TECHNICAL SPECIFICATION OF ELECTRIFICATION INSTALLATION WORKS

PART-II (EI)

The details of internal wiring, the position of fittings, fans, switches and plug sockets etc. are indicated in the layout drawings. The position of light fittings, fans, switchboards etc. indicated n these drawings are only for the guidance of the supplier and the actual position of these shall be mutually decided between the supplier and the purchaser. The supplier shall submit the purchaser of his consideration and approval all runs of wiring and the exact position of all the points and the switch boxes first marked on the points buildings.

All internal wiring shall be done in conformity to the latest Indian standard specification/Rules, code of practice adopted by CPWD and other standard practices prevalent in the part of the country. For the purpose of the specification the terminology used shall be as defined in IS:732 and IS:1356 of the definition of points wiring. The installation shall be carried out in conformity to all requirements of IE Act,1910 and IE Rules 1956.

a) Ceiling rose in (in case of ceiling and exhaust fan).

b) *Ceiling rose or connector (in case of pendants except stiff pendant points)*

c) Bank plate (in case of stiff pendant).

d) Socket outlet (in case of socket outlet points)

e) Lamps holder (in case of wall Bracket, batten holder bulk head fitting and similar other fittings)

f) Call bell / buzzer (in case words 'via' the switch shall be read 'via' the ceiling rose / socket outlet for bell push, where no ceiling rose / socket outlet its provided.

The following shall be deemed to be included in the point wiring

a) Switch and ceiling rose are required

b) In case of wall brackets, bulk head fittings, cables as required up to the lamp holders]

c) Bushed conduit for porcelain tubing where cables pass through walls.

d) All wood or metal blocks, boards and boxes, R.J. Boxes sunks or surface type including those required for fan regulator but excluding those under the distribution board and main control switch.

e) Earth wire from 3 pin socket point to the common earth including connection to the earth dolley.

f) Earth wire of 18SWG/H.D.B.C. wire for loop earthing of the fixture

g) All fixing accessories such as clips, nails, screw, plug, rawl plug, wooden plug, round blocks etc. as required

h) Joint for junction boxes and connecting the same as required

i) Connections to ceiling rose or connection socket outlet, lamp holders, switch, fan regulators etc

The point wiring in case of fan and light points shall mean the distance between the control switch and ceiling rose, connect or back plate, socket outlet or lamp holder depending upon the fittings measured along the runs of wiring irrespective of the number of wires in run. In the case of socket outlet points, the length shall mean the distance between the socket outlet and the tapping point of live wire on the nearest switchboard or junction box, as the case may be.

In the case of exclusive socket outlet circuits wired on 'Joint Box' system of wiring, any junction provided for extending the wiring beyond the point referred to, shall be treated as the nearest *tapping point. In case of call bell / buzzer points the length shall mean the distance between* the call bell and the ceiling rose / socket outlet or the bell push (when the ceiling rose / socket outlet is not used).

Sub main shall include the earth wire of adequate size main distribution Board up to sub distribution board B.B. such wiring has been classified on the basis of length. For the internal lighting, either surface conduct wiring system or recessed conduit or batten wiring system shall

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be provided as specific in the bill of quantities and working drawings.

Conduit wiring

For recessed conduit wiring system the conduit shall be placed in the ceiling / columns etc. before the casting of the slab or column. The conduit pipes shall be properly positioned and fixed so that it will not be displaced at the time of concreting. The junction boxes provided shall be so arranged that the cover will be flushed with the finished surface of the ceiling or column.

For placing the conduits in the walls, chases of ample dimension shall be made neatly to fix the conduit in a desired manner. The conduit pipe shall be fixed by means of staple or saddles not more than one-metre apart. Fixing of standard bends or elbows shall be avoided and all curves maintained by bending the conduit itself with a long radius will permit easy drawing of the conductors. Suitable inspection boxes shall be provided to permit periodical inspection and removal or replacement of wires if necessary. These shall be mounted flush with the wall with holes in the cover of the box.

The switch or regulator box shall be made of metal on all sides except on the front where backlight sheet or Perspex cover painted to match the colours of the wall shall be used in case of surface wiring system. For recessed wiring system, these boxes shall be made flush with the conduit of each conduit or section shall be completed before conductors are drawn in. The entire system of conduit after installation shall be tested or mechanical strength and electrical continuity throughout the earthing of the entire installation shall be carried out in accordance with I.E. Rules and standards.

The number of wires drawn in the conduits shall not exceed the numbers those specified in Indian standard specification No.732.

Main and Sub distribution Boards.

The position of main boards for lighting and sub distribution board for different buildings are approximate and the exact location shall be given to the successful tenderer at the time of installation.

The scope of this specification includes installation of the panel boards and distribution boards and making necessary connections. The installation of the boards shall be done strictly in accordance with the details supplied with the specifications, the instructions supplied by the switchgear manufacturer, Indian standard specifications and I.E. rules.

The supplier shall submit the details of installations to the purchaser for his consideration and approval, prior to installation.

When the switchboards are wall / column mounted top, they shall, be mounted on a suitable angle iron framework. All the metal supports etc. shall be protected against corrosion. The mounting height for such switchboards shall be such that it can be conveniently operated.

Earthing

Earthing shall generally be carried out in accordance with the requirements of Indian Electricity Rules and the relevant rules and regulations of electrical supply authorities. The complete earthing work for the installation covered by this specifications shall also be provided taking into account Indian Standard Specification No.IS:732 and IS:3043. The earthing system adopted shall also have adequate mechanical strength.

The work shall include earthing o noncurrent carrying metallic parts of all the equipment, light fittings, conduit pipes, cable and cable supports and earth strips (the design to be approved by the purchaser) and all the inter connection between the earthing system to a value mutually agreed upon between the purchasers and the supplier.

Installation, testing and Commissioning:

The supplier shall be responsible for the installation testing the commissioning of all the equipment and materials supplied by him against this specification. This shall also include the provision of miscellaneous wiring and supports and earthing in compliance with Indian Electricity rules and to the full satisfaction of the Government Electrical Inspector. All small items such as clamps, bolts, nuts, racks, supports, miscellaneous wiring etc. required to make

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the installation complete, shall constitute the part of major items specified in the bill of quantities and the tenderer should quote for each item taking these into consideration.

The responsibility of the supplier shall include receiving all the equipment and materials at site, storage for required period, handling the same at the site of erection, final execution, erections, revisions of equipment, if any, testing and commissioning and handing over the installation complete in all respect to the entire satisfaction of the purchaser's authorized representative. The supplier shall make good of all the damaged equipment and materials during this period at his own expense.

The supplier shall submit sample of each and every equipment and materials for the final approval of the purchaser's representatives immediately after the acceptance of offer. All the equipment's and materials shall be supplied exactly as per to the approved samples. If at any stage the purchaser brings to the notice of the supplier any discrepancy or defect the supplier shall replace the same at his own expense.

The supplier shall render all reasonable assistance to the purchaser in getting the installation approved by the Government Electrical Inspector prior to the energisation and supply necessary drawings, test certificates and both for tests carried out at the factory and site as well as the tests which the inspector may demand. In case any addition of alternations are required, to be made in the installation or in the equipment as per the directive of the Government Electrical Inspector / Local Authorities, he same will have to be carried out by the supplier, at his own expense.

The position of light fittings, main board, switches, sockets and routes of pipes and cables shown in the drawings are only indicative. The actual position of these shall be decided at site at the time of execution joints by the supplier and the purchaser's authorized representative. The position of light fittings, pipes and board if required, to be changed / shifted due to the change in the building design etc by the purchaser's authorized representative, the same shall be carried out at no extra cost.

All the materials supplied to the contractor according to the Contract condition will be subject to *inspection and approval of the officer or his representative from time to time. The contractor* will provide all facilities of such inspections free of cost. At the time of inspection, the owner of his representative will have full liberty to reject any such materials, which does not conform to the specification / requirement. No claim for any rejected materials will be entertained by the owner. The contractor will remove all rejected materials from site at his own cost.

No surplus materials procured by the contractor will be accepted by the owner. The contractor will be responsible to get the Electric installations cleared by the Electrical Inspector of Orissa Government. Only the inspection fee will be reimbursed by Department on production of challan copy

Installation and Maintenance Tools:

The supplier along with the tender shall furnish a complete list of tools, appliances and accessories required for the installations of switch grass, light fittings, pipes cables and wires.

Drawings:

All drawings, test certificates, instructions manuals etc. shall be in English Language and all dimensions and weights shall be in metric units.

The tenderer shall submit with the tender general arrangement drawings for the installations work, typical methods and cabling and cables supports pipe work and pipe supports, typical methods of earthing and fixing of light fittings earthing etc. as offered by him in the tender.

The contractor shall submit for the purchaser's approval all layout, the general arrangement drawings as well as the typical details of all types of installation work in three sets before commencing the manufacture and the site installations work well in advance so that the site work shall not suffer.

After obtaining approval of the above drawings the contractor shall supply three sets of the following drawings.

(a) The arrangement and support of conduit pipe

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(b) The position of light fittings, switches / plug socket and switch boards

(c) Earthing installations

(d) Layout plan showing the entire cable network

On completion of work, the successful tenderer shall supply one set of tracing in transparent linen and five sets of prints of all drawings incorporating all the changes / modifications affected during the execution of the contact. All wiring diagrams shall indicate clearly, the switch board, the runs of main and sub main wiring and the position of all the points with their controls. All the circuits shall be clearly indicated and numbered in a accordance with IS:375.

The technical literatures and operating instructions and the maintenance manuals shall also be supplied in triplicate to the purchasers after the completion of the installations work.

Test:

Manufactures standard tests in accordance with Indian Standard and other standards, adopted shall be carried out on all the equipment and accessories covered by this specification so as to ensure efficient and satisfactory performances of all the components and also the equipment as a whole under working conditions at site. The tenderer shall submit a complete list of all such tests. If the purchaser, if so desired for special tests, to be carried out, under certain conditions the same shall be made by the successful tenderer at his own expenses.

All equipment shall be tested at site before the commissioning in accordance with the adopted standard and Indian Electricity Rules. Voltage test shall be carried out on each circuit on completion of wiring and cabling.

Technical Data:

The tenderers shall submit with their tender all such technical data, which are required for complete evaluation of the equipment offered. The suppliers shall give complete technical information of the equipment as detailed in Annexure and relevant Indian standards. The tenderer should supply such details of all equipment and materials offered specially with regard to the following.

a) Fuse switch board and distribution boards

b) Light fittings

c) Conduits and the accessories for them

d) Switches / plug sockets

e) Cable and wires

The tender shall give along with his tender the following details:

a) Complete details of earthing electrodes, earthing station and earthing conductors

b) Details of conduit supports

c) Details of all the equipment and accessories to be supplied

Exception to Specifications:

The object of this specification is to have all tenderers quote for equivalent materials and workmanship. It is, however, understood the certain manufacturers may not be able to offer as specified in every case, where the tenderer may find it necessary to deviate from the exact letter and not the intent of the specification, he must specifically state what these deviations may be at the time he submits the tender. All deviations must be grouped in one statement.

No deviations other than those includes in the tender will be permitted. These deviations should be listed as per Annexure.

PVC insulated Cables and Wires:

For 415V Distribution system, cables of voltage grade not less than 1000V shall be used. These cables shall be heavy-duty class, PVC insulated and PVC sheathed with aluminium conductors. The wires used in the lighting installation shall be PVC insulated n sheathed in case of conduits wiring and of 660V grade. Wires of different colours shall be made use of for

quick identification of phase wire / neutral wire etc. All cable of wires shall comply with the requirements regarding the manufacture and testing etc as specified in India Standard Specification IS:1554 and IS:694.

The length of cables indicated in the bill of quantities and drawings are only indicative and the successful tenderer will be paid for the exact length of cables laid at site. No joint shall be allowed in a run of cables, which can be covered by a possible drum length of cables.

Fuse switch / switch fuse shall be metal clad dust and vermin proof suitable for use under climatic conditions prevailing at site. Switch fuse / fuse switch units shall comply in general to IS:1567/4064 with regard to design and constructional / features.

The 'ON' and 'OFF' position of the switch handles shall be distinctly indicated and interlocks shall be provided to ensure that the switch cover cannot be opened unless the switch is in the 'OFF' position. Means shall, however, be provided for releasing the interlock to permit closing of switch with cover open for testing purposes. Designs with normal conventional position of switch handles, i.e. with switch handle up in the 'ON' position and down I the 'OFF' position shall be preferred. All live parts inside the switch shall be properly surrounded and inter phase barrier shall be provided.

Switch fuse / fuse switch units, distribution boards shall be provided with necessary metal fame work so that they can be mounted on wall / columns structure etc. as desired. The panel boards, shall be wall mounted type or floor mounted type as specified in the bill of quantities or drawings. Necessary supporting metal frame of approved design shall be provided for all panel boards.

The arrangements of work boards shall be such that the operational handle of the top mounted switches are within the convenient of operators (about 1.2 M from the finished floor level) and proper space shall be provided for the termination of the cable in the switches provided below the bus-bars.

The bus-bars within the bus-bar chamber shall be liberally spaced for taking the riser connection. The bus bars with aluminium conductors shall be provided and PVC sleeves of different colour shall be mounted on them for easy identification, Clamped joints for taking the riser connections, instead of bolted type shall be preferred.

