glazed vitreous china wall mounting type (European

type) water closet with C.P. bolts, nuts, C.I. Chair or other hanging arrangement, white solid plastic seat with lid, C.P. brass hinges and rubber buffers, Metropole flush valve regular 40mm size (concealed body) with exposed shut off provision , C.P. brass screws and washers complete, including cutting and making good the walls floors where required. Wall hung EWC (Jaquar - VGS-WHT-81953UF), (FLV-1093N - Metropole Flush Valve) & (FLV-1071 - Concealed Flush Valve Complete) matching white plastic seat with lid & CP brass hinges & CP push plate . (Make :- Jaquar, Hindware , Parryware or Equivalent).

1. Material:

- Water closet shall be white glazed vitreous china wall-mounted European type (EWC), model Jaquar VGS-WHT-81953UF or approved equivalent Hindware / Parryware.
- Set shall include white solid plastic seat with lid, fitted with CP brass hinges and rubber buffers.
- Flushing system shall consist of Metropole flush valve 40 mm (Jaquar FLV-1093N) and concealed flush valve complete (Jaquar FLV-1071), with matching CP brass push plate.
- Fixing arrangement shall include CP bolts, nuts, CI chair or equivalent hanging brackets, CP brass screws, and washers.
- All fittings shall conform to relevant IS standards for sanitary installations.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- EWC shall be installed in proper alignment and securely fixed to the wall with CI chair/hanging arrangement.
- Flush valve shall be installed with provision for exposed shut-off and concealed body, ensuring leak-proof operation.
- Walls and floors shall be cut, chased, and restored neatly where required.
- Installation shall be completed with smooth joints, watertight sealing, and proper testing.
- Work complete as per approved sample/make (Jaquar VGS-WHT-81953UF with FLV-1093N & FLV-1071 or Hindware/Parryware equivalent), wall hung EWC with matching seat & lid, CP brass hinges, concealed flush valve, CP fittings, fixed, jointed, tested, and as directed by the Architect/Engineer-in-Charge.
- Work shall be executed strictly as per manufacturer's guidelines and Architect/Engineer-in-Charge's directions.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- Wall hung EWC set shall be measured in numbers (each complete unit installed and tested).

- Rate shall include EWC, seat & lid, flush valve, CP brass fittings, cutting, making good, labour, transportation, and installation.
- No separate payment shall be made for wall chasing or CP screws/fasteners.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of Nos.

Item No.133: Supply, Installation, Testing & Commissioning vitreous Matrix Set including matrix EWC (European type water closet) with cistern, wall hung matrix wash basin, lever arm faucet for ease of operation, centre pre-punched tap hole, grab bar with slightly lower height for added convenience & fixed to wall with brackets including cutting and making good the wall and floors as required. Colour Star White. (Make :- Jaquar, Hindware , Parryware or Equivalent).

1. Material:

- Matrix set shall include European type vitreous china EWC with cistern, wall-hung matrix wash basin, and lever arm faucet for ease of operation.
- Wash basin shall have centre pre-punched tap hole, suitable for lever-type faucet installation.
- A grab bar of ergonomic design shall be provided, fixed to the wall at slightly lower height for user convenience.
- All ceramic fittings shall be in Star White colour, of approved make Jaquar / Hindware / Parryware or equivalent.
- Mounting brackets, nuts, bolts, washers, and all required CP brass fittings shall be included.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- EWC and basin shall be fixed securely with wall brackets, CI chair, or approved supporting system.
- Grab bar shall be fixed firmly to withstand user load, with concealed fasteners.
- All joints shall be watertight, properly sealed with approved sealing compound/teflon tape.
- Walls and floors shall be cut and restored neatly where required, ensuring no visible damage.
- Installation shall be tested hydraulically for proper performance, as per IS standards and directions of Engineer-in-Charge.
- Work complete as per approved sample/make (Jaquar / Hindware / Parryware or equivalent), vitreous matrix set including EWC with cistern, wall hung basin with lever faucet, grab bar, colour Star White, fixed, jointed, tested, and as directed by the Architect/Engineer-in-Charge

- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Matrix set (EWC + basin + lever faucet + grab bar) shall be measured in numbers (each complete set installed and tested).
- Rate shall include supply, installation, testing, cistern, faucet, fittings, grab bar, wall/floor cutting and making good, labour, transport, and all accessories.
- No extra payment shall be made for fasteners, brackets, or minor site adjustments.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.134: Providing and fixing White glazed vitreous Wash Basin Round Over-Counter, size 450 mm dia., with supporting in stone flooring, 1 no, 32 mm CP Bottle trap with extension piece to wall flange with rubber adopter for waste connection, 1.2m Flexible Pipe [1No] and waste coupling. Etc complete. Wash Basin Table Top - 420x420x155 mm (CNS-WHT-905) (Make : Jaquar, Hindware, Cera, Somani or Equivalent)

1. Material:

- Providing and fixing white glazed vitreous china wash basin, round over-counter type, of size 450 mm dia.
- Wash Basin Table Top model: 420 x 420 x 155 mm (CNS-WHT-905 or equivalent approved model).
- Basin to be supported on stone/granite counter top with proper opening cut and edge finishing.
- Fittings shall include 32 mm CP brass bottle trap with extension piece, rubber adopter for waste connection, 1 no. waste coupling, and 1.2 m flexible CP connection pipe.
- All materials shall be of approved make: Jaquar / Hindware / Cera / Somany or equivalent.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Basin shall be placed true to line and level, securely sealed to counter surface with waterproof adhesive/sealant.
- Waste coupling and bottle trap shall be fitted leak-proof and connected to waste outlet with proper slope.

- CP fittings and accessories shall be polished, rust-resistant, and aligned neatly.
- Work complete as per Item description Wash Basin Round Over-Counter 450 mm dia. with fittings (Jaquar/Hindware/Cera/Somany or equivalent), including CP bottle trap, waste coupling, flexible connection, fixing, jointing, testing and as directed by the Architect/Engineer-in-Charge
- All work shall be carried out as per manufacturer's instructions and directions of the Engineer-in-Charge
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Wash basin with complete set of fittings (bottle trap, waste coupling, flexible connection, and installation) shall be measured per number (each unit complete).
- Rate shall include cutting, fixing, sealing, fittings, labour, materials, transport, making good of counter slab/wall, and testing for leakages.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.135: Providing & fixing in position 15 mm C.P. brass angle cock of best quality with 1.2 Rmt Long pvc Tube and accessories with necessary fittings etc. complete. (CODE : FLR-5053N) (Make: Jaquar, Cera, Hindware, Somani or Equivalent)

1. Material:

- Providing and fixing 15 mm dia. C.P. brass angle cock of best quality, heavy-duty type, code FLR-5053N (Jaquar) or equivalent approved model.
- Angle cock shall be chromium plated with brass body, high-pressure tested, and leak-proof.
- Supplied with 1.2 Rmt long flexible PVC tube with CP accessories and necessary fittings.
- Makes: Jaquar / Cera / Hindware / Somany or equivalent.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Angle cock shall be fixed in proper alignment, securely tightened with PTFE tape to prevent leakage.
- Tube shall be connected firmly with proper washers and CP nuts for watertight joints.

- Installation shall be carried out as per manufacturer's specifications and as directed by Engineer-in-Charge.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Item shall be measured and paid per number (each complete set) including angle cock, tube, fittings, installation, and testing.
- Rate shall include all labour, materials, tools, and making good the surface if required.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.136: Providing & fixing in position 15 mm C.P. brass pillar cock of best quality with necessary fittings etc. complete.[Jaquar FLR - CHR-5011N or Equivalent)

1. Material:

- Pillar cock shall be of brass body with chrome plating, tested for high pressure and leak-proof performance.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Pillar cock shall be fixed in proper alignment on wash basin/counter with suitable CP brass fittings, nuts, rubber washers, and PTFE tape to ensure leakproof joints.
- Installation shall be carried out as per manufacturer's specifications and as directed by Engineer-in-Charge.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Item shall be measured and paid per number (each complete set) including fittings, installation, and testing.
- Rate shall include cost of all materials, labour, tools, and making good surfaces if

required.

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.137: Providing and fixing PVC SWR Nahni trap IS 14735 for drain -100 mm diameter with jail of the following nominal diameter of self cleaning design with C.I screed down or hinged grating including the cost of cutting and making good the wall.

1. Material:

- Nahni trap shall be PVC SWR type conforming to IS 14735.
- Trap shall be provided with CI screwed down or hinged grating of approved make.
- All necessary fittings, couplings, solvent cement, and accessories shall be included.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Trap shall be fixed in position as per drawing and direction of Engineer-in-Charge.
- Wall/floor cutting required for installation shall be carried out carefully, with making good of walls/floors with cement mortar 1:4 after fixing.
- Joints shall be leak-proof and watertight, tested for proper flow and self-cleaning.
- Grating shall be fixed securely and flush with finished floor level.
- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/ Architect.
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- Measurement shall be taken in numbers (Nos.) of PVC SWR Nahni traps fixed in position complete.
- Rate shall be inclusive of cutting, fixing, jointing, accessories, CI grating, making good of walls/floor, testing and finishing.
- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Nos.

Item No.138: Providing and fixing TOWEL RING SQUARE , as approved by the architect.Work complete including all type of fittings , etc complete as per suggestion of Architect/EIC. (Code

: ACN-1121BN) (Make: Jaquare, Cera, Hindware, Somani or Equivalent)

1. Material:

- Towel ring square shall be used as per approved sample by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Towel ring square shall be fixed with necessary fittings, accessories etc complete as per detailed drawing.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Number for area of work done.

Item No.139: Providing and fixing SOAP DISH HOLDER as approved by the architect. Work complete including all type of fittings , etc complete as per suggestion of Architect/EIC. (Code : ACN-1135N) (Make: Jaquare, Cera, Hindware, Somani or Equivalent)

1. Material:

- Soap Dish Holder shall be used as per approved sample by EIC/ Architect.
- All type of material shall be used for work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Soap Dish Holder shall be fixed with necessary fittings, accessories etc complete as per detailed drawing.
- The whole works is to be completed as per design, sample material, and any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors.
- The work done shall be measured in Number for area of work done. The rate shall be for a unit of one number.

Item No.140: Supply, storing, installation and testing liquid soap dispenser with Cp/ SS cap and bracket, fixed to wall with CP brass screw etc. complete. (Make : Hindware / cera/ jaguar/ Grohe)

1. Material:

- Soap Dispenser shall be used as per approved sample by EIC/ Architect.
- All type of material shall be used for work as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- Soap Dispenser Holder shall be fixed with necessary fittings, accessories etc complete as per detailed drawing.
- The whole works is to be completed as per design, sample material, and any other requirement shall be as per instruction of EIC/ Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors.

The work done shall be measured in Number for area of work done. The rate shall be for a unit of one number.

Item No.141: Providing and fixing smartflow hand dryer, as approved by the architect. Work complete including all type of fittings, etc complete as per suggestion of Architect/EIC. (Code : HDR-SSF-AK2807) (Make: Jaquare, Cera, Hindware, Somani or Equivalent)

1. Materials:

- Hand dryer shall be used as per approved sample by EIC/ Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/ Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/ Architect.
- Hand dryer shall be fixed with necessary fittings, accessories etc complete as per detailed drawing.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.

- No extra payment will be given for any of the reasons.
- The work done shall be measured in Number for area of work done.

Item No.142: Providing and fixing Kitchen sink with C.I. Or M.S. brackets, painted white including cutting holes in walls and making good the same but excluding fittings. (C) Vitreous China Sink.(i) 600mm x 450mm x 150mm size

1. Material:

- Kitchen sink with C.I. or M.S. brackets shall be used as per approved sample and confirming to relevant IS codes and approved by EIC/Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.
- Work complete as per relevant specification of Item No: 23.130, page No -167 in General specification R & B booklet for building works.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- Rate to be inclusive of all material, wastage, necessary tools tackles etc for fixing at all heights and for all floors.
- The work done shall be measured in Number for area of work done. The rate shall be for a unit of one number.

Item No.143: 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 pluge with C.P. brass screws and washers.

1. Material:

- The 600 x 450 mm. size mirror shall be of superior glass with edge rounded off 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. Workmanship:

- The mirror of 600 mm.x450mm. Size mounted on A.C. sheet orplywood6mm. 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. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, labour, scaffolding etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured in Number for area of work done.
- The rate shall be for a unit of Each.

Item No.144: Providing and fixing C.P. brass shower rose with 15mm or 20mm inlet.(A) 100mm dia. Each.

1. Workmanship:

- Work complete as per relevant specification of Item No: 23.141(A) page No -149 in General specification R & B booklet for building works.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of each

BORE WELL

(SUB- ESTIMATE - 2)

Item No. 01: Drilling 300mm dia.pilot hole hydrolic drilling machine & drilling trully vertically (testing by vertically test) bore hole in alluvial strata,any kind of soil incl.sand,murum,hard murum,soft rock,hard rock incl.cost of bentonite powder done by mud flushed rottary equipment bore hole should stand at least for 27hrs.incl.lowering the pipes in position as directed and incl.supplying and packing gravel of 4mm to 6 mm size etc. comp. as directed.