Two bolted type earthing terminals shall be provided on the switch boards. All individual switches shall be connected with suitable size earth wire to the main earthing terminals of the switchboard.

Hanger Board and shock treatment / charts shall be supplied wherever required.

At the incoming side of each pen phase, 3-neon type indicating lamps should be provided at the main board.

Switches and Plug Sockets

Switches provided for control of light points shall conform to IS:1087 and shall be rated for 5A/15A 250V

Ceiling Fans and Exhaust Fans:

Ceiling fans shall conform to Indian standard specification IS: 374-1960. The fans shall be supplied with all standard accessories like regulator and capacitors etc.

The performances rating of the propeller fans shall in accordance with stipulations of IS: 2312. All fans shall be robust in design and construction and shall be supplied complete with wall brackets / clamps etc.

Fluorescent Fittings:

All fluorescent fittings supplied shall confirm in general to IS: 1913 and shall be complete with all standard accessories like choke, starter and capacitor etc

The type of enclosure provided for the fittings shall be of that specified in the bill of quantities and the working drawings. The materials of construction for fittings used for outdoor installations and for use in the work anodes shall be such that they shall withstand the atmospheric condition in that area.

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Lamp holders used shall be fully shock proof, spring-loaded rotary type to ensure positive lamp locking. It should also be not possible to touch live parts of the lamp holder both after the lamp has been taken out and during the insertion or removal of the lamp. The starters shall be designed to give designed starting characteristics that shall promote full lamp life. Starter shall have high mechanical strength and topic proof construction. It should be incorporated with radio suppression capacitor o adequate rating and capacity. Power factor improvement capacitors are provided with hermetically sealed housing to ensure long and trouble fee service. Terminal soldering tango shall be provided for easy electrical connections. The capacitors in general shall confirm to IS:1569-1963 and P.F improvement up to 0.95 for twin fluorescent light fittings and 0.9 for single fluorescent light fittings is to be maintained.

The ballast provided in the fluorescent fittings shall generally be in accordance to IS: 1534. The ballast should incorporate the following design features.

i) Low working temperature
ii) Correct pre heating current for the electrodes
iii) Proper wave foam
iv) Small in dimensions
v) Correct power supply to the lamp
vi) No hum.
vii) Easy connection leads.

All the metal construction of the fittings shall be such that they shall:

1) Withstand the atmospheric condition prevailing in the area
2) Provide maximum mechanical protection to the tubes and fittings accessories. Assists in maximum and uniform light distribution

All fittings shall be provided complete with florescent lamps. All lamps shall confirm to IS:2418.

Incandescent Fittings:

The incandescent fittings shall be supplied strictly as per the details given in the enclosed annexure and bill of quantities, deviation if any regarding designs, construction of materials should be specified clearly.

All the metal parts used in construction of the fittings shall have no effect due to dust / fumes / gases likely to exist in the atmosphere. All the bolts, clamps, nuts and guard wire etc shall be galvanized.

The wall fittings shall be provided with necessary hooks / clamps / supports etc for fixing the light fittings on wall / ceiling etc as detailed in the bill of quantities and the working drawings.

Light fittings shall be suitable for connection with 19mm dia. Conduit pipe as required. If fittings are to be connected through PVC cables, glands of adequate size and capacity shall be provided.

The lamp holders provided in the fittings shall confirm to IS:1528.

CODES

Codes shall mean the following including the latest ascendants and / or replacement if any.

a) Indian Boiler Act, 1923 and Rules and Regulations made there under
b) Indian Electricity Act, 1923 and Rules and Regulations made there under
c) Indian Factories Act, 1948 and Rules and Regulations made there under
d) The minimum wages Act
e) The Women's Compensation Act
f) The Payment of Wages Act
g) The Fatal Accident Act
h) The Industrial Employment Act

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i) The Employment provident Fund Act

j) Indian Explosive Act 1984 the Rules and Regulations made there under

k) Indian Petroleum Act 1934, and Rules and Regulations made there under

l) A.S.M.E. Test Codes

m) AIRE Test, Codes

n) American Society of Materials Testing Codes

o) Standards of the Indian Standards Institution

1) Low Tension Circuit Breakers: IS 2516-1955 Part I Sec.1
2) Switchgear Bus Bars IS 375-1963
3) HRC fuse linksIS 2208-1962
4) Distribution fuse boardsIS2675-1966
5) Enclosure for Low Voltage switchgearIS214701962
6) PVC Cables IS1554-1975
7) Tabular fluorescent lamps for Cameral lighting serviceIS2418-1963
8) Tungsten Filament Lamps for cameral serviceIS415-1963
9) Ceiling Fans IS274-1966
10) Flood lights IS1947-1961
11) Wall Glass flame-proof electric light fittings IS2206-1962 (Part 1)
12) Water Tight Electric Light Fittings IS3553-1956
13) Steel Boxes for Enclosure of Electrical Accessories IS5133-1969
14) Fittings for Rigid Steel conduit IS2667-1979
15) Rigid steel circuits for electrical wiring IS3837-1966
16) Accessories for Rigid Steel Conduits for Electrical Wiring IS3837-1966
17) Switch Socket OutletsIS3837-1966
18) PVC Wiring IS694-1977
19) Switches for domestic and similar purpose IS3854-1966
20) PVC wiring IS694-1977
21) Call Bell and Buzzers IS2268-1966
22) Straight through joint boxes and leads sleeves or paper insulated cables-EID-0032-1964
23) EarthingIS3043-1966
24) Electrical Wiring installations IS732-1963
25) SwitchgearIS3072-1965(Part I)
26) Lighting protectionIS2309 –1969
27) Public Address systemIS1882-1962
28) Low Tension switch use unitsIS4064-1978
29) Code of Practice for Automatic FIRE ALAM system IS2189-1970
30) Specification for Heat Sensitive Fire DetectorsIS2175-1977
31) Guide for Safety procedure in Electric work IS5216-1969
32) Rubber Mats for Electric worksIS5424-1969

p) Other internationally approved standards and / or Rules and Regulations touching the subject matter of the contract.

PART-III

ADDITIONAL APPENDIX TO BILL OF QUANTITY:

(For P.H. Items of Work)

CONSTRUCTION OF DAY CARE SUB-CENTRE CUM HEALTH & WELLNESS CENTRE AT PADHEL UNDER PATNAGARHBLOCK FOR THE YEAR 2023-2024OF BALANGIR Dist. (Civil, El, PH)

1. Thequantitiesofitemsmentionedinthetenderschedulemayincreaseordecreaseduringexecutionof works but the contractor will complete the work as per his tendered rates in accordance with the instruction of Engineer in charge.
2. **Specification**: The standard PHD and PWD specification will be followed for execution of work. During the courseofexecutionofwork,theinstructionsoftheEngineerincharges shallbefinalandbinding.
3. The Sales Tax element should not be added to the analysis of rates and the previous practice should be followedaspertheWorksDepartmentletterNo.IIT.22-89-18170dt.18.7.1989
4. Thereshouldbenoclauseeitherinthetenderorinagreementforpaymentofanyadditionalclaimonaccoun t ofSales Taxoncompletedworkswhichwillbedeemedtoberecoveredbyexistingomnibusstipulationasper the works Department letter No. TIT 22/89-18170 dt.18.7.89/
5. It is the responsibility of the Contractor to arrange watch and ward to the installations until testing commissioningandhandingoverforwhichnoextrapaymenttowardswatchandwardwillbepaid,
6. ThecontractorshallmaintainaseparatesiteorderbookforP.H.portionofwork.
7. The P.H. portion of work shall be open for inspection by the authorities of engineer inchrge and the higher authorities and instructions imparted during the course of Inspection should be binding on thecontractor.
8. Materialsnotcoveredbyanyoftheabovecategoriesofitemsinthebillofquantityhavetobeapprovedbyth e competentauthoritiesbeforeutilisingthesame inworks.Insuchevent,thepaymentofsuchitemwillbemade as per actual on due approval by the competentauthority. All materials required for the work shall be supplied by the contractor as per standard specifications appended with due approval by the Engineer in charge.

   In case the material as per make specified is not available, the materials of equivalent make and as per I.S. Specifications or of best quality when not covered by I.S. Specifications.

   Can be utilised on prior approval of Addl.E.O(Tech.) ZP or the officers duly authorised by him.ItisbindingonthepartofthecontractortousesuchitemsofmaterialswhichareavailableintheDepart mental storeandinsuchcasethedeductionfromthebillswillbemadeatstockissuerates.

Contractor **Block Development Officer, Patnagarh**

TECHNICAL SPECIFICATION FOR P.H PORTION OF THE WORK:

CONSTRUCTION OF DAY CARE SUB-CENTRE CUM HEALTH & WELLNESS CENTRE AT PADHEL UNDER PATNAGARHBLOCK FOR THE YEAR 2023-2024 OF BALANGIR Dist. (Civil, EI, PH)

A. WATER SUPPLY PIPES ANDFITTINGS

1. **Materials**

Allgalvanizedlronpipesaretobeofmild Steel,continuouswelded,screwedtubes,mediumquality confirmingto IS &bearingISIMarks,manufacturedbyreputedfirmsandapprovedbrandsasspecified. The pipes shall confirm to I: S 1239 (Part - I) -1975.

AllG.I.Fittingsshallbemanufactured byRegistered firm.

Allpvcpipesaretobeofmediumquality(Schedule-80) manufacturedbyreputedfirmsandapproved brands as specified. The pipes shall confirm to ASTM- D-1785

2. **Weight of G.I. pipes for a Metrelength:**

The permeterweightofdifferentdiametersofG.I.pipesformediumclassisindicatedinthefollowing table.

Sl No.	Pipe size in mm	Medium class (in kg)
1	15mm	1.22
2	20mm	1.57
3	25mm	2.43
4	32mm	3.13
5	40mm	3.60
6	50mm	5.10

3. **Laying ofPipes**

The layout of the mains and service Pipes etc will be done in accordance with the drawings. The Contractor is to mark out the exact position of the pipes and fittings at site and take approval of the consultant /Engineer In-charge, before taking up the work.

4. Where the pipes are laid, underground these must not be laid less than 450mm below ground level

andcoatedwithonecoatofapprovedblackbituminouspaint.ForlayingtheG.I.PipesandFittingsbelo w

groundlevel,thewidthandthedepthofthetrenchesfordifferentdimensionsofthepipesshallbegiven as below:

Dia of pipe	Width of Trench	Depth of Trench
15mm to 50mm	300mm	600mm
65mm to 100mm	450mm	750mm

Thepipesshallbelaidonalayerof75mmthicksandandfilledupwithsandupto75mmabovepipesandt he remaining portion of the trench shall then be filled up with excavated earth with proper ramming as described in "Excavation and refilling". The surplus earth shall be disposed of asdirected.

Thrust or anchor blocks of cement concrete 1:2:4 in hard granite chips shall be constructed on all bendsorbranchestotransmitthehydraulicpressurewithoutimpairingthegroundandspreadingitovera sufficientarea.Pipesshallnotbelaidtopassthroughmanholes,catch pit,and drain.Whereitisunavoidable thepipesshallbecarriedinsleevepipesofM.S./G.I.,asapprovedbytheconsultant/Engineer-in-charge. The rates should include such asituation

5. **Wherepipesrunalongwalls,thesamearetobefixedtothewallwithholderbatclamps/M.S.Hooks asbelow**

Dia of pipe in mm	15	20	25	32	40	50

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Horizontal Line	2m	2.5m	2.5m	2.5m	3m	3m
Vertical Line	2.5m	3m	3m	3m	3.5m	3.5m

Wherethepipesarepassingthroughthe R.C.C./Masonrywall/Column/beamorpillars,thesemus t passthroughtheappropriatehighersizesofC.I. /G.I.SleevePipesandaretobeincludedintherates

In case the Pipes are embedded in walls and floors it should be painted with one coat of anticorrosive paint of approved quality

All pipes should be fixed horizontal and vertical. For taking the Pipes through the walls and floors

androofslabsetc.Theholesshallbemadebyfillingwithchiselorjumperandnotbydismantlingthebrick work or concrete. After fixing, the holes shall be made good with cement concrete 1:2:4 and properly finishedwithcementplaster1:4tomatchtheadjacentsurface.

Union Nuts are to be provided in each of the Vertical riser or drop on and from G.I. Tank and near theValve and as and where necessary.

Thelongscrewfittingsof8cmsaretobeprovidedforlonghorizontallinesandinsidethelavatory/ Kitchenetc.

6. *AfterlayingandjointingthePipesandfittingsshallbeinspectedunderworkingconditionofpressure and* flow. Any joint found leaking pipes should be removed and replaced without extra cost. The Pipes and Fittings after they are laid shall be tested to hydraulic pressure of 6 Kg/ $cm^{2.}$ The test pressure should maintain without loss of for at least half anhour.

7. **Painting**

Oncompletionofthetest,theexposedpipesandfittingsaretobepaintedwithtwocoatsofsynthetic *enamelpaintofapprovedcolourandbrandoveracoatofpriming.*

8. **Measurement**

The length shall be measured in running meter correct to centimetre for the finished work, which shall include the Pipes and fittings such as Bends, Tees, Elbows etc., but excludes Brass or Gun-metal fixture like Tap, Cocks, Valves, PVC connection Pipes etc.