In General following sequence shall be adopted in carrying out the job:

- Pushing of the completed segments of the pipe shall be commenced as per the procedure described in above paras till the entire length of the pipe in the embankment is built up.
- Permission for Highway & Canal crossing shall be procured by agency/department from competent authority of the concerned department. Necessary letter of recommendation shall be given by department.
- At canal, public state highways, at such other crossings as are shown in the construction drawings issued by the company the pipeline shall be installed in MS casing of as recommended by canal / state highway authority casing pipes conforming to the specifications given herein.
- The casing pipes / box shall be installed in accordance with the details given in drawing and the casing, bushing and insulators, etc., shall be installed on the carrier pipe as detailed in drawings. Casing pipe size shall be as per Engineer in charge instruction to facilitate the insertion of the later without disturbing the casing pipe and to provide adequate drainage, Casing shall be installed with even bearing throughout its length and shall slope towards one end, as specified or desired by the engineer-in-charge. The ends of the casing shall be sealed to outside of carrier pipe in accordance with the details given in drawing.
- Before installation, holes for installing vent pipes shall be cut and burrs if any shall be removed. The welding of both carrier pipe and casing pipe shall be done in accordance with the welding specifications, given herein. Before installing the casing pipe, it should be cleaned of all internal obstructions and during installation care should be taken to keep the inside clean
- The section of carrier pipe to be placed in any casing shall be closed at each end, hydrostatically tested preferably with dead weight tester for at least two hours. Only on successful completion of this test, the carrier pipe shall be inserted in the casing pipe. The installation of casing may open cut as circumstances may permit or require as directed by the engineer-in-charge.
- The installation of casing in bended section of the carrier pipe shall be performed by meter bends of the casing pipe provided that the length of each meter cut out of casing pipe shall be such as to provide a clearance of at least 1-1/2" between the inside of the casing pipe and the outside of the coated carrier pipe.

- Excavation for casing installation shall be immediately backfilled at the completion of the work with suitable solid matter and packed thoroughly to prevent seepage of water into the excavation.

ROAD, RAILWAY AND IRRIGATION CANAL CROSSINGS:

- At road, canal and railway crossings the work shall be performed to the specifications of local authorities or
- Such public bodies as may be in charge (S) of roads, railways and canals to be crossed.
- In case, however the minimum requirements of the governing agencies are less than those set out in the drawing or the specifications given herein, then the requirements given in the drawings and the specifications given for encased line shall be followed.
- Whereas the casing pipe in the case of encased line to be laid normal by boring, tunneling, engineer- in-charge may at his discretion permit open-cuts to be made for the installation of casing provided, however, that the TENDERER shall procure the necessary permit / license for the same from competent authority. At locations wherein the open cut methods are permitted, the TENDERER shall pass the carrier pipe through the casing located in the trench after the approval of the engineer-in-charge in writing and care shall be exercised to avoid damage to pipe coating and wrapping during this operation. The TENDERER shall produce a certificate in writing from concerned authorities for its satisfactory restoration and payment therefore.
- At all crossings the carrier pipe shall be laid straight without bends so that if necessary the pipe at a later date may be replaced without cutting the casing. The carrier pipe shall extend at least 2 meters beyond the end of casing pipe at either end.
- At railway crossings the TENDERER shall eliminate unnecessary bending of pipe to conform to the contour of ground by gradually deepening the ditch at such approaches as directed by the engineer-in- charge. Where the installation of the casing has been made by open cut TENDERER shall install suitable temporary bridge work ensuring the safety of the traffic aids and safeguards for protection of the public safety, or he shall provide suitable diversions as desired by the engineer-in-charge.
- At all railways pipeline crossings shall be bored with horizontal boring machine. The method of carrying out a cased crossing by boring for various crossings on this pipeline route shall be jointly inspected by the representative of the COMPANY and TENDERER for each category of work prior to commencement of actual work.
- Pipeline under railway track and irrigation canal an applicable portion of the right-of-way shall be encased in accordance with the specification. This item of work shall include, necessary clearing and grading required therefore, trenching to the depths and widths required, welding of casing and carrier pipes, testing, lowering in, installation of vent assemblies, end seals, insulator and all other fittings that may be required, backfilling, clean up, complete restoration to the original condition and further strengthening and protective works as may be required. The work shall be carried out in accordance with the drawings and as directed by the engineer-in-charge. For various operations mentioned above, the specifications pertaining to these operations shall apply in addition to the specifications given herein.

- The TENDERER shall be permitted to use William Sons type Neoprene seals in place of concrete end seals for the crossings. The item shall be procured by the TENDERER himself as per the provisions under the appropriate head of work in case TENDERER so desires. The representative of the COMPANY may also be associated to determine the quality of the material and its delivery schedule from the open market. However, the particular work defined under the proper head shall not be delayed on account of non-availability of Neoprene end seals. In such case, concrete seals may be provided.
- On both ends of pushing concrete supports are to be provided as per direction of engineer in-charge.

Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured in running meter of work done. The rate shall be for a unit of Running Meter.

Item No. 02: Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 mild steel screwed and socketed/plain ended casing pipes of required dia, conforming to IS: 4270, of reputed & approved make, including painted with outside surface with two coats of anticorrosive paint of approved brand and manufacture, including required hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer-in-charge.

(B) 200 mm nominal 6 mm thick

1. Material:

- The M.S. E.R.W plain end medium duty pipe as per approved sample by EIC/Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.

- The rate shall be for a unit of One Meter.

Item No. 03: Development of hole by air compressor having capacity 400 cfm/100 psi till sand free discharge of water incl.testing of water supply flow etc. comp. as directed.

1. Material:

- The 400 CFM/100 PSI capacity air Compressor as per approved sample by EIC/Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Job.

Item No. 04: Supplying & Fixing 50 mm dia UPVC column pipe approved make with necessary fittings like long threaded couplins,bend, T, Elbow, etc. required as per directed.

AIM AND FIELD OF APPLICATION

- This specification has the aim to regulate the modalities of delivery and testing of UPVC pipes. For conduction of water and food- fluids under pressure, conforming to Digs 06/04/2004 n. 174 “regulation. Concerning materials and objects which can be used within fixed plants of purification, treatment, conduction, and distribution of water used for human consumption”.

STANDARDS OF REFERENCE

- UNI EN 1452 pipes systems of plastic material for conduction – unclassified Polyvinyl-chloride – UPVC.

REQUIREMENT PRESCRIBED

- **RAW MATERIAL** The blend has mainly to be made of PVC (polyvinyl-chloride) with the sole addition of not toxic fluid fiction material and stabilizers, inert charges and other additives in quantities necessary to extrusion and to give a guarantee of stability of the characteristics of the polymer both during the working process and the life of the product.

- The blend used for the production of pipes, either in granules or powder, must not be used for any other utilization or working process than the required for the production of pipes.