9. **Jointing**

ThejointingofG.I.tubes/pvcpipesandfittingsetc.willbedoneasperttheprovisionsstipulatedin the B.I.Sspecification.

10. **Bib cock and StopCock**

These shall confirm to I: S 781 - 1967 and bear ISI Mark. The Bib cock is a draw off tap with a horizontalinletandfreeoutletandstopcockisavalvewithasuitablemeansofconnectionforinsertionin a pipeline for controlling or stopping the flow. This shall be of screw downtype.The cocks shall open in anti-clockwisedirection.ThestopcocksshouldbeC.PconcealedstopcocksandC.Panglevalvestypeas specified in tender schedule. Bib cocks should be also C.P Brass bibcocks.

11. **Full way Valve(Brass)**

Fullwayvalveisavalvewithsuitablemeansofconnectionforinsertioninapipelineforcontrollingor steppingtheflow. Thevalveshallbeofbrassfittedwithacastironwheelandshallbeofgatevalvetype confirmingtoI:S780-1960brassrodlate stone,openingfull wayandofthesizeasspecified

The approximate weight of the valves is indicated below for guidance.

Pipe size in mm	Flanged End valves in Kg	Screwed End valve in Kg
15mm	1.021	0.567
20mm	1.503	0.68
25mm	2.498	1.077
32mm	5.232	1.559
40mm	6.082	2.268
50mm	6.691	3.232

12. **Gun-Metal Full wayValve**

This shall be of the Gunmetal fitted with wheel and shall be of Gate-Valve type opening full way.

This shall confirm to I: S 778-1971. Class I. The valves should bear I.S.I. Mark

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13. **BallValve**

Theballvalveshallbehighorlowpressureclassasstipulatedin theTenderScheduleandshallconfirmto I:S 1703 - 1968. The nominal size of ball valve shall be that corresponding to the size of Pipe for which it is used. The ballvalveshallbeofbrassorgunmetalandthefloatforlowpressureinPolyethyleneandforhighpressureinc opper.

Each and every ball valve while in closed position shall withstand an internally applied hydraulic pressure of 20 Kg/Cm^2 for a minimum period of two minutes without leakage or sweating.

Every high pressure ball valve when assemble in working condition, with the float immersed to not more than half its volume shall remain closed against a test pressure of 10.5 Kg/Cm^2.

Polyethylenefloatsshallbewatertightandnon-absorbentandshallnotcontaminatewaterandwithno jointing adhesive jointingparts.

The minimum thickness of the copper sheet used for making copper floats shall be of 0.45 *mm. The thickness of materials of the float shall be uniform throughout.*

14. **CUTTINGHOLESUPTO30CMX30CMINWALLSINCLUDINGMAKINGGOODTHESAME;**

General:-Squareholesofsizeasspecifiedorasdirectedbytheengineer-in-chargeshallbecut inthemasonryortakingpipes.Anydamagetotheadjoiningportionortoanyotheritemshallbemade goodasdirectedbytheEngineer-in-charge.Alldismantledmaterialshallberemovedfromthesite.

Masonry works: - Bricks work etc, shall be made good by using the same class of brick, tile or stonemasonryaswascutduringtheexecutionofthework.Themortartobeusedshallbecementmorta r(1:4) as directed by the Engineer-in-charge.

Finishing: - Cement mortar in 1:4 mix shall be used for plastering or pointing as may be required. The surface shall be finished with two or more coats of white wash/colour wash/ distemper/ painting as requiredbutwherethesurfaceisnottobewhitewashed,colourwashed,distemperedorpainted;itsha ll be finished smooth with a floating coat of neat cement or is required to match with the surrounding surfaces.

Thespecificationsforbrickwork, stoneworkandfinishingetc.shallbethesameasdetailedunder relevant standards of State P.W.D.specification.

15. ***CUTTINGHOLESUPTO15CMX15CMINRCCFLOORSINCLUDINGMAKINGGOODTHESAME;***

General:-

Squareholesofsizeasspecifiedshallbein R.C.C.floorandroofs/chajjasforpassingpipesetc. AnydamagetotheadjoiningportionortoanyotheritemshallbemadegoodasdirectedbytheEnginee r-in-charge. All the dismantled material shall be removed from thesite.

Cement Concrete: - After insertion of pipes etc. the hole shall be repaired with cement *concrete* 1:2:4andthesurfacefinishedtomatchtheexistingsurface.Thetopandbottomshallbefinishedproper ly to make the joint leak-proof. The specifications for cement concrete work and finishing etc. shall be the sameasdetailedunderrelevantsub-headsofStateP.W.DSpecifications.

16. **Showerrose**

Theshowerrose:-Theshowerroseshallbeofchromium-platedbrassofspecifieddiameter.Itshall haveuniformperformance.Theinletsizeshallbe15mmor20mmasrequired.

The chromium plating wherever specified shall of grade-B type conforming to IS No. 1068 – 1958. The chromium shall never be deposited on brass unless a heavy coating of nickel is interposed. In the case of iron, a thick coat of copper shall first be applied, then one of nickel and finally the chromium. In finish and appearance, the plated articles, when inspected shall be free from plating defects such as blisters, pits, roughness and unplotted areas and shall not be stained or discovered.

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A stopcock of the specified size shall be provided to control the inlet water supply to the showerrose.

(a) Height of shower 1850 to 2000 mm from floorlevel.

(b) Heightoftap:-

450mmfromfloorlevelprojecting150mmfromwall.

FlushingCistern:

17.

The flushing of the Indian water closet (Orissa closet) shall be done by C.I. or polystyrene high level valve less syphonic flushing cistern (PVC low level cistern) of approved brand and quality I.S.I. marked and capacity as specified. The connection between the cistern and water closet shall be made by 32mm dia G.I. flush pipe, made from G.I. pipe (Light quality) or 32mm dia PVC pipe as specified in the tender schedule. The flush pipe with an offsetshouldbefixedtowallusingC.I.holderbatclamps.Thecapacityofthecisternshouldbe10ltrs.AsperI. S.S. The cistern shall be fixed on cast iron or rolled steel/PVC cantilever brackets (built in type), which shall be firmly embedded screwed in the wall, with C.C. M20. The cistern shall be provided with 20mm dia PVC. Overflow pipe withfittings,whichshallterminateintomosquitoproofcouplingsecuredinamannerthatwillpermitittob ereadily cleaned orrenewed.

The 32mm dia flush pipe shall be connected to the water closet by means of approved type joint. The flush pipe shall be fixed to the wall by using C.I. holder bat clamps. The bend and the offset as requiredintheflushpipeshallbemadecold.TheinsideoftheC.I.Cisternshallbepaintedwithtwocoats ofapprovedblackbitumenpaint.TheouterfaceoftheC.I.cistern,bracketsoverflowpipeandflushpipe etc., shall be painted with two coats of any synthetic enamel paint of approved shade and make, over a coatofpriming.Thecostofthepaintingshallbeincludedintheratequotedfortheflushingcistern.

The inlet connection to the cistern shall be made with 450mm long 15mm dia PVC heavy type connection pipe.

B. ***SOIL AND WASTE PIPES ANDFITTINGS***

(a) These should ConfirmtoIS: 1729–1964oritslatestrevision.

(b) The pipes and fittings should be true to shape smooth, cylindrical, inner and outer surfaces being concentric,freefromcracksandpinholesandneatlydressed.Theendsofthepipesandfittingsshallbe square to theiraxes.

(c) *Pipesareavailablewithorwithoutearsinglesocketedordoublesocketed.Theseshouldbeprocured* asperrequirement.Usuallengthofthepipesare1.8mbutavailableinspecificlengths,ifso,ordered.

(d) Weightsandotherphysicalcriteriaincludingtolerancesarestatedin Table–1.

(e) **LAYING: -** The laying is done by spigot – socket joints. The exact lengths are measured at the site, pipesarecuttosizes,ifexactlengthsofcutpiecesarenotreadilyavailable.Inthestack lines,pipeswith ears are used. The stack line is fixed to the wall with the help of 100 mm stout *nails driven into wooden blocks fixed in the walls properly secured.*

(f) JOINTING: - Jointing is made with the help of spun yarn and cement mortar (1:2). In certain places moltenleadisusedinsteadofcementmortar. Wheremoltenleadisused, caulkingisdoneafterleadgets cooled.

(g) **VENTILATION PIPES: - It** should be carried up above the roof (at least 1 m above the parapet) and guardedwithprovisionofacowl.Thestacklinesmustbesecuredtothewallsbymeansof M.S.stayand clamps.

(h) Provisionofdoorsinthefittingsisamustsoastocleanthelinewhereverrequired.Thedoorsmustbe fitted along with rubber insertion and brassbolts.

(i) Thelavatorywastestackshallbeconnecteddirectlytotheln spectionChamber/Manholewhereasthe wastes from kitchens, basins, sinks, baths are to discharge through gully traps, the gully traps being connected ultimately to Inspection Chamber /Manhole.

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(j) Pipes and fittings must be internally painted with a coat – tar and externally with enamel paint of approvedcolour.

Allsoil-waste, ventandanti-siphonagepipesandfittingsshallconformtoI.S.1729–1964oras revisedfromtimetotime.Thepipesshallhavespigotandsocketendswithbendonspigotend.Thepipes andfittingsshallbetruetoshape, smoothandcylindrical, theirinnerandoutersurfacebeingasnearlays practicableconcentric. Theyshallbesoundandnicelycastandshallbefreefromcracks,lapspinholesor otherimperfectionandshallbeneatlydressedandcarefullyfettled.

The ends of pipes and fittings shall be reasonably square to their axes.

Thesandcastironpipesshallbeofthediaasspecifiedinthedescriptionoftheitem andshall be in length of 1.5m, 1.8m and 2m including sockets ends of the pipes unless shorter lengths are either specifiedorrequiredatjunctionsetc.Thepipesandfittingsshallbesuppliedwithoutears unlessspecified or directedotherwise.

Allpipesandfittingsshallringclearlywhenstruckoverwithalighthandhammer,andshallbe capable of being easily worked with drill orbit.

TOLERANCES: - The standard weights and thickness of pipes shall be as shown in the following table. A tolerance up to minus 10% may however, be allowed against these standard weights.

TABLE 1

Table showing the standard weight and thickness of SCI / HCI pipes

Sl. No.	Nominaldiaof (inKg)	Thicknessin Bore(Inmm)	Overallweightofpipeexcluding ears mm.	1.5m	1.8m 2.0m
01	100	5.00	18.14	21.67	24.15
02	50	5.00	9.50	11.41	12.67

A tolerance up to minus 15 percent in thickness and 20mm in length will be allowed. For fittings, tolerance in length shall be plus 25 mm minus 10 mm.

Thethicknessoffittingsandtheirsocketandspigot dimensions hallconformtothethicknessand dimensions specified for the corresponding sizes of straight pipes. The tolerances in weights and thickness shall be the same as for straightpipes.

The access door fittings shall be designed so as to avoid dead spaces to avoid accumulation of filth.Doorsshallbeprovidedwith3mmrubberinsertion packing andwhenclosedandboltedtheseshall bewatertight.

SAND CAST IRON FLOOR TRAP: - Sand cast iron floor trap shall be P' or S' type with minimum 50 mm seal and shall be of self-cleansing design.

FIXING AND JOINTING: - The pipes and fittings shall be fixed in vertical alignment unless otherwise specified and shall be secured to the walls at all joints with M.S. holder butt6 clamps. The clampsshallbemadefrom1.6mmthickM.S.sheetof30mmwidth,benttotherequiredshapeandsize soastofittightlyonthesocketofthepipe,whentightenedwithscrewbolts.Itshallbeformedoutoftwo Semi circular pieces hinged with 6 mm dia M .S. pin on one side and provided with flanged ends on the othersidewithholestofitinthescrewboltandnut40mmlong.Theclampshallbeprovidedwithahook made out of 275 mm long 10 mm diameter M.S.bar riveted to the ring at the centre of one semicircularpiece.Theclampsshallbefixedtothewallbyembeddingtheirhooksincementconcreteblo cks100mm x100mmx100mm,1:2:4mixforwhichnecessaryholesshallbemadeinthewallatproperplaces. The clampsshallbekeptabout25mmclearoffinfaceofwall,soastofacilitatecleaningandpaintingthe pipes.

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Thepipesshallbefixedvertically. Thespigotoftheupperpipeshallbeproperlyfittedinthesocket ofthelowerpipessuchthatthereisuniformannularspaceforfillingwiththejointingmaterial.Theannular spacebetweenthespigotandsocketshallbefilledwithafewturnsofspunyarnsockedincementslurryor blown bitumen grade 85 / 25 or lead caulked. Caulking tools shall press these home. More skins of yard shall be wrapped, if necessary, and shall be rammed home. The joint shall then be filled with stiff cement mortar (1:2) well pressed with caulking tools and finished smooth at top at an angle of 45 degree sloping up. The joint shall be kept wet at least for seven days by tying four folds of gunny bag to the pipe and keeping it moistconstantly.

Where pipes are embedded in masonry these shall be fixed in the masonry work as it proceeds. Thepipeshallbekeptverticalortothelineasdirectedbytheengineer-in-charge. Thepipeshallhavea minimumsurroundingof12mmthickcementmortarateveryportionofexternalsurface.Themortarshall beofthemixasusedinmasonrywork. Thelengthshallbecaulkedinwithleadassoonasthenextlength ofpipeplacedinposition. Theopen-end(socket end)ofthepipeshallbekeptclosedtill; thenextlengthof pipeisfittedandjointedtopreventanybrickbatorconcreteorpiecesofwoodfallinginandchockingthe pipe.

The spigot end shall butt the shoulder of the socket and leave no gap in between. The annular spacebetweenthesocketandspigotwillbefirstwellpackedinwithspun-yarnleaving25mmfromthelip ofthesocketforthelead. Thejointsshallthenbeleadcaulkedasdescribedindetailunderjointingof C.I. S/Spipeswithleadjointsinpublicw/Ssectionofthisspecification.Pipeswithearsshallbesecuredwith 40 mm bore steel or iron barrel distance pieces or bobbins and stout C.I. / M.S. nails 10 cm long driven into hard wood plugs fixed in walls. Access doors to fittings shall be provided with 3 mm thick rubber insertionpackingandreceivedwithscrewstomakethemair/watertight.

Allsoilpipesshallbecarriedupabovetheroofandshallhaveawirebaboonguardoraowlas specified.

HEIGHT OF VENTILATION PIPES: - All soil pipes shall be carried up above the roof and shall have sand cast iron terminal guard. The ventilating pipe or shaft shall be carried to a height of at least 1 mtr. above the outer covering of the roof of the building or in the case of a window in a gable wall or a dormer window it shall be carried up to the ridge of the roof or at least 2 metres above the top of the window.Inthecaseofaflatrooftowhichaccessforuseisprovided, itshallbecarriedup toaheightofat least 1 mtr. above the parapet or 2 metres above the roof whichever is greater and shall *not terminate* within2metresmeasuredverticallyfromthetopofanywindoworopeningwhichmayexistuptohorizontal distanceof5metresfromtheventpipeintosuchbuildingandinnocaseshallbecarriedtoaheightless than 3 metres above plinthlevel.

Whereventilatingpipesarecarriedinpipeshafts,theshaftshallbeofaminimumsizeof1metrex 1 metre. If shafts are also used to give light and air to rooms, the ventilating pipe must be carried to a horizontal distance at roof level of not less than 5 metres from the side of the shaft. The payment for the shaft be madeseparately.

The pipes above the parapet shall be secured to the wall by means of M.S. stay and clamps as explained below.

M.S.STAYSANDCLAMPS:-Sandcastironpipesaboveparapetshallbefixedwithm.S.clamps and stays. The clamps shall be made from 1.5mm thick M.S. flat of 32 mm width, bend to the required shape and size to fit tightly on the socket, when tightened with screw bolts. It shall be formed of two semicircular pieces with flanged ends on both sides with holes to fit in the screw bolts and nuts, 40 mm long.Thestayshallbeminimumonemeterlongof10mmdiaM.S.bar.Oneendofthestayshallbebent to form a hook to be fixed with the clamps by means of bolt and nut cm x 10 cm x 10 cm in 1:2:4 mix. The concreteshallbefinishedtomatchwiththesurroundingsurfaces.

OTHER DETAILS: - The connection between the main pipe and branch pipes shall be made by using branches and bends with access door for cleaning.

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Floortrapsshallbeprovidedwith25mmdiapuffpipewherelengthofthewastesismorethan180 cmorthefloortrapisconnectedtoawastestackthroughbends.

Thewastefromlavatories,kitchens,basins,sinks,bathsandotherfloortrapsshallbeseparately connected to respective waste stack of inspection chamber / upper floors. The waste stack of lavatories willbeconnecteddirectlytomanholewhilethewastestackofothersshallseparatelydischargeoverfully trap.

Every starting manhole shall have a 100 mm sand cast iron vent, terminating at 1 mtr above the parapet of the building.

The main anti-siphonage pipe shall be of 50 mm internal diameter. When more than one branch from water closet / sink are connected with the soil pipe and discharge into it, anti-siphonage from the lowestoneshouldpassthroughthewallandbecarriedupoutsidethebuildingparalleltothesoilpipetoa point1.5metresminimumabovethehighestbranch.Itcanthenbeconnectedtothesoilpipeoritcanbe carried in dependently. The anti-siphonage pipes of all the intermediate floors, water closets should be joinedwiththemainanti-siphonagepipe.Theventilatingpipeshallhaveinternaldiameterofnotlessthan 50 mm in all parts and shall be connected with arm of soil pipe on trap through a 45 degree branch, at a pointnotlessthan7.5cmandnotmorethan30cmfromthehighestpartofthetrapandonthesideofthe water seal which is nearest to the soil pipe the jointing shall be done according to the specification for piping materials used in soil, vent or wastepipes.

Joints shall be filled land caulked as described under sub-head "water supply". The depth of lead from the lip of the pipe socket shall be 25 mm.

TESTING:-Allsandcastironpipesandfittingsincludingjointsshallbetestedbyasmoketestto thesatisfactionoftheEngineer-in-chargeandleftinworkingorderaftercompletion.Thesmoketestshall be carried out as statedunder.

Smokeshallbepumpedintothepipeatthelowestendfromasmokemachine,whichconsistsof a bellow and burner. The material usually burnt is greasy cotton waste, which gives out a clear pungent smoke,whichiseasilydetectablebysightaswellasbysmellifthereisleakageatanypointofthedrain.

PAINTING:-Allthesandcastironpipesandfittingsshallbepaintedwithcolourswithtwocoatsof paintoveracoatofprimeronexposedsurfacesasdirectedbytheEngineer-in-charge.Besides,thesand castironpipesandfittingsshallbepaintedwithacoatofcoaltartotheinsidesurfacesbeforelayingand jointingofpipesandfittings.Thespecificationforpaintingasdescribedintherelevantsub-headsofOrissa StateP.W.D.specificationandrevisedfromtimetotimeshallapplyinthiscasealso.

REQUIREMENTS OF JOINTING MATERIALS FOR H.C.I. BUILDING PIPES AND FITTINGS;

The requirement of jointing materials like cement, gasket for Hard Cast Iron pipes and fittings is indicated in the table below.

TABLE

Table showing the requirement of jointing materials for HCI building pipes and fittings.

1. REQUIREMENT OF LEAD AND GASKET CEMENT
FOR JOINTING H.C.I. PIPES (EACH JOINT)

Dia of pipe In mm	lead in Kg.	Gasket InKg(samefor Lead andcement Joints)	Cementin Kg.
100	1.2	0.13	0.12
50	0.36	0.06	0.06

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A. **Sanitary Ware &AlliedFittings:**

1. **General:**

All sanitary fixtures and their allied fittings should be of first quality, manufactured by reputed manufacture Hindware/ E.I.D. Parry Ltd./Nycer /Madhusudan ceramics or equivalent. These should be approved by the consultant / Engineer-in-charge before use.

2. Squatting pattern W.C. pan (Orissa patternClosets):

Thewatercloset sshallbeofvitreouschinaofspecifiedsizeandpattern,integralflushingrim.Itshall haveth eflushinginletattheback.TheOrissaclosetsshouldbeofapprovedqualityconfirmingtoI:S:S:-2556(part-III).

The squatting type Indian water closets (Orissa closet) shall be sunk in floor sloped towards the panin a workmanship like manner. The closet shall be fixed on a proper cement concrete base of 1:3:6 proportions, taking care that the cushion is uniform and even without closet, to receive the specified thicknessofthefloorfinishing.ThejointbetweentheclosetandtheP.V.C.(S.W.R.).Trapshallbemade withW.C.ringandrubberlubricantandshallbeofleakproof.

3. ***Wash HandBasin:***

The wash hand basin shall be of the white vitreous china of approved quality, make and brand I.S.I. marked. It shall be one-piece construction with an integral combined overflow. The size of the basin shall be specified. Each basin shall be provided with one 15mm dia C.P. Brass pillar Tap, 32mm dia C.P waste C.P. chain and rubber plug, unions, joints, C.P. Bottle trap casted PVC waste pipe complete in all respects of approved quality.

The basin shall be supported on a pair of R.S. or C.I cantilever brackets (built in type)m embedded and fixed in wall with cement concrete, M20. These brackets shall be painted to the required shade with two coats of synthetic enamel paint over coat of priming. The waste of the basin shall discharge into a floor trap or channel through bottle trapsPVCwastepipeasspecified.One32mmdiaC.P.bottletrapistobefixedtothewasteofthebasin,&theo utlet of the bottle trap is to be connected to the waste pipe, to discharge the waste to the foresaid *floor trap. The inlet* connectiontothebasinshallbemadewith450mmlong15mmdiaheavytypeP.V.C.connectionpipe.

4. **KitchenSink:**

Unless otherwise mentioned the kitchen sink and drain board (if used) shall be of white vitreous china or fire *clayasspecifiedandofapprovedquality,makeandbrand,confirmingtoI.S.S.Itshallbeone-*piececonstructionwith integralcombinedoverflow.Thesizeofthesinkanddrainboardshallbespecified.

Eachsinkshallbeprovidedwith15mmdiaC.P.brass,BibCock,longbody40mmC.P.wastewithoverfl owC.P chainandrubberplug,unionsetc.,completeinallrespectsasspecifiedandofapprovedquality.

The sink shall be supported on a pair of M.S. or C.I. cantilever brackets (built in type) embedded or fixed in position in the wall by cement concrete M20. The brackets shall be painted to *required shade with two coats of* approvedsyntheticenamelpaintoveracoatofpriming.Thewasteshoulddischargeintoafloortraporchan nel.The wastepipeshouldbe40mmdiaPVCpipejointedtothewasteofthesinkwithabrassunionnut.

5. **StandingUrinals**

The urinals shall be flat pattern lipped front basin of required dimension of white/coloured vitreous china and onepiececonstructionwithinternalflushingbox,rimofanapprovedmakeandbrandasspecified.Itshallb efixedin thepositionbyusingwoodenplugembeddedinthewallwithscrewsofpropersize.Eachurinalshallbeconn ectedto a 40mm dia PVC waste pipe, which shall discharge into a channel or floor trap. The lip of urinal shall be kept at 525mm from floor level, while fixing the urinal on thewall.

Where no of urinals are fixed in a line, the distance between the center to center of each urinal shall be kept 750mm and each urinal should be separated from one to other by a partition

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plate. The center-to-center partition plates shall be kept 750mm.

The partition plates shall be of one-piece kota stone plates, cut to size or partition wall and front corners rounded. The partition plates are embedded in wall with cement concrete and finished smooth. The bottom of the partition plates should be kept 500mm above floor level and top should be kept at 1250 mm above floor level. The plates should project 600mm from wall surface. The width of the plates should be embedded inside the wall and should not be less than 100mm. The thickness of the plates shall be minimum of 25 mm to 32 mm. Thickness of partition wall should be limited to 150mm including smooth surface finishing.

For flushing the urinals each urinal shall be, connected with one 20mm dia G.I. Pipe (Medium class). One end of each of this pipe 15mm PVC connection pipe shall be inserted into the inlet of the Urinal and jointed with jute andputtywhereastheotherendisconnectedeitherwithateeorbendwithwaterpipelinefixedonthewallh orizontal above the urinals. In each 20mm dia flush pipe, one 20 mm dia gunmetal gate valve angle stopcock to be fixed. By opening this valve, the water will flow to the rims of urinal through the inlet pipe and flush the urinal. After flush, the valve can be closed to avoid wastage of water. One 40mm dia P.V.C. waste pipe shall be connected to the waste of eachurinal,todischargethewasteintothechannelortrap.
Oneendofthiswastepipeshallbemadeacupsizetofit into the projected waste and tightened with screws and wasteclamp.

1. **Squatting UrinalPlates:**

Theurinalplatesshallbeofwhiteglazedvitreouschinawithintegralflushingrimofsize450mmX350mmof approvedmakeandbrandasspecified.Thereshallbewhitevitreouschannelwithstopandoutletpiecesinthefront. These plates shall be fixed on C.C. at 75mm to 100mm above floorlevel.

Forflushingarrangement,one25mmdiaG.I.commonwaterpipeline(minimumsize)shallbefixedonthewallparalleto floor. For each urinal one 20mm dia G.I. Branch pipe shall be taken down upto 12mm from floor level just at the center of each plate,inwhichone20mmdiagatevalvesisfixedat1500mmabovefloorlevel.At1200mheights,the20mm diaflashpipeshall be divided into two branches with a tee and fixed horizontal. 300mm on either side and then with the help of elbows, both the branches shall be taken downward and connected to the inlets of the urinal plates at floor level. By operating the valve as above, the water will rush into the rims of the urinal plate and flushit.

Wheretherearenumberof Urinalsfixedinaline,eachUrinalshouldbeseparatedbyapartitionplate fixedin thecentreoftwoUrinalPlates.Thecentretocentredistanceofthepartitionplacesshallbekept750mminimum.

The partition plates shall be of one-piece kota stone plate, 25 mm to 52mm thick, cut to sizes and front corners rounded. The plates are embedded in wall with cement concrete and finished smooth. The bottom of the partition plates wall shall be kept flushed to Urinal top level, the top level shall be kept at 1200mm from the Urinal Plate top and the projection form the wall shall be 600mm. The width of the plate to be embedded inside the wall should not be less than 100mm.