The use of the following materials is not admitted:

- Plats iffier and/or mineral charges which may alter the mechanical and hygienically characteristics of the pipe.
- PVC from regeneration of already used polymers, even if selected.
- The use of material having been extruded once, obtained from grinding of pipes and fittings, which had already been extruded, even if they have the characteristics which conform to this specification.
- The characteristics from PVC powder have to be conform to the requirements of UNI EN 1452-1 and satisfy the data indicated in the following table:

Characteristics	Requirements
K Value	55 ÷ 70
Apparent specific weight	0,5 ÷ 0,6
Particle size measurement	> 250 mm 5% max. < 63 mm 5% max.
Residual VCM (Vinyl chloride - Monomer)	<1 ppm (1mg/kg max.)
Volatile substances	≤ 0 3%

CARACTERISTICS OF U - PVC BLEND

- The characteristics of the blend in shape of a pipe, must correspond to the requirements of UNI EN 1452-1 and satisfy the following table

Characteristics	Requirements
M.R.S. (according to ISO/TR 9080)	≥ 25 MPa
Specific weight	1, 35÷1, 46 g/cm ³
Unitary yield point	≥ 48 MPa
Yield	< 10%
Coefficient of elasticity	> 3.000 MPa
Coefficient of linear thermal expansion	0, 06÷0, 08 mm/m°C
Thermal conductivity	0, 13 kcal/mh°C

PIPES

- The pipes have to be produced with raw material (PVC blend) corresponding to the requirements as indicated in the previous table and as follows:

Colour	Grey considering that pipes may be exposed to sun-rays, a minimum fading of the colour on one part of the pipe must not compromise the quality of the pipe to be used and therefore may not be a reason of rejection of the same,	RAL 7011
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	on delivery. RAL 7011	
Aspect	the inside and outside surfaces of the pipes must be smooth, clean and without cavities, impurities and porosities or any other irregularity on the surfaces which might hinder their conformity to the norms of reference and these specifications. UNI EN 1452	UNI EN 1452

MECHANICAL AND PHYSICAL CHARACTERISTICS

- The characteristics of the pipes must conform to the requirements of UNI EN 1452-2 and satisfy the requirements of the following table:

Characteristics	Requirement			Methods
Shock resistance	T = 0°C - TIR < 10% Conform to schedule 6 of UNI EN 1452-2			UNI EN 1452-2 744
Resistance to interior pressure	No yield during the test 20 °C / 1h / sigma= 42 Mpa 921 20 °C / 100h / sigma= 35 MPa 60 °C / 1000h / sigma= 12.5 MPa			UNI EN 921
Temperature of softening Vicat (VST)	≥ 80 °C	Conform to UNI EN 727		UNI EN 727
Longitudinal shrinkage	5% The pipe must not show delamination, blister or leakage	Testing Temperature Time of immersion or: ≤ 8 mm > 8 mm	50 °C 5 min 10 min	UNI EN 743 Method A: In water In liquid
		or		
		Testing Temperature Time of immersion ≤ 8 mm > 8 mm	50 °C 10 min 10 min	UNI EN 743 Method B: In air
Resistance to dichloromethane at a specified temperature	No attack in any part of the surface of the test piece	Testing Temperature Time of immersion	50 °C 10 min	UNI EN 580

CONNECTIONS SOCKET / GASKETS

- The connections are made by means of sockets with elastomeric gasket. Gaskets have not to be toxic at all according to the present norms for this subject (sanitary discipline) and conforming to norm UNI EN 681/1.
- The system of connection has to correspond to the requirements of UNI EN 1452-5 for every single class of pressure (PN) and has to be tested according to:
- EN ISO 13844 elastomeric gaskets for socket connections to be used with UPVC pipes – testing method for tightness of negative pressures;
- EN ISO 13845 elastomeric gaskets for socket connections to be used with UPVC pipes

- testing method for tightness of internal pressure with angular deflection of the connection.

MINIMUM MARKING

- The minimum marking on each meter of pipe must be indelible and show at least the following data:
- Name of the producer and/or trade mark of the product
- Number of the norm of the system (UNI EN 1452)
- Quality mark of the product - raw material (U-PVC)
- Outside diameter of the pipes x wall thickness
- Nominal pressure (PN) and SDR and/or series (s ...)
- Day, month, year and shift of production
- Number of the extrusion line
- Date of production
- Customers may anytime ask further information's to the producer

GEOMETRICAL CHARACTERISTICS - DIMENSION OF PIPES

- Diameters, thickness and tolerances:
- pipes have to be formed (SDR) as foreseen by the National Introduction of UNI EN 1452 and have dimensions conforming to schedules 1,2,3 of Chapter 6 of UNI EN 1452-2 "geometrical characteristics".
- Particularly in this discipline there is shown the prospectus including minimum wall thicknesses indicated in mm

Nominal outside diameter	Nominal Wall thicknesses (minimum) (mm)			
(MM)	PN 6 bar	PN 10 bar	PN 16 bar	PN 20 bar
20			1.5	1.9
25			1.9	2.3
32			2.4	2.9
40	1.5	1.9	3.0	3.7
50	1.6	2.4	3.7	4.6
63	2.0	3.0	4.7	5.8
75	2.3	3.6	5.6	6.8
90	2.8	4.3	6.7	8.2
110	2.7	4.2	6.6	8.1
125	3.1	4.8	7.4	9.2
140	3.5	5.4	8.3	10.3
160	4.0	6.2	9.5	11.8
180	4.4	6.9	10.7	13.3
200	4.9	7.7	11.9	14.7
225	5.5	8.6	13.4	16.6
Nominal outside diameter	Nominal wall thickness (minimum) (mm)			
(MM)	PN 6 bar	PN 10 bar	PN 16 bar	PN 20 bar
50	2	6	4.8	8.4
80	9	0.7	6.6	0.6
15	7	2.1	8.7	3.2

55	7	3.6	1.1	6.1
00	8	5.3	3.7	9.4
50	0	7.2	6.7	3.1
00	2.3	9.1	9.7	6.8
30	5.4	4.1		
10	7.4	7.2		
00	9.6	0.6		
00	2.0			
000	4.5			

Lengths

- Pipes have to be delivered for all outside - diameters asked for in lengths of 6 meters (socket included).

Ends of pipes

- The pipe has to have plain ends, sharply cut and must be perpendicular to the axis of the same pipe, having an outside chamfer of about 15°.

CONTROLS AND RESPONSABILITY

- The contractor reserves the right to himself and to the person he is going to uncharged to assist the tests and controls carried out to check if the requirements prescribed by the norms of production and by these specifications are fulfilled.
- The supplier, therefore, will do his best to favor the free access of the persons uncharged by the contractor to the production plants of the pipes in a moment whatever during the different phases of production and to the laboratories during the phases of control and testing, communicating within a reasonable period of time the beginning date of production of the pipes ordered. He will further give to the persons in charge, full liberty of actions to make the controls necessary, in line with the requirements of production.
- The contractor reserves himself the right to check by means of taking samples of pipes and/or of the the raw material, the correspondence of the same to the present specifications and to the supplier's declarations.
- It is understood that the presence of the persons uncharged, during the tests, will not be a substitute of the controls to be carried out by the seller, who is the only one responsible for the quality of the pipes he produces.
- The seller will bear any costs deriving from the delivery of pipes not conforming to the requirements of these specifications.