2. **MIRROR:**

Materials:-

Themirrorshallbeofsuperiorglasswithedgesroundedofforlevelledasspecified.Itshallbefree from flaws, speaks or bubbles. The size of the mirror shall be 60 mm x 45 mm unless specified otherwise and its thickness shall be not less than6mm.

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 pain.

Fixing: - The mirror shall be mounted on 6 mm thick plain asbestos sheet ground and shall

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be fixed on the position by means of CP brass screws and CP brass washers, over rubber washers and wooden plugs firmly embedded in the wall. CP brass clamps with CP brass screws may be alternative methods of fixing where so directed. Chromium plating shall be of grade "B" type *conforming to IS 1069-1958 or as revised from time to time. Unless specified otherwise, the longer* side shall be fixed horizontally. The height of the bottom edge of the mirror shall generally be 120 cm above the floor level unless otherwise specified.

3. **Glass shelfunit**

The shelf shall be of glass of best quality with edges rounded off, and shall be free from flaws, speaks or bubbles.Thesizeoftheshelfshallbe60cmx120cm.Unlessotherwisespecifiedandthicknessnotlessthan 6mm. The shelf shall have CP brass guardrail resting on rubber washers on the glass plate and CP brass brackets which shallbefixedwithCPbrassscrewstowoodenplugfirmlyembeddedinthewalls.Chromiumplatingshallbe ofgrade "B"typeconformingtoIS1068-1958orasrevisedfromtimetotime.Theheightoftheglassshelfabovethefloorlevel shall be 115 cm unless otherwisespecified.

SCHEDULE-A

CERTIFICATE OF NO RELATIONSHIP

I/We hereby certify that I/We am/are** **related/not related** *(*) to any officer of PR & DW* Department of the rank of Assistant Engineer & above and any officer of the rank of Assistant / Under Secretary and above of the PR & DW Department, Govt. of Orissa. I/We* am/are* aware that, if the facts subsequently proved to be false, my/our* contract will be rescinded with forfeiture of E.M.D and security deposit and I/We* shall be liable to make good the loss or damage resulting from such cancellation.

I//we also note that, non-submission of this certificate will render my / our tender liable for rejection.

(*) - Strike out which isnotapplicable

SignatureoftheTenderer
Date:-

Contractor

Block Development Officer, Patnagarh

SCHEDULE-B

CERTIFICATEOFEMPLOYMENTOFUNEMPLOYEDGRADUATEENGINEER / DIPLOMAHOLDERS

(for Super class / special class / A class contractors only)

I/Weherebycertifythatatpresentthefollowing Engineeringpersonnelareworkingwithme/inourfirm/company and their bio-data are furnishedbelow.

Sl. No.	Name of Engineering personnel appointed for supervising contractor's work with address.	Qualification	Date of Appointment	Monthly emolument	Whether full time engagement and continuous.	If they are superannuated / retired / dismissed or removed personnel from state Govt./ Central Govt./ Public Sector Undertaking/ private Companies and orany one ineligible for Government service.
1	2	3	4	5	6	7

I / We also note that, non-submission of this certificate will render my / our tender liable for rejection.

Signature of the tenderer.
Date:-

Contractor

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Schedule-C

ANNEXURE – I

LISTOFPLANTANDEQUIPMENTST OF DEPLOYEDONTHECONTRACTWORK
(MINIMUM REQUIREMENT)

Sl. No.	List of plants and equipments		Marks
01.	Truck/Tipper		
02.	Concrete Mixture		
03.	Generator		
04.	Plate Vibrator		
05	Needle Vibrator		
06	**Centring& shuttering materials.**		
07	Water Tanker		
08	Except if any		
		Total:-	

ANNEXURE – II OF SCHEDULE-C

Apart from the above the contractor shall have to arrange other machineries if any required for the work.

SCHEDULE-D

WORK EXPERIENCE
LIST OF SIMILAR NATURE OF PROJECTS EXECUTED

Name of Employer	Name of Location and Name of Work	Contract Price in Indian Rupees/ Agreement No.	Major items of Works	Stipulated date of Commencement/ completion of the Work as per Agreement.	Actual date of Completion of the Work.	Value of work actually executed during last 5 financial year		Reasons for delay in starting/ completion if any.
						Financial year	Value	
1	2	3	4	5	6	7	8	9

ote:- The above information is to be certified by the Engineer in Charge / Employer not bellow the rank of Executive Engineer.

Contractor

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SCHEDULE-E

INFORMATION REGARDING CURRENT LITIGATION, DEBARRING EXPELLING OF TENDERED OR ABANDONMENTOF WORK BY THE TENDERER

1. a) Is the tenderercurrentlyinvolved in any litigation relating to the work. Yes / No

   b) If yes: givedetails:

2. a) Has the tenderer or anyofits Constituent partners been debarred/ expelled by any agency in India during the last 5 years Yes / No

3. a) Has the tenderer or anyofits constituent partnersfailed toperform on any contract work in India during the last 5 years Yes / No

   b)If yes, givedetails:

Note: If any information in this schedule is found to be incorrect or concealed, qualification application will be summarily be rejected.

Signature of the contractor

Block Development Officer, Patnagarh

Contractor

SCHEDULE -F

(To be submitted in original in legal stamp paper)

1. The undersigned, do hereby certify that all the statements made in the required attachments are true and correct.
2. The undersigned also hereby certifies that neither our firm M/s_____ _____nor any of its constituent partners have abandoned any road/ bridge/Irrigation /Buildings or other project work in India nor any contract awarded to us for such works have been rescinded during the last five years prior to the date of thisbid.
3. The undersigned hereby authorised and request (s) any bank, person, firm or Corporation to furnish pertinent information as deemed necessary and as requested by the Department to verify this statement or regarding my (our) competency and generalreputation.
4. The undersigned understands and agrees that further qualifying information may be requested and agree to furnish any such information at the request of theDepartment.

(Signed by an Authorised Officer of the firm)
Title of Officer
Name of Firm
Date.

Block Development Officer, Patnagarh

Contractor

SCHEDULE –G

Existing commitments and ongoing works

Description of works	Place & State	Contract No.	Name & Address of Employer	Value of Contract (Rs.Lakh)	Stipulated period of Completion	Value of works remaining to becompleted (Rs. Lakh)	Anticipated date of completion
1	2	3	4	5	6	7	8

*Attach Certificate(s) from the Engineer -in-charge

Contractor

Block Development Officer, Patnagarh

Schedule-H

Form of Bid Security Declaration (Not Applicable)

Name Of the Work–

Date:
Bid Identification No.

To

(Fill up the complete name and address of the Authority/Employer/Tender Inviting Authority)

We, the undersigned declare that:

1. We understand that, according to your conditions, bids must be supported by a Bid Security Declaration.

2. We accept that the Authority/Employer/Tender Inviting Authority shall cancel our empanelment and / or suspend/prohibit/debar/blacklist from participating in bidding in any contract of the State for a minimum period of 180 days, if we are in breach of our obligation(s) under the bid conditions, becausewe:

   (a) Have withdrawn out Bid prior to the expiry date of the bid validity specified in the letter of Bid or any extended date provided by us;or
   (b) Having been notified of the acceptance of our Bid by the Employer prior to the expiry date the bid validity in the Letter of Bid or any extended date provided byus,
      (i) Failure of use to furnish the Performance Security and Additional Performance Security, if required in accordance ITB/Terms of the Bid Document,or
      (ii) Fail to agree to the decisions of the contract negotiation meetingor
      (iii) Failure refuses to execute theContract.

3. We understand this Bid Security Declaration shall expire, if we are not the successful Bidder, upon the earlier of your notification of the name of the successful Bidder through award of contract; or after the expiry date of the Bidvalidity.

Name of theBidder_____

Name of the person duly authorized to sign the Bid on behalf oftheBidder_____

Title of the person signingtheBid _____

Signature of the personnamedabove _____

Datesigned_____dayof_____

- In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder
- Person signing the Bid shall have the power of attorney given by the Bidder attached to the Bid.

[Note: In case of a Joint Venture, the Bid Security Declaration must be in the name of all members to the Joint Venture that submits the Bid]

Block Development Officer, Patnagarh

Contractor

SCHEDULE – I

MEMORANDUM OF UNDERSTANDING

First Party I Sri/Smt....., Aged ..... Years, S/O-....., At / P.O. / Dist-..... (Hereinafter called the First Part)

AND

Second Party I Sri/Smt....., Aged ....Years, S/O-..... , At / P.O. / Dist-..... (Hereinafter called the Second Part) having H.T. / L.T. license registration No..... valid up to .....

AND WHEREAS the First Party of 1st part is the managing partner of .....

AND WHEREAS the First Party willing to appoint the Second Party to execute the E.I. portion for the tender work, "....."

AND WHEREAS the Second Party accepted the offer of First Party.

NOW THIS DEED OF AGREEMENT WITNESSES AS FOLLOWS;

1) That, the Second Party shall do all E.I. works, if the tender is awarded to First Party.
2) That, the Second Party shall fulfill all the E.I. works as per the tender schedule by instruction of Engineer-in-Charge.
3) That, the First Party shall receive payment, signing the bill the document for the concerned work.
4) That, the Second Party shall abide the rules, regulations and specification of E.I. works of above said matter.

witness where of both the party have signed in presence of

WITNESS

W_1 -

W_2 -

Block Development Officer, Patnagarh

Contractor

ENDER INVITING AUTHORITY:- BLOCK DEVELOPMENT OFFICER, PANCHAYAT SAMITI, PATNAGARH BALANGIR

ME OF THE WORK:- CONSTRUCTION OF DAY CARE SUB-CENTRE CUM HEALTH & WELLNESS CENTRE AT PADHEL UNDER PATNAGARH BLOCK

Identification No:- 04/PATNAGARH/2023-24
etailed Tender Call Notice No.:- 01/PATNAGARH/2023-24
NTRACT NO.

DER NAME:- EXCESS/LESS(+/-) %

SCHEDULE OF WORKS

DESCRIPTION OF WORKS	No / Qnty.	Unit	Estimated Rate		Amount (Rs.)
			Figures	Words	
Part-I Civil					
Diluting and injecting chemical emulsion (to be supplied free of cost at site of work) for PRE CONSTRUCTIONAL Anti-termite treatment and creating a continuous chemical barrier under and all-round the column pits, wall trenches, basement excavation, top perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surroundings of pipes and conduits etc. complete as per specifications (plinth area of the building at ground floor only shall be measured for payment) including cost of all materials, labour, T&P etc complete in all respect and as per direction of the Engineer-in-charge.	106.84	Sqm	138.00	Rupees One Hundred ThirtyEight Only	14743.92
Earth work in excavation of foundation trenches in hard soil including dressing of sides and levelling the bed up to the required depth and depositing the excavated materials away from the work site within 50m initial lead & 1.5m initial lifts with sundries & T&P required for the work complete including cost of all labour,labour cess,T&P,sundries etc. as directed by the Engineer in charge.	165.41	Cum	206.80	Rupees Two Hundred Six Paise Eighty Only	34206.79
Filling foundation and plinth with excavated earth complete wth all.	55.14	Cum	57.40	Rupees FiftySeven Paise Fourty Only	3165.04
Supplying and filling in foundation and plinth with good quality river sand including watering, ramming with cost, conveyances, royalties, taxes of all materials and cost of all labour with T&P required for the work etc. complete as per specification & direction of Engineer-in-charge	96.89	Cum	333.60	Rupees Three Hundred ThirtyThree Paise Sixty Only	32322.50
Providing and laying plain cement concrete of proportion (1:3:6) in foundation and floors using 4 cm. size black hard crusher broken granite stone metal and screened and washed sharp sand for mortar of approved quality and from approved quarry including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels laid in layers not exceeding 15 cm. thick in each layer including cost, conveyance, royalties, taxes of all materials and cost of all labours,labour cess, T&P etc complete as per the direction of the Engineer-in-charge.	30.24	Cum	4414.10	Rupees Four Thousand Four Hundred Fourteen Paise Ten Only	133482.38
Plain cement concrete (1:2:4) using 12mm size black hard crusher broken granite chips of approved quality from approved quarry including hoisting, lowering and laying concrete in layers, watering, curing etc. complete including cost, conveyance, royalties and taxes of all materials with labour,labour cess and T&P etc. required for the work complete as per the direction of the Engineer-in-charge.	7.51	Cum	5813.90	Rupees Five Thousand Eight Hundred Thirteen Paise Ninety Only	43662.39

ntractor

Block Development Officer, Patnagarh

7	Fly Ash brick masonry in cement mortar (1:6) in foundation & plinth using Fly Ash bricks of 23 x 11 x 8 cm size having a crushing strength of not less than 75 kg./sqcm with dimensional tolerance ± 2% including splays cutting circular moulding chamfering and corbelling and similar such type of works with all necessary projections watering and curing after immersing the bricks in water at least for six hours before use including cost, conveyance, and royalties of all materials with all labour,labour cess and T & P required for the work complete in all respect as per direction of Engineer-in-Charge	35.31	Cum	4232.80	Rupees Four Thousand Two Hundred ThirtyTwo Paise Eighty Only	149460.17
8	Fly Ash brick masonry in cement mortar (1:6) in super structure using Fly Ash bricks of 23 x 11 x 8 cm size having a crushing strength of not less than 75 kg./sqcm with dimensional tolerance ± 2% including splays cutting circular moulding chamfering and corbelling and similar such type of works with all necessary projections watering and curing after immersing the bricks in water at least for six hours before use including cost, conveyance, royalties and taxes of all materials with all labour,labour cess and T & P required for the work complete in all respect as per direction of Engineer-in-Charge.					
8.1	Ground Floor	37.96	Cum	4271.20	Rupees Four Thousand Two Hundred SeventyOne Paise Twenty Only	162134.75
8.2	1st Floor	30.60	Cum	4558.90	Rupees Four Thousand Five Hundred FiftyEight Paise Ninety Only	139502.34
8.3	Head Room(S+1)	13.31	Cum	4889.70	Rupees Four Thousand Eight Hundred EightyNine Paise Seventy Only	65081.91
9	Fly Ash brick masonry in cement mortar (1:4) in super structure using Fly Ash bricks of 23 x 11 x 8 cm size having a crushing strength of not less than 75 kg./sqcm with dimensional tolerance ± 2% including splays cutting circular moulding chamfering and corbelling and similar such type of works with all necessary projections watering and curing after immersing the bricks in water at least for six hours before use including cost, conveyance, royalties and taxes of all materials with all labour,labour cess and T & P required for the work complete in all respect as per direction of Engineer-in-Charge.					
9.1	Ground Floor	4.38	Cum	4474.30	Rupees Four Thousand Four Hundred SeventyFour Paise Thirty Only	19597.43
9.2	1st Floor	6.18	Cum	4762.00	Rupees Four Thousand Seven Hundred SixtyTwo Only	29429.16

Contractor

Block Development Officer, P

Providing, lifting, hoisting and laying Reinforced cement concrete of M-20grade as per approved designs and drawings having a minimum compressive strength (in work test) 250 Kg. / Square cm. in 15 cm. cubes at 28 days after mixing and test conducted in accordance with I.S. 516 using 12 mm. to 20 mm. size black hard crushed broken granite stone chips and screened and washed sharp sand for mortar of approved quality from approved quarry, washed and cleaned (20mm. size chips not to exceeds 25 %) to be mixed in concrete mixture with Portland slag cement (PSC) including hoisting, lowering, laying and compaction concrete by using vibrators, watering and curing for 28 days, centering and shuttering then after dismantling and removing debris from the work site and finishing the exposed surface smooth providing grooves or Leads wherever necessary including cost, conveyance, loading, unloading, royalties and taxes of all materials and cost of all labours, sundries, T & P required of the work etc. complete in all respect as directed by the Engineer-In-Charge. But excluding cost and conveyance of M.S. rods or Tor steel and binding wires and flat our charges for straightening, cutting, bending etc. of M.S. rods or tor steel tying the grills and placing in proper position.					
Footing	16.70	Cum	4701.70	Rupees Four Thousand Seven Hundred One Paise Seventy Only	78518.39
Plinth Beam	6.12	Cum	5067.90	Rupees Five Thousand SixtySeven Paise Ninety Only	31015.55
COLUMN Super Structure					
Ground Floor	2.98	Cum	10776.70	Rupees Ten Thousand Seven Hundred SeventySix Paise Seventy Only	32114.57
1st Floor	2.23	Cum	12114.70	Rupees Twelve Thousand One Hundred Fourteen Paise Seventy Only	27015.78
Head Room(S+1)	0.64	Cum	13715.70	Rupees Thirteen Thousand Seven Hundred Fifteen Paise Seventy Only	8778.05
LINTEL					
Ground Floor	1.41	Cum	8376.70	Rupees Eight Thousand Three Hundred SeventySix Paise Seventy Only	11811.15
1st Floor	1.28	Cum	9234.60	Rupees Nine Thousand Two Hundred ThirtyFour Paise Sixty Only	11820.29
Head Room(S+1)	0.56	Cum	10259.60	Rupees Ten Thousand Two Hundred FiftyNine Paise Sixty Only	5745.38
R.C.C OF BEAM					
Ground Floor	7.45	Cum	10776.70	Rupees Ten Thousand Seven Hundred SeventySix Paise Seventy Only	80286.42
1st Floor	8.00	Cum	12114.70	Rupees Twelve Thousand One Hundred Fourteen Paise Seventy Only	96917.60
Head Room(S+1)	1.13	Cum	13715.70	Rupees Thirteen Thousand Seven Hundred Fifteen Paise Seventy Only	15498.74
R.C.C OF SLAB					

Block Development Officer, Patnagarh

Treasurer

10.6.1	Ground Floor	7.64	Cum	7247.30	Rupees Seven Thousand Two Hundred FourtySeven Paise Thirty Only	55393.37
10.6.2	1st Floor	6.13	Cum	7879.40	Rupees Seven Thousand Eight Hundred SeventyNine Paise Fourty Only	48305.72
10.6.3	Head Room(S+1)	0.72	Cum	8633.30	Rupees Eight Thousand Six Hundred ThirtyThree Paise Thirty Only	6215.98
10.7	CHAJJA					
10.7.1	Ground Floor	16.40	Sqm	790.90	Rupees Seven Hundred Ninety Paise Ninety Only	12970.76
10.7.2	1st Floor	16.03	Sqm	895.90	Rupees Eight Hundred NinetyFive Paise Ninety	14361.28
10.7.3	Head Room(S+1)	6.00	Sqm	1021.70	Rupees One Thousand TwentyOne Paise Seventy Only	6130.20
10.8	STAIRCASE					
10.8.1	Ground Floor	2.29	Cum	10263.60	Rupees Ten Thousand Two Hundred SixtyThree Paise Sixty Only	23503.64
10.8.2	1st Floor	2.29	Cum	11499.00	Rupees Eleven Thousand Four Hundred NinetyNine Only	26332.71
11	25mm thick CC 1:2:2 with 6mm size CB chips for grading concret over roof slab etc. complete.					
11.1	Ground Floor	15.61	Sqm	302.00	Rupees Three Hundred Two Only	4714.22
11.2	1st Floor	70.14	Sqm	332.20	Rupees Three Hundred ThirtyTwo Paise Twenty Only	23300.51
11.3	Head Room(S+1)	10.22	Sqm	367.00	Rupees Three Hundred SixtySeven Only	3750.74
12	Supplying Cutting, straightening coiled or bent up M.S. Rod or tor steel of primary steel producers such as SAIL / TATA / RINL / JINDAL STEEL / SHYAM STEEL (grade Fe-500D) etc. including bending, binding, welding and jointing if necessary and tying the grills and placing in position as required for R.C.C. Work and for providing fan hooks as required, hoisting, lowering, laying including cost, conveyances of M.S. Rod or tor steel and binding wires of 18 to 20 gauge and labour required for the work for bending, binding and tying the grills in all floors with labour cess etc. (payment will be made on standard weight of B.I.S. for M.S. Rods or tor steel only) etc. complete as per specification & direction of Engineer-in-charge.					
12.1	Ground Floor	48.01	Qntl	9364.00	Rupees Nine Thousand Three Hundred SixtyFour Only	449565.64
12.2	1st Floor	23.59	Qntl	9389.60	Rupees Nine Thousand Three Hundred EightyNine Paise Sixty Only	221500.66
12.3	Head Room	3.72	Qntl	9416.50	Rupees Nine Thousand Four Hundred Sixteen Paise Fifty Only	35029.38

Contractor

Block Development Officer, Patnagarh

ng 12 mm thick cement plaster with cement rta of mix (1:6) with screened and washed sharp sand mo tar and finished smooth to the rough surface of lls all heights after racking out joints including ter g and curing, rounding of corners, providing oov s where ever necessary with cost, conveyance, yalt s of all materials with cost of all labour,labour ss, T&P, and scaffolding required for the work etc. mpl te in all respect as directed by the Engineer in arg					
roun l Floor	166.19	Sqm	145.40	Rupees One Hundred FourtyFive Paise Fourty Only	24164.03
l Flo or	148.72	Sqm	149.00	Rupees One Hundred FourtyNine Only	22159.28
lead oom	87.60	Sqm	152.60	Rupees One Hundred FiftyTwo Paise Sixty Only	13367.76
rovi ng 16 mm thick cement plaster with cement rta of mix (1:6) with screened and washed sharp sand r mo tar and finished smooth to the rough surface of alls all heights after racking out joints including ater g and curing, rounding of corners, providing roov s where ever necessary with cost, conveyance, yalt s of all materials with cost of all labour,labour ss, T&P, and scaffolding required for the work etc. mpl te in all respect as directed by the Engineer in arg					
roun l Floor	431.73	Sqm	208.90	Rupees Two Hundred Eight Paise Ninety Only	90188.40
l Flo or	351.10	Sqm	214.20	Rupees Two Hundred Fourteen Paise Twenty Only	75205.62
lead oom	31.33	Sqm	219.70	Rupees Two Hundred Nineteen Paise Seventy Only	6883.20
ovi ng 6 mm thick cement plaster with cement mortar mix (1:4) with screened and washed sharp sand for rta and finished smooth to R.C.C. work after closed ep hipping & slurry treatment including watering and ing rounding of corners, providing grooves where ever ces ary with cost, conveyance, royalties of all materials th st of all labour,labour cess, T&P, and scaffolding ir d for the work etc. complete in all respect as rect d by the Engineer in charge.					
roun l Floor	87.38	Sqm	164.10	Rupees One Hundred SixtyFour Paise Ten Only	14339.06
l Flo or	72.69	Sqm	168.20	Rupees One Hundred SixtyEight Paise Twenty Only	12226.46
lead oom	7.15	Sqm	172.50	Rupees One Hundred SeventyTwo Paise Fifty Only	1233.38
g, fitting and fixing of Al door with anodized Al. door p of 9202 as vertical member, 9201 as top and 9200 as and bottom member with frame section No.9221 and e clip no. 4660 and the frame to be completed by means ng angle no. 1855 including all cost of labour, T&P, hire of drilling machine, labour charges , etc. complete as ction of the Engineer-in-charge (Top half glass & half of Board)					

Block Development Officer, Patnagarh

16.1	A) Cost of Al. Frame	51.20	Sqm	411.90	Rupees Four Hundred Eleven Paise Ninety Only	21089.28
16.2	B) Cost of 12mm thick prelaminated board including wastages	1.95	Kg	685.00	Rupees Six Hundred EightyFive Only	1335.75
16.3	C) Cost of 5mm thick Black Glass including wastages	1.95	Sqm	705.70	Rupees Seven Hundred Five Paise Seventy Only	1376.12
17	Supplying, fitting and fixing Vitrified tile in floors of approved make conformaing to IS:13755 laid on 20 mm thick cement mortar (1:4) and filling joints with white cement of approved quality including cost of all materials, etc. required for the work all complete as per direction of E.I.C.					
17.1	Ground Floor	75.35	Sqm	966.10	Rupees Nine Hundred SixtySix Paise Ten Only	72795.64
17.2	1st Floor	63.05	Sqm	976.60	Rupees Nine Hundred SeventySix Paise Sixty Only	61574.63
18	Fixing Vitrified tiles in dados skirting and risers of steps on 12mm thick CP (1:3) jointed with neat cement slurry mixed with pigments to match the shade of the tiles including cost, carriage, cost of all labour etc. complete.					
18.1	Ground Floor	17.42	Sqm	1077.10	Rupees One Thousand SeventySeven Paise Ten Only	18763.08
18.2	1st Floor	9.62	Sqm	1093.00	Rupees One Thousand NinetyThree Only	10514.66
19	Supplying, fitting & fixing of Vitrified Industrial floor tiles of premium grade having thickness 8mm to 10mm confirming to IS 4457 of size 30cm x 30cm in floors of approved make laid on 20 mm thick cement mortar (1:4) (1 cement : 4 course sand) and filling joints with slurry including cost of all materials, labour T&P etc required for the work all complete as per direction of the Engineer-in-charge					
19.1	Ground Floor	11.20	Sqm	841.40	Rupees Eight Hundred FourtyOne Paise Fourty Only	9423.68
19.2	1st Floor	6.96	Sqm	851.90	Rupees Eight Hundred FiftyOne Paise Ninety Only	5929.22
20	Priming one coat with wall cement primer (water bound) to make an even finished surface in all floors and heights to wall surface of approved make and shade including sand papering, applying putty wherever necessary & cost of scaffolding, staging charges with cost, conveyance, royalities of all materials, cost of all labour,labour cess T&P etc. complete as per the direction of the Engineer-in-charge.					
20.1	Ground Floor	685.30	Sqm	64.30	Rupees SixtyFour Paise Thirty Only	44064.79
20.2	**1st Floor**					
20.2.1	Inside plaster	423.79	Sqm	65.80	Rupees SixtyFive Paise Eighty Only	27885.38
20.2.2	Outerside plaster	148.72	Sqm	66.90	Rupees SixtySix Paise Ninety Only	9949.37
20.3	**Head Room**					
20.3.1	Inside plaster	38.48	Sqm	67.50	Rupees SixtySeven Paise Fifty Only	2597.40
20.3.2	Outerside plaster	87.60	Sqm	69.70	Rupees SixtyNine Paise Seventy Only	6105.72