DOCUMENTS AND CERTIFICAZIONS OF QUALITY

- The supplier has to enclose to his offer:
- The certification of conformity of the Internal Quality System conforming to UNI EN ISO 9000, issued by an in depend Institute or Company in conformity with UNI CEI EN 45012;
- A signed declaration regarding the use of virgin raw material (blend), which does not contain already worked material or substances which can damage the human body;
- A certificate of conformity of the product to norm UNI EN 1452 for pipes, issued by an

independent Institute, Body or Company, in conformity with UNI CEI EN 45011.

AFTER SALE ASSISTANCE

- If agreed upon, when the order had been made, the supplier has to guarantee as follows:
- Assistance by means of qualified technicians at the begin of work within the building yard in order to check the correct way of installation (recommendations according to UNI EN 1452-6 and ENV 1046).
- Assistance of competent personnel regarding the procedures of testing the laying within the building yard (in case of water conducts, for seen by the law according the the Ministerial Decree DM 12.12.85) of buried pipe-lines for fluids under pressure (execution according to method UNI EN 805, hydraulic test of conducts with a viscoelastic behavior).

HANDLING AND TRASPORT OF MATERIALS

- For the handling and transport of the pipes there have to be adopted all those procedures which are idoneous to make sure that the same reach at destination completely integral. A possible deterioration of the pipes, ascertained on delivery of the same, will turn out into a claim of defect material. The pieces claimed will remain at the disposal of the supplier. Possible repairing or controls will be at the supplier's charge. As for loading, transport, unloading and storing of the pipes and special pieces, reference will be made to the prescription of the Ministerial Decree (D. M.) 12.12.1985 (and successive modifications and integration) .

TRANSPORT OF PIPES

- When transporting pipes, the loading surface must not be rough. It is necessary to support pipes for their whole length, thus avoiding the possibility that pipes get damaged due to vibration. In order to fix the load, straps of hemp, nylon or similar material can be used, taking care that the pipes will not get damaged.

LOADING; UNLOADING AND HANDLING

- if loading and unloading of a means of transport or, anyway the handling of the material is done by means of a crane or the arm of an excavator, pipes have to be lifted in the center by an equalizing rocker arm of at least 3 meters. If these works are done by hand, it has to be avoided to slide pipes on to the side boards of the mean of transport or, anyway, on hard and sharp objects. The person in charge of the building site has to check all working processes of unloading in order to be sure of their regularity. Each damaged product will be identified by writing " not to be used" and will be isolated in an extra area. The person in charge has to communicate as soon as possible, the existence of a damaged product to the Contractor's Director of Work, who then will take the actions necessary, according his unobjectionable opinion. If a crane is used, there has to be an efficient system of communication between the worker inside the crane and the worker beside the mean of transport.

STORING OF PIPES

- The best solution for the storage of pipes would be to use wooden crates or crates of other materials, to be able to resist to the weight of the pallet put on top. The storage has to be carried out with great care and the pallets have to be aligned. The supporting

surface of the pallets stored has to be levelled, not to be rough and must not have stones with sharp edges. Every possible idoneous solution has to be adopted in order to avoid any interference with the local traffic, both Vehicles and pedestrians, and with any other already existing structure. The pipes have to store in a way to avoid possible accidents due to an unforeseen movement of the same.

CONSERVATION OF TH MATERIALS

- It is absolutely necessary to adopt measures that in case of long term storage, pipes of UPVC and plastic fittings can be put inside, away from sun-rays, in order to avoid the risk of degradation of the polymers and the decay of their chemical, physical, and mechanical properties. Fittings may be packed in different ways according to their shape, dimensions and type of transport. If they are delivered without packaging, it has to be taken care not to pile them up without method, thus avoiding a collision between the single pieces or between the fittings and other heavier materials. In any case they cannot be put near heating devices or exposed to direct sun-rays until they are used. Similar indications have to be followed for the conservation of lubricants.

MODALITY AND PROCEDURES OF LAYING IN SITE

- Typologies of trenches : The type of trench required by the project based on the evaluation of loads, the type of soil and the organization of the building yard, has to be scrupulously carried out in the next phase of execution.. During the phase of execution it is therefore important to have a scrupulous correspondence between the project and its effective realization. In the table below there are some main typologies of trenches showing the relationship between the diameter of the pipes (D indicated in meters), the width of the trench at the level of the upper part of pipe (B in meters) and the height of filling on the upper part of the pipes (H in meters).

Type of Trench	B(width of the trench)
Small Trench	$\leq 3 D$ $< H/2$
Large Trench	$3 < D$ $< 10 < H/2$
Embankment	$\geq 10 D$ $\geq H/2$

Small Trench

- This is the best way to lay a U-PVC pipes. The pipe does not have to bear all the load from above, as it transmits part of it to the surrounding soil depending on the deformation due to the deflection, the product is submitted to.

Large Trench

- The load the pipe has to bear will be more than the one it has to support in a small trench. For this reason this has to be considered during the planning. This hypothesis has to be born in mind in order to obtain a certain security when making the calculations of the dimensions.

Embankment (positive position)

- The upper part of the pipe is put on a natural level of the soil. If there is much load passing through, this typology has not to be adopted due to sinking of the soil in absence of excavations on the sides.

Terrapin (negative position)

- The pipe is put at a lower level than the natural one of the soil. Due to friction, even if a very light one, between the filling material put on the embankment and the natural sides of the trench, the pipes can support slightly more load than those in the positive position, but in any case less than those laid in a small and large trench. Therefore, even this typology is not advisable.

Depth of the trench

- The depth of the pipes H (in meters) understood as distance between the soil and the upper part of the pipes must satisfy the most protective of the following requirements, where D is the outside diameter expressed in meters.

$$H \geq 1,0$$

$$H \geq 1,5 D$$

- Width of the trench
- This is determined by the laying depth and by the diameter of the pipe, as it has to allow the settlement of the bottom, the connection of the pipes and the movement of the workers. The minimum width of the soil B (in meters) is normally:
 - $B = D + 0,5$ with $D \leq 0,4$ m
 - $B = 2D$ with $D \geq 0,5$ m.
- On the other side, the inferior limit values have not to be exceeded very much as the efficiency of the trench is higher when the width is smaller.
- Bottom of the trench
- The trenches have to be made without bumps or unevenness in order to establish a continuous support for the pipes. It is not advisable to use a bottom with a concrete bed or similar as this will make the structure rigid.
- When the trenches are open on heterogeneous soil, situated on hills or in the mountains, it is necessary to anchor in order to avoid possible sliding of the soil.
- If there might be an instability of the soil due to water within the trench, it is necessary to re-inforce the soil bottom by means of draining pipes under the canalization.
- Around these pipes has to be put a compact strata of gravel or other material suitable to this purpose.
- In other words, it is necessary to make sure that there won't be any possibility that the filling material could move due to ground water.
- Laying Bed
- There has to be a stabil laying bed on an even level, for canalization of U-PVC pipes. It has to be free from pebbles, heap of stones and possible other materials. The laying bed must not be build before having a complete stabilization of the trench bottom. The material used in normal laying conditions is sand mixed with gravel of a maximum diameter of 20 mm. If the soil has slopes, it is advisable to avoid sand, giving preference to gravel or crushed stones without edges, cut to pieces of maximum 10/15 mm. The material has then to be accurately compacted and has to achieve a thickness of minimum $(10 + 1/10 D)$ cm.