Contractor

Block Development Officer, Patnagarh

Finishing plastered surfaces of walls with cement based wall putty (Water based) of approved make and finishing the surface smooth and even by sand papering to receive painting in walls, at all heights with staging wherever necessary with cost, conveyance, of all materials, cost of all labour, labourcess, all T&P etc. required for the work complete in all respect as per the direction of the Engineer-in-charge.					
Ground Floor	431.73	Sqm	70.10	Rupees Seventy Paise Ten Only	30264.27
1st Floor	351.10	Sqm	71.50	Rupees SeventyOne Paise Fifty Only	25103.65
Head Room	31.33	Sqm	73.00	Rupees SeventyThree Only	2287.09
Painting two coats with plastic emulsion paint to make an even finished surface in all floors and heights to wall surface of approved make and shade including sand papering, applying putty wherever necessary & cost of scaffolding, staging charges with cost, conveyance, taxes of all materials, cost of all labour,labour cess, T&P etc. complete as per the direction of the Engineer-in-charge.					
Ground Floor	519.11	Sqm	85.20	Rupees EightyFive Paise Twenty Only	44228.17
1st Floor	423.79	Sqm	86.90	Rupees EightySix Paise Ninety Only	36827.35
Head Room	38.48	Sqm	88.60	Rupees EightyEight Paise Sixty Only	3409.33
Painting two coats with approved antifungal water bound weather seal paints (ISI) of approved colour, shade on wall surface including sand papering, polishing the surface, cost, conveyances, taxes of all materials and cost of all labour,labour cess with T&P etc, complete as per specification & direction of Engineer-in-charge.					
Ground Floor	166.19	Sqm	78.60	Rupees SeventyEight Paise Sixty Only	13062.53
1st Floor	148.72	Sqm	81.50	Rupees EightyOne Paise Fifty Only	12120.68
Head Room	87.60	Sqm	84.40	Rupees EightyFour Paise Fourty Only	7393.44
Supplying, fitting & fixing in all floors of M.S. grills, grill gates, M.S. gates, garage door, collapsible gates with top and bottom rails, steel windows, critical frames for windows, stair case and parapet railing made out of M.S Square bar/ flat including stair case hand railing with 40mm dia G.I.pipe etc. including painting two coats over a coat of redoxide primer as per approved drawing and design with cost of all materials & labour, taxes, labour cess, T&P, sundries etc. complete in all respect as per specification & direction of the Engineer-in-Charge.					
Ground floor	1130.70	Kg	62.20	Rupees SixtyTwo Paise Twenty Only	70329.54
1st Floor	1074.80	Kg	62.20	Rupees SixtyTwo Paise Twenty Only	66852.56

Block Development Officer, Patnagarh

25	Supplying, fitting and fixing of Stainless steel of 304 grade in hand railing using 50mm dia of 2mm thick circular pipe with Balustrade of size 32mm x 32mm x 2mm @ 0.90mtr. C/C and stainless square pipe bracing of size 32mm x 32mm x 2mm in 3 rows in stair case as per approved design and specification, buffing, polishing etc with cost, conveyance of all materials, cost of all labour,labour cess, T&P etc. required for the work complete in all respect as per direction of the Engineer-in-charge.					
25.1	Ground Floor	86.77	Kg	291.00	Rupees Two Hundred NinetyOne Only	25250.07
25.2	1st Floor	211.91	Kg	291.00	Rupees Two Hundred NinetyOne Only	61665.81
26	Priming one coat with any approved primmer (To Receive Enamel paint) including cost of primmer & labour to give an even shade excluding cost of primer. (As per A.R. 93/1)					
26.1	Ground Floor	2.83	Sqm	58.00	Rupees FiftyEight Only	164.14
26.2	1st Floor	6.06	Sqm	59.60	Rupees FiftyNine Paise Sixty Only	361.18
27	Painting two coats with approved enamel paints of approved colour, shade over a coat of primer including sand papering, polishing the surface, cost, conveyances of all materials and cost of all labour etc, complete as per specification & direction of E.I.C.					
27.1	Ground Floor	2.83	Sqm	146.70	Rupees One Hundred FourtySix Paise Seventy Only	415.16
27.2	1st Floor	6.06	Sqm	150.40	Rupees One Hundred Fifty Paise Fourty Only	911.42
28	Providing, fitting and fixing of Al door with anodized Al. door section of 9202 as vertical member, 9201 as top and 9200 as middle and bottom member with frame section No.9221 and tapered clip no. 4660 and the frame to be completed by means of jointing angle no. 1855 including all cost of labour, T&P, hire charges of drilling machine, labour charges , etc. complete as per direction of the Engineer-in-charge (Top to bottom full ACP Board)					
28.1	Cost of Aluminium Frame	127.99	Kg	411.90	Rupees Four Hundred Eleven Paise Ninety Only	52719.08
28.2	Cost of 3mm thick Aluminium Composite Pannel including wastages	9.75	Sqm	203.00	Rupees Two Hundred Three Only	1979.25
29	Supplying, fitting & fixing of 30cm x 30cm/40cm x 40cm special plain/printed series Ceramic floor tiles of premium grade having thickness 7mm to 8mm confirming to IS 13755 in floors laid on 20 mm thick cement mortar (1:4)(1 cement : 4 course sand) and filling joints with slurry including cost of all materials, labour T&P etc. required for the work all complete incl. rubbing as per direction of the Engineer-in-charge					
29.1	Ground Floor	7.62	Sqm	694.43	Rupees Six Hundred NinetyFour Paise FourtyThree Only	5291.56
29.2	1st Floor	4.83	Sqm	705.00	Rupees Seven Hundred Five Only	3405.15

Contractor

Block Development Officer, Patnagarh

e	ng, fitting & fixing of 30cm x 20cm/20cm x 20cm special inted series Ceramic wall tiles of premium grade having ss 6.5mm to 6.7mm confirming to IS 13753 in dadoes, and risers of steps laid on 12 mm thick cement mortar cement : 3 course sand) jointed with slurry mixed with to match the shades of the tiles etc. complete ng cost of all materials, labour T&P etc. required for the complete as per direction of the Engineer-in-charge					
	Ground Floor	38.93	Sqm	767.12	Rupees Seven Hundred SixtySeven Paise Twelve Only	29863.98
2	1st Floor	26.29	Sqm	783.00	Rupees Seven Hundred EightyThree Only	20585.07
	Supplying fitting & fixing of 35mm thick flush door shutters with flush door block board 'A' premium 35mm thick both side teak (Green ply / Allwin) both side laminated with 4 mm thick veneer board (Teak Heritage) (Archid ply/ Green ply) by using adhesives, with all labour, iron fitting & wooden hinged cleats complete & fixed complete in all respect, including cost of iron fitting alluminum fittings, all labours, T&P etc. as per specification approved by the Department & as per direction of the E.I.C.	1.95	Sqm	3628.80	Rupees Three Thousand Six Hundred TwentyEight Paise Eighty Only	7076.16
	Part-II P.H WORK					
2	CPH Works: Supplying all materials, labour, T&P and providing and fixing to wall or ceiling and floor pvc pipes confirming to ASTM-D- 1785/89 (Sch-80) and pipe fittings of the following nominal borewith clamps including making good the wall, ceiling and floor, testing all complete as per specification and direction of the Engineer-in-charge.					
.1	Ground floor					
.1	20 mm CPVC (sdr-13.5) pipes (Oriplast/Supreme)	25.00	Mtr	207.70	Rupees Two Hundred Seven Paise Seventy Only	5192.50
.2	25 mm CPVC(sdr-13.5) pipes (Oriplast/Supreme)	15.00	Mtr	276.20	Rupees Two Hundred SeventySix Paise Twenty Only	4143.00
.3	32 mm CPVC sdr-13.5 pipes (Oriplast/Supreme)	10.00	Mtr	402.70	Rupees Four Hundred Two Paise Seventy Only	4027.00
..	First floor					
.1	20 mm CPVC (sdr-13.5) pipes (Oriplast/Supreme)	20.00	Mtr	213.40	Rupees Two Hundred Thirteen Paise Fourty Only	4268.00
.2	25 mm CPVC(sdr-13.5) pipes (Oriplast/Supreme)	10.00	Mtr	282.20	Rupees Two Hundred EightyTwo Paise Twenty Only	2822.00
.3	32 mm CPVC sdr-13.5 pipes (Oriplast/Supreme)	10.00	Mtr	409.90	Rupees Four Hundred Nine Paise Ninety Only	4099.00
	Supplying all materials, labour, T&P and cutting holes through existing brick work including making good the damages in cement mortar (1:4) for taking G.I. Pipes and fittings / P.V.C. pipes and fittings etc. all complete as per P.H specification and direction of Engineer-in-charge.					
1	230 mm thick wall	14.00	Each	53.00	Rupees FiftyThree Only	742.00

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34	Supplying all materials, labour, T&P and cutting hole in R.C.C floors, roofs, etc upto 19 cm thick for passing G.I. Pipes / P.V.C pipes and fittings etc and repairing the holes after insertion of pipes etc with cement concrete (1:2:4) including finishing complete so as to make it leak proof as per direction of the Engineer-in-charge.					
34.1	250 mm thick wall	10.00	Each	165.80	Rupees One Hundred SixtyFive Paise Eighty	1658.00
35	Supplying all materials, labour, T&P and cutting grooves in pucca floors and walls for taking G.I./P.V.C. pipes and making good the damages as per direction of the E.I.C.	70.00	Mtr	178.80	Rupees One Hundred SeventyEight Paise Eighty Only	12516.00
36	Supplying all materials, labour T&P and fitting and fixing brass/CP fittings of the following nominal bore with supply of all joiniting materials complete as per specification and direction of the Engineer-in-charge.					
37	Supplying all materials, labour, T&P and fixing standard sized two way **Bib cock** of Hindware/Jaquar/Parryware of approved make etc complete including cutting the wall and making good the damages, including cost of all materials complete as per PH specification complete as per direction of Er-in-charge. 15mm dia CP Two way bib cock with Flange.	2.00	Each	971.20	Rupees Nine Hundred SeventyOne Paise Twenty Only	1942.40
38	Supplying all materials, labour, T&P and fixing standard sized **Bib cock** of Hindware/Jaquar/Parryware of approved make etc complete including cutting the wall and making good the damages, including cost of all materials complete as per PH specification complete as per direction of Er-in-charge.15mm dia. nominal bore Long body Bib Cock	9.00	Each	872.80	Rupees Eight Hundred SeventyTwo Paise Eighty Only	7855.20
39	Supplying all materials, labour, T&P and fixing standard sized **Bib cock** of Hindware/Jaquar/Parryware of approved make etc complete including cutting the wall and making good the damages, including cost of all materials complete as per PH specification complete as per direction of Er-in-charge.15mm dia. nominal bore Short body Bib Cock	3.00	Each	720.20	Rupees Seven Hundred Twenty Paise Twenty Only	2160.60
40	Supplying all materials, labour, T&P and fixing standard sized 15mm dia **angular Stop cock** of Hindware/Jaquar/Parryware of approved make etc complete including cutting the wall and making good the damages, including cost of all materials complete as per PH specification complete as per direction of Er-in-charge. 15mm dia CP angle stop cock with wall flange	12.00	Each	715.30	Rupees Seven Hundred Fifteen Paise Thirty Only	8583.60
41	Supplying all materials, labour, T&P and fixing standard sized **pillar cock** of Hindware/ Jaquar/ Parryware of approved make etc complete including cutting the wall and making good the damages, including cost of all materials complete as per PH specification and direction of Engineering-in-charge. 15mm dia brass pillar cock	7.00	Each	725.10	Rupees Seven Hundred TwentyFive Paise Ten Only	5075.70
42	Fixing of 25mm dia Brass / Gun meta ball Valve confirming to IS : 781-1995 of approved make as per specification complete as per direction of Er-in-charge.32mm dia brass or gun metal full way valve (shakti make)	2.00	Each	975.50	Rupees Nine Hundred SeventyFive Paise Fifty Only	1951.00
43	Fixing of 32mm dia Brass / Gun meta ball Valve confirming to IS : 781-1995 of approved make as per specification complete as per direction of Er-in-charge.32mm dia brass or gun metal full way valve (shakti make)	2.00	Each	1025.30	Rupees One Thousand TwentyFive Paise Thirty Only	2050.60
44	Fixing of 40mm dia Brass / Gun meta ball Valve confirming to IS : 781-1995 of of approved make as per specification complete as per direction of Er-in-charge. 40mm dia brass or gun metal full way valve(shakti make)	1.00	Each	1327.30	Rupees One Thousand Three Hundred TwentySeven Paise Thirty Only	1327.30