Norms of compacting and quality control

- As U-PVC pipes are flexible, the uniformity of the surrounding soil is basically for a correct construction of a carrying structure, because the soil, deformed by the pipes,

reacts in a way to give a help in supporting the load. In order to assure stability and integrity of the pipes laid, within the time, it is pointed out that the contractor has to take a great care regarding the laying of the pipe bed, the support and the first covering of U-PVC and has to apply scrupulously the present norms.

- The degree of compacting of the material, which forms the supports, has a determining influence on the value of diametric deformations (Δ/D) of the pipes. This value, which must not exceed the limits permitted, can be deduced by the formula of Spangler,

$$\Delta = 0,125 \cdot Q$$

- $E = (s/D)^3 + 0,0915 \cdot E_1$
- With:
- Q = total external load on the pipe [kg/m];
- E = modulus of elasticity of the pipe [kg/m²];
- s = thickness of the pipe [m]; D = diameter of the pipe [m];
- E_1 = modulus of elasticity of the soil [kg/m²].
- Particularly E_1 depends on the factor of compacting α' according to the relation:
- $E_1 = 9.104 \cdot (H+4)$,

Where H [m] is the height of filling measured from the upper side of the pipe. Furthermore α' is connected to the Proctor index as indicated in the following table:

Proctor Test	α'
95%	1,0
90%	1,5
85%	1,52
80%	1,53
75%	1,54

- The Proctor index defines normally the degree of compacting of the soil. For U-PVC pipes a Proctor index of at least 90% has to be considered. The achievement of the value required for the Proctor index has to be verified by means of appropriate tests and respective certifications, the number of which is fixed during the planning.
- The above mentioned tests, defined as tests of compaction and determination of the characteristics of density of materials, must be carried out with the standard method AASHO with 4 points of the curve density/content of water. In order to obtain the density required methods of compacting are used (by hand with flat presses or with light mechanical apparatus).

Laying of the pipe

- Before laying the pipes, they have to be checked one by one in order to discover possible defects; the end part and the socket of the pipes have to be integral. The pipes and fittings must be put on the laying bed in a way to have a continuous contact with the bed.
- The niches, excavated before, for the accommodation of the sockets (even if the dimension of the socket is minimum, it is normal to find a niche in correspondence of its support), if necessary, have to be accurately filled in order to avoid possible empty spaces under the sockets.

- Procedure of filling
- The filling of a trench and generally of the excavation, is fundamental for the laying. As we are dealing with UPVC pipes, the uniformity of the soil is absolutely necessary in order to have a perfect construction of the carrying structure, as the soil reacts in a way, giving a contribution to support the given load. The material already used for the construction of the bed is put around the pipe and so graded by hand in order to form successive strata of 20 cm. up to half height of the pipe. It has to be taken care that there won't remain any empty spaces under the pipes and that the strata L1 of the filling material between the pipe and the wall will be continuous and compact.
- The second strata of filling L2, reaches the upper part of the pipe. Its compactness has to be carried out with maximum care. The third strata L3 reaches 15 cm over the upper part of the pipe. Compactness has to be only at the sides of the pipes, never vertically on the same.
- The solidation of filling around the pipe must be uniform and reach 90% of the optimal value determined by the modified Proctor test. The support with turfy, muddy, clayey, or frozen soil is not allowed as this kind of soil cannot be so graded as it contains too much water.
- Further filling is made (strata L4 and L5) by material obtained from excavation. This material is cleaned from elements having a bigger diameter than 10 cm and from vegetal and animal fragments. The filling
- Has to be made for the following strata up to 20 cm. It has to be compacted and eventually watered for a thickness of 1 m (measured from the upper part of the pipe), so that the density of the soil, once so graded, reaches 90% of the optimal value determined by the modified Proctor test. The bigger material (stones of a diameter > 2 cm) must not exceed the limit of 30%. At last there has to be a free space for the last strata of vegetal soil.

Special laying conditions

- If there is a ground water table, it has to be ascertained that this table does not cause any movement of the filling material surrounding the pipe. The surrounding soil has therefore to be so graded by means of draining, operating under the level of excavation, and thus avoiding every possible instability of the laying soil and brickworks.
- If during the work, for limited distances, there will appear some harder laying conditions than those foreseen by the project (enlargements of walls, landslides etc.) works of protection have to be carried out in order to come back to laying conditions as described. There must be extra-walls or heaps of stones or concrete in order to reduce the length of the section of excavation or there must be adopted other solutions authorized by the Direction of Work.
- In case, for technical reasons the height H of recovering is in some points lower than the minimum prescribed, it is necessary to absorb vertical loads by using appropriate protection devices (rigid diaphragms of protection and distribution of the loads, to be put above the last compact strata of material), following the input of the Direction of Work.

In case of crossing railways, it is possible to:

- Foresee a steel covered protective pipe (casing)
- Lay pipes in a tunnel of re-in forced concrete

EXECUTIONS OF CONNECTIONS

- Connections are made, respecting the indications given in the following, both for pipes and special pieces. An accurate cleaning of the parts to be joint is foreseen making sure that they are integral. The gasket has to be inserted (if not already inserted during production) in its seat, situated in the internal side of the socket. Successive steps are:
- Lubrication of the external surface of the end of the pipe (plain ended side of the pipe) and the internal surface of the socket, using an appropriate lubricant (grease of silicone-oil, Vaseline, soapy water, etc.) Avoid the use of mineral oils or greases which may damage the gasket.
- Insert the head of the pipe until the end of the socket and do not force further. The perfect execution of this working process depends only on a precise alignment of the pipes and on an accurate lubrication.

Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.
- No extra payment will be given for any of the reasons.
- The work done shall be measured in running meter of work done. The rate shall be for a unit of one Running Meter.

Item No. 05: Supplying & Fixing 50 mm dia heavy top bottom piece, G.I. Bend, Coupling, sand guard MS clamp with Nut Bolt etc. complete as directed by EIC.

1. Material:

- 50 mm dia heavy top bottom piece, G.I. Bend, Coupling, sand guard MS clamp with Nut Bolt etc as per approved sample by EIC/Architect.
- All type of material shall be used as per approved make list and confirming to relevant IS codes and approved by EIC/Architect.

2. Workmanship:

- Work complete as per above specification / manufacturer's specification.
- Work complete including all necessary material, tools, tackles etc.
- All work should be carried out as per detailed drawing and instruction of EIC/Architect
- Bidder shall be responsible for the any type of damage work at the time of execution.
- The whole work is to be completed as per design; sample material & any other requirement shall be as per instruction of EIC/Architect.

3. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all materials, finishing, labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/Architect.

- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of One Pair.

Item No. 06: Water Analysis test in Govt. approved laboratory incl. all water testing etc. comp. as directed

1. Workmanship:

- Work complete as per slandered specification and General specification of GWSSB, R&B and CPWD booklet for building works.

2. Measurements:

- The rate shall be consolidated for all above items.
- The rate shall include the cost of all labour, scaffolding, etc. to complete the whole work satisfactorily as per instruction of EIC/ Architect.
- No extra payment will be given for any of the reasons.
- The rate shall be for a unit of one Nos.

Item No. 07: Providing water harvesting pit of 5.50 m Dia well and 2.46 mt x 2.46mt x 4.00 mt size brick masonry well for water logging with excavation in any strata upto four meter depth, filling the pit with B.T. Metal 40 mm in 0.80 mt. depth with 25-40mm kapachi, 0.80 mt. depth and 0.50 mt. depth with coarse sand & charcoal in layers including making P.V.C. line for water inlet etc. as directed with 300mm dia bore 40 mt. depth and 200mm dia UPVC CM type casing pipe as slott 1.5 to 2.0 mm size and ordinary pipe with gravel packing or as directed.

Construction of Water Harvesting Pit with Recharge Borewell

1. Scope of Work

- Providing, constructing, and commissioning a water harvesting structure comprising masonry well, filter media, inlet arrangement, and recharge borewell complete in all respects, as per drawings and directions of the Engineer-in-Charge.

2. Excavation

- Excavation shall be carried out in any type of strata up to a depth of 4.00 meters.
- Excavated earth shall be disposed of as directed.
- Necessary shoring, strutting, and safety measures shall be provided.

3. Water Harvesting Well/ Pit

- Circular well: 5.50 m diameter
- Rectangular brick masonry well:
- Size: 2.46 m × 2.46 m × 4.00 m depth
- Brick masonry shall be constructed with approved quality bricks in cement mortar of approved proportion.
- Internal surfaces shall be finished as directed to ensure durability and proper percolation.
- Filter Media Filling (in Layers) The pit shall be filled with the following layers from

bottom upwards:

- 0.80 m depth of 40 mm size B.T. metal
- 0.80 m depth of 25–40 mm size kapachi (broken stone)
- 0.50 m depth of coarse sand mixed with charcoal, laid in layers
- Materials shall be clean, well-graded, and free from dust, silt, and organic matter.

4. Water Inlet Arrangement

- Providing and fixing PVC pipe line of approved diameter for water inlet into the harvesting pit.
- Pipe connections shall be properly aligned, sealed, and fixed to ensure smooth flow of rainwater.

5. Recharge Borewell

- Providing and drilling 300 mm diameter borewell up to a depth of 40 meters or as directed.
- Borewell shall be drilled using rotary / DTH method suitable for site strata.

6. Casing Pipe

- Providing and fixing 200 mm diameter UPVC CM type casing pipe.
- Pipes shall conform to relevant IS standards.
- Slotted pipes:
- Slot size: 1.5 mm to 2.0 mm, as directed
- Combination of slotted and plain casing pipes shall be used as per bore strata.

7. Gravel Packing

- Providing and filling approved size gravel packing around the slotted casing pipe to facilitate effective percolation, or as directed by the Engineer-in-Charge.

8. Completion & Quality

- All materials shall be of approved make and quality.
- The structure shall be completed true to dimensions and levels.
- The work shall be carried out in a workmanlike manner ensuring proper recharge functionality.

9. Measurement

- Measurement shall be in Job as per completed work, including excavation, masonry, filter media, borewell drilling, casing, gravel packing, and inlet arrangement.

10. Rate Includes

- Excavation in all strata
- Brick masonry work
- Supply and filling of filter materials
- PVC inlet piping
- Borewell drilling

- UPVC casing and slotted pipes
 - Gravel packing
 - Labour, tools, plants, machinery, and all incidental works
- Complete water harvesting system ready for use

Item No.09: RCC Hume Pipe: Providing & laying. R.C.C. Hume pipe for cable to be laid 90 cm. below ground across the road crossing or on floor with necessary material in an approved manner and making the ground as per original.(C) 300 mm dia

- The pipes shall be with or without reinforcement as required and shall be of class not lesser than NP2.
- These shall conform to IS 458 and shall be capable of withstanding a test pressure of 0.07 MPa (7 m head). The reinforced cement concrete pipes shall be manufactured by centrifugal (or spun) process while un-reinforced cement concrete pipes by spun or pressure process. All pipes shall be true to shape, straight, perfectly sound and free from cracks and flaws. The external and internal surface of the pipes shall be smooth and hard. The pipes shall be free from defects resulting from imperfect grading of the aggregate mixing or moulding.
- Concrete used for the manufacture of un-reinforced and reinforced concrete pipes and collars Shall not be leaner than 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate). The maximum Size of aggregate should not exceed one third of the thickness of the pipe or 20 mm whichever is Smaller for pipes above 250 mm internal diameter. But for pipes of internal diameter 80 to 250 mm, the maximum size of aggregate should be 10mm. The reinforcement in the reinforced concrete pipes shall extend throughout the length of the pipe. The circumferential and longitudinal reinforcements shall be adequate to withstand the specified hydrostatic pressure and further bending stresses due to the weight of water when running full across a span equal to the length of pipe plus three times its own weight.
- 19.2.2.1 Laying and Jointing Cement Concrete Pipes and Specials Trenches: Trenches shall be as described in 18.4.4. (CPWD Specification) Where the pipes are to be bedded directly on soil, the bed shall be suitably rounded to fit the lower part of the pipe, the cost for this operation being included in the rate for laying the pipe itself.
- Loading, transporting and unloading of concrete pipes shall be done with care. Handling Shall be such as to avoid impact. Gradual unloading by inclined plane or by chain pulley Block is recommended. All pipe sections and connections shall be inspected carefully before Being laid. Broken or defective pipes or connections shall not be used. Pipes shall be Lowered into the trenches carefully. Mechanical appliances may be used. Pipes shall be Laid true to line and grade as specified. Laying of pipes shall proceed upgrade of a slope.
- If the pipes have spigot and socket joints, the socket ends shall face upstream. In the case Of pipes with joints to be made with loose collars, the collars shall be slipped on before the
- Next pipe is laid. Adequate and proper expansion joints shall be provided where directed.

- In case where foundation conditions are unusual such as in the proximity of trees or holes, Under existing or proposed tracks manholes etc. the pipe shall be encased all-around in 15 cm thick cement concrete 1:5:10 (1 cement: 5 fine sand: 10 graded stone aggregate 40 Mm nominal size) or compacted sand or gravel.
- In cases where the natural foundation is inadequate the pipes shall be laid either in concrete Cradle supported on proper foundations or on any other suitably designed structure. If a Concrete cradle bedding is used the depth of concrete below the bottom of the pipe shall Be at least $1/4^{\text{th}}$ of the internal dia of the pipe subject to the min. of 10 cm and a maximum Of 30 cm. The concrete shall extend up the sides of the pipe at least to a distance of $1/4^{\text{th}}$ of the outside diameter of pipes 300 mm and over in dia. The pipe shall be laid in this Concrete bedding before the concrete has set. Pipes laid in trenches in earth shall be Bedded evenly and firmly and as far up the haunches of the pipe as to safely transmit the Load expected from the backfill through the pipe to the bed. This shall be done either by Excavating the bottom of the trench to fit the curve of the pipe or by compacting the earth Under around the curve of the pipe to form an even bed. Necessary provision shall be

Made for joints wherever required.

- When the pipe is laid in a trench in rock hard clay, shale or other hard material the space Below the pipe shall be excavated and replaced with an equalizing bed of concrete, sand or compacted earth. In no place shall pipe be laid directly on such hard material.
- The method of bedding and laying the pipes under different conditions are illustrated in When the pipes are laid completely above the ground the foundations shall be made even And sufficiently compacted to support the pipe line without any material settlement.
- Alternatively the pipe line shall be supported on rigid foundations at intervals. Suitable Arrangements shall be made to retain the pipe line in the proper alignment, such as by Shaping the top of the supports to fit the lower part of the pipe. The distance between the Supports shall in no case exceed the length of the pipe. The pipe shall be supported as far as possible close to the joints. In no case shall the joints come in the center of the span.
- Care shall be taken to see that super imposed loads greater than the total load equivalent to the weight of the pipe when running full shall not be permitted.
- Suitably designed anchor blocks at change of direction and grades for pressure lines shall be provided where required.
- Jointing: Joints are generally of rigid type. Where specified flexible type joints may also be Provided.
- Rigid Spigot and Socket Joint (Fig. 19.10, CPWD Specification): The spigot of each pipe shall be slipped home well into the socket of the pipe previously laid and adjusted in the correct Position. The opening of the joint shall be filled with stiff mixture of cement mortar in The proportion of 1:2 (1 cement: 2 fine sand) which shall be rammed with caulking Tool.
- After a day's work any extraneous material shall be removed from the inside of the

pipe and the newly made joint shall be cured.

- Rigid Collar Joint (Fig. 19.10, CPWD Specification): The two adjoining pipes shall be butted against each other and adjusted in correct position. The collar shall then be slipped over the joint, Covering equally both the pipes. The annular space shall be filled with stiff mixture of cement mortar 1:2 (1 cement: 2 fine sand) which shall be rammed with caulking fool. After a day's work any extraneous materials shall be removed from the inside of the pipe and the newly made joint shall be cured.
- Semi Flexible Spigot and Socket Joint (Fig. 19.10 CPWD Specification): The joint is composed of specially shaped spigot and socket ends on the concrete pipes. A rubber ring shall be placed on the spigot which shall be forced into the socket of the pipe previously laid.
- This compresses the rubber ring as it rolls into the annular space formed between the two surfaces of the spigot and the socket, stiff mixture of cement mortar 1:2 (1 cement: 2 fine sand) shall then be filled into the remaining annular space and rammed with a caulking tool. After day's work any extraneous materials shall be removed from the inside of the pipe and the newly made joint shall be cured.
- Semi Flexible Collar Joint: This is made up of a loose collar which covers two specially shaped pipe ends as shown in the Fig. 19.10.(CPWD Specification) Each end shall be fitted with a rubber ring which when compressed between the spigot and the collar, seal the joint. Stiff mixture of cement mortar 1:2 (1 cement: 2 fine sand), shall then be filled into the remaining annular space and rammed with a caulking tool. After day's work, any extraneous material shall be removed from the inside of the pipe and the newly made joint shall be cured.
- Internal Flush Joint (Fig. 19.10 CPWD Specification): This joint is generally used for culvert pipe of 60 cm dia and over. The ends of the pipe are specially shaped to form a self centering joint with an internal jointing space 1.3 cm wide the finished joint is flush with both inside and outside with the pipe wall as shown in Fig. 19.10. The jointing space is filled with cement mortar 1:2 (1 cement: 2 fine sand) mixed sufficiently dry to remain in position when forced with a trowel or rammer. After day's work, any extraneous material shall be removed from the inside of the pipe and the newly made joint shall be cured.
- External Flush Joint: This joint is suitable for pipes which are too small for jointing from inside. This joint is composed of specially shaped pipe ends as shown in (Fig. 19.10. CPWD Specification) Each end shall be butted against each other and adjusted in correct position. The jointing space shall then be filled With cement mortar 1:2 (1 cement: 2 fine sand) sufficiently dry and finished off flush. Great care shall be taken to ensure that the projecting ends are not damaged as no repairs can be readily affected from inside the pipe.
- In all pressure pipe lines the recess at the end of the pipe line shall be filled with jute braiding dipped in hot bitumen or other suitable approved compound. Pipes shall be so jointed that the bitumen ring of one pipe shall set into the recess of the next pipe. The ring shall be thoroughly compressed by jacking or by any other suitable method.
- The number of pipes that shall be jacked together at a time shall depend on the

diameter of the pipes and the bearing capacity of the soil, for small pipes up to 25 cm diameter, six pipes can be jacked together at a time. The quantity of jute and bitumen in the ring shall be just sufficient to fill the recess in the pipe when pressed hard by jacking or by any other suitable method. Before and during jacking care shall be taken to see that there is no offset at the joint.

- **Testing:** For pressure pipes, the completed pipeline shall be tested for pressure (Known as site test pressure) which shall not be less than the maximum pipeline operating pressure plus the calculated surge pressure, but in no case shall it exceed the hydrostatic test pressure. For non-pressure pipes the joints shall be tested as per procedure laid down under Para 19.2.1.2 (iv) CPWD Specification.
- **Refilling of Trenches:** The specification described in 19.2.1.2 (v) CPWD Specification shall apply. In case where pipes are not bedded on concrete special care shall be taken in refilling, trenches to prevent the displacement and subsequent settlement at the surface resulting in uneven street surfaces and dangers to foundations etc. The backfilling materials shall be packed by hand under and around the pipe and rammed with a shovel and light tamper. This method Of filling will be continued up to the top of pipe. The refilling shall rise evenly on both sides of the pipe and continued up to 60 cm above the top of pipe so as not to disturb the pipe. No tamping shall be done within 15 cm of the top of pipe. The tamping shall become progressively heavier as the depth of the backfill increases.

Measurements:

- The lengths of pipes shall be measured in running metres nearest to a cm as laid or fixed, from inside of one manhole to the inside of the other manhole. The length shall be taken along the centre line of the pipes over all fittings such as bends, collars, junctions, etc. which shall not be measured separately. Excavation, refilling, shoring and timbering in trenches, and cement concreting wherever required shall be measured separately under relevant items of work.

No extra payment will be given for any of the reasons, the work done shall be measured in running meter of work done. The rate shall be for a unit of one Running Meter.