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ng and fixing circular type stainless steel jalli) with hole for floor /nahani trap etc complete as cification and direction of the Engineer in charge.	7.00	Each	79.00	Rupees SeventyNine Only	553.00
ing all materials, labour, T&P and fitting and fixing SWR soil waste ventilating pipes and fittings of the g outside diameter conforming to ISI No 1992 to walls with nails, bobbins and wooden plugs g in trenches including jointing with supply of ed rubber lubricant by non-heat application l/as per manufacturer's specification, testing, ork in excavation in all kinds of soil and refilling of es as per specification and direction of the Engineer-rge.					
dia CP Health Faucet of Jaquar 1.2mtr long, 8MM ber deluxe	2.00	Each	766.90	Rupees Seven Hundred SixtySix Paise Ninety Only	1533.80
ing all materials, labour, T&P and fitting and fixing SWR soil waste ventilating pipes and fittings of the g outside diameter conforming to ISI No 1992 to walls with nails, bobbins and wooden plugs g in trenches including jointing with supply of ed rubber lubricant by non-heat application l/as per manufacturer's specification, testing, ork in excavation in all kinds of soil and refilling of es as per specification and direction of the Engineer-rge.					
diameter U-PVC SWR pipes(Oriplast type-eme)	12.00	Mtr	569.90	Rupees Five Hundred SixtyNine Paise Ninety Only	6838.80
U-PVC door Tee	7.00	Each	296.70	Rupees Two Hundred NinetySix Paise Seventy Only	2076.90
U-PVC offset	7.00	Each	180.50	Rupees One Hundred Eighty Paise Fifty Only	1263.50
U-PVC door bend	7.00	Each	204.70	Rupees Two Hundred Four Paise Seventy Only	1432.90
U-PVC plain shoe bend	7.00	Each	147.00	Rupees One Hundred FourtySeven Only	1029.00
U-PVC vent cowl	5.00	Each	77.30	Rupees SeventySeven Paise Thirty Only	386.50
P-trap	7.00	Each	299.70	Rupees Two Hundred NinetyNine Paise Seventy Only	2097.90
U-PVC plain bend	7.00	Each	171.30	Rupees One Hundred SeventyOne Paise Thirty Only	1199.10
ying all materials,labour T&P and cutting holels h existing brick or laterite masonry wall for taking pipes and fittings including making good the es etc. all complete as per P.H.Specification and on of the Engineer-In-Charge.					
to 375mm thick wall	5.00	Each	53.00	Rupees FiftyThree Only	265.00
ing all materials, labour T&P and and fixing 12.50 ters/ 0 liters capacity low level flushing cistern of are/Jaquar/Parryware with a pair of cast iron or M.S. ts complete with fittings such as siphonic ements 15mm nominal size brass/pvc ball valve polythene float CP brass handle,unions and couplings nection with inlet, outlet and overflow pipes, 32mm long flush bend, 15mm dia pvc inlet connection cluding cutting holes and making good the same nnecting the flush bend with cistern and closet and ting the inlet pipe with suupply main etc all te as per the specification and direction of the er-in-charge.					
rs capacity PVC cistern with 32mm dia flush bend. **are sleek fresh single flush Starwhite, Size 47.6**	5.00	Each	1609.00	Rupees One Thousand Six Hundred Nine Only	8045.00

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51	Supplying all materials, labour, T&P and fixing vitreous china water closet, squatting pan (Indian type W.C pan/Orissa pattern squatting pan) of Hindware/ Jaquar/ Parryware duly embedded in cement concrete (1:4:8) using 4cm size hard granite metal including fixing a pair of vitreous china 250mm x 130mm x30mm footrest, fixing 100mm dia HCI 'p' or 's' trap (with/without 50mm dia horn) for water colset squatting pan including jointing the trap with pan in cement mortar (1:1) cutting the floor and mending good the damages etc all complete as per specification and direction of the Engineer-In-Charge.					
51.1	**Hindware Orissa Pan cat no 20004 Starwhite. Size-53x41 cm**	3.00	Each	2591.40	Rupees Two Thousand Five Hundred NinetyOne Paise Fourty Only	7774.20
52	Supplying all materials, labour, T&P and fixing the following vitreous china Wash Down Water Closet (Wall hung European type W.C. pan) of Hindware/Jaquar/ Parryware with integral 'p' or 's' trap to the floor with wooden plug and chromium plated pedestal screws including jointing the trap with soil pipe in cement mortar (1:1) fixing plastic seat and cover for wash down water closet with chromium plated brass hinges and rubber buffers including polishing etc all complete as per specification and direction of the Engineer-In-Charge.					
52.1	Wall hung EWC with 'p' / S trap plain **FLS-WHT-5351/5201 (S-10) Starwhite type, size-370x650x765 mm,**	2.00	Each	10858.00	Rupees Ten Thousand Eight Hundred FiftyEight Only	21716.00
53	Supplying all materials, labour T&P and fixing wash basins of Hindware/Jaquar/Parryware with hole for pillar taps with cast iron or M.S.brackets painted white including cutting holes in walls and making good the damages with supply of wooden plugs, screws and cement etc, fixing pedestal for wash basin recessed at the back for the reception of pipes and fittings, fixing PVC waste pipe of 32mm nominal diameter for wash basin including brass check nut complete, fixing pillar taps capstan head screw down high pressure lettered 'Hot' and 'Cold' with long screws, shanks and back nuts of 15mm dia nominal bore, fixing 15mm dia PVC inlet connection pipe and making connection with pillar cocks and supply mains for wash basin, fixing 32mm dia CP brass waste, etc all complete as per specification and direction of the Engineer-In-Charge.					
53.1	**wall hung Wash Basin Size - 550mmx400x830mm**	5.00	Each	2325.40	Rupees Two Thousand Three Hundred TwentyFive Paise Fourly Only	11627.00
54	Supplying all materials, labour, T&P and fixing mirror of superior glass mounted on 6mm thick A.C.sheet or plywood sheet and fixed to wooden plugs with CP screws and washers complete as per specification and direction of the Engineer-in-charge.					
54.1	450mmx600mm size B.E.mirror	2.00	Sqm	717.20	Rupees Seven Hundred Seventeen Paise Twenty Only	1434.40
55	Supplying all materials,labour, T&P and fixing standard sized CP towel rail 24" of Hindware/Jaquar/Parryware complete with CP brass brackets fixed to wooden plugs with CP screws as per specification and direction of the Engineer-In-Charge.					
55.1	25mmx600mm long CP towel rail	2.00	Each	1487.10	Rupees One Thousand Four Hundred EightySeven Paise Ten Only	2974.20
56	**Supplying all materials, labour, T&P and fixing standard sized Chromium Plated brass towel ring complete with Chromium Plated brass brackets fixed to wooden plugs with Chromium Plated brass screws as per specification and direction of the Engineer in charge.**	2.00	Each	1236.12	Rupees One Thousand Two Hundred ThirtySix Paise Twelve Only	2472.24

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Supplying all materials, labour, T&P and fixing standard sized Chromium Plated soap case of Hindware/ Jaquar/ Parryware complete with Chromium Plated brass brackets fixed to wooden plugs with Chromium Plated brass screws as per specification and direction of the Engineer in charge.					
CP Soap Holder	3.00	Each	280.50	Rupees Two Hundred Eighty Paise Fifty Only	841.50
Providing and fixing Salem Stainless steel A ISI (18/8) kitchen sink as per IS : 13983 with C.I. Brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required. a) Kitchen Sink with drain board Nirali make size 510 X 1040 mm bowl depth 178 mm.	2.00	Each	3500.00	Rupees Three Thousand Five Hundred Only	7000.00
Supplying all materials, labour, T&P and fixing 100 mm dia wall mounted over head shower & Shower arm Hindware/Jaquar/Parryware including cutting the wall and making good the damages, including cost of all materials complete as per PH specification and direction of Engineer-in-charge. 100 mm dia CP overhead shower with Arm.	3.00	Each	921.20	Rupees Nine Hundred TwentyOne Paise Twenty Only	2763.60
Supplying all materials, labour, T&P and fixing standard sized 15mm dia Single lever Concealed Deusch mixer with provision for connection to overhead shower only of Hindware/Jaquar/Parryware of approved make etc complete including cutting the wall and making good the damages, including cost of all materials complete as per PH specification complete as per direction of Er-in-charge. Concealed stop cock Jaquar FLR-5227.	3.00	Each	2575.70	Rupees Two Thousand Five Hundred SeventyFive Paise Seventy Only	7727.10
1 Fixing Rotational moulded Poly Propelene double layer cylindrical vertical water storage tanks confirming to IS 12701-1996 including cutting holes through the tank and fixing mild steel tubes and fitting and providing extra sockets and jam nuts, fixing ball valve etc,including hoisting upto a height of 5 mtr above ground level and placing the tank to the required postion etc all complete as per specification and direction of the Er-in-charge.					
.1 2000 ltr capacity Double layer cylindrical vertical water storage tanks	1.00	Each	19823.53	Rupees Nineteen Thousand Eight Hundred TwentyThree Paise FiftyThree Only	19823.53
2 Supplying all materials, labour, T & P and constructing Gully trap chamber of the following inside size with 8 cm thick R.C.C. precast cover slab in CC (1:2:4) mix using 12mm size h.g. chips, foundation concrete (1:4:8) using 40mm size h.g. metal on bed aound trap , Fly Ash brickwork in CM (1:6) in P&F and inside 12mm thick cement plastering (1:3) finished with a floating coat of neat cement including fixing 100mm x100mm size gully trap, 150mm x150mm C.I gratig etc. all complete as per approved drawing, specification and direction of Engineer-in-charge.					
.1 250mmx250mm with RCC cover	1.00	Each	1162.40	Rupees One Thousand One Hundred SixtyTwo Paise Fourty Only	1162.40
3 Supplying all materials, labour, T&P and laying in trenches (to level or slope) unplasticized PVC pipes conforming to IS 4985/2000 of the following outside dia for class-3(0.6mpa) including jointing with supply of approved solvent cement by non-heat application method/as per manufacturer's specification, providing and laying in trench cement concrete (1:4:8) with 40mm size hard granite metal in the Type C-1 standard bedding surrounding or encasing including concrete for bedding and curing etc all complete as per PH specification and direction of the Engineer-in-charge.					
3.1 110mm dia u-pvc pipe	10.00	Mtr	563.10	Rupees Five Hundred SixtyThree Paise Ten Only	5631.00

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63.2	160mm dia u-pvc pipe	10.00	Mtr	1124.30	Rupees One Thousand One Hundred TwentyFour Paise Thirty Only	11243.0
64	Supplying all materials, labour, T&P and constructing soakway pit of the following size with precast RCC rings joined loose, gravel backing in the rear of well steining, precast RCC cover slab in cement concrete (1:2:4) using 12mm size hg chips fitted with iron lifting handles including cutting hole in the rings for inlet pipe,earthwork in open well excavation in all kinds of soil and refilling of cavity around the pit & painting the iron works, watering, curing, conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per approved specification and direction of the Engineer-In-Charge					
64.1	RCC rings soakway pit 1.2m dia x 2.0m deep	1.00	Each	17642.30	Rupees Seventeen Thousand Six Hundred FourtyTwo Paise Thirty Only	17642.30
65	**Sinking of 150mmx125mm dia Tube well by fast drilling Sofasticated Rig.**					
65.1	Labour for drilling of perfactly vertical bore holes as specified dia.For a specified depth rock with down the hole hammer drilling rig combination drilling rig as required to soil,the soil condition as per direction of E.I.C including supply of rigs with all accessories,T&P consumable etc for lowering 150mm dia PVC pipes for casing fitted with sockets,washers and without well screen as per the necessity for the soft, medium and hard formation(PCV/GI)casing pipes for the over borden is to be provided by the contractor including lowering and drawing after complete of tube well.**Tube well(1No).**					
65.1.1	Drilling of 150mm dia. Bore 0.00mtr to 30.00mtr	30.00	Mtr	611.70	Rupees Six Hundred Eleven Paise Seventy Only	18351.00
65.1.2	Drilling of 125mm dia. Bore 30.00mtr to 75.00mtr	30.00	Mtr	611.70	Rupees Six Hundred Eleven Paise Seventy Only	18351.00
65.2	Lowering the following G.I/PVC pipe with or without soltted pipes as per necessity from ground level upto 30.00mtr depth and fitted and fixed in perfecty vertical position including cutting and threading pipes and soltted pipes and supplying and fixing of all jointing materials,T&P etc the top of the casing pipe threaded including piping tube well to prevent entry of foreign materials from above(PVC/G.I) supplied by the contractor (including cost of pipe)					
65.2.1	Lowering of 150mm dia PVC pipes:00.00 mtr to 29.40mtr	15.00	Mtr	92.20	Rupees NinetyTwo Paise Twenty Only	1383.00
65.3	Cost of 150mm dia PVC pipes:-00.00mtr to 30.00mtr	15.00	Mtr	1469.27	Rupees One Thousand Four Hundred SixtyNine Paise TwentySeven Only	22039.05
65.4	Cleaning & developing the tubewell with their own compressor contineously worked till clean and adiquate discharge is obtained from the tubewell including supply of & use of all necessary equipments and labour as per the direction of E.I.C.	1.00	Each	3297.00	Rupees Three Thousand Two Hundred NinetySeven Only	3297.00
66	**1.00 H.P.Single Phase Submersible Pump Set**					
66.1	Supplying of ISI Mark 1.00 H.PSingle Phase Verical Submersible Pump Set with discharge of 900-1000 ltr./ hour and a head of 50-60mtr of reputed make like KSB/Texmo & equivalent including all cost, conveyance and taxes etc all complete as per direction of E-I-C.	1.00	Each	15849.15	Rupees Fifteen Thousand Eight Hundred FourtyNine Paise Fifteen Only	15849.15
66.2	Supplying all labour,T&P and fitting and fixing of 1.00 HP Single phase vetrical Submersible Pump Set with commissioning and testing etc.all complete as per direction of E.I.C.	1.00	Each	1209.50	Rupees One Thousand Two Hundred Nine Paise Fifty Only	1209.50

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Supplying fitting and fixing of ISI mark DOL Starter of reputed make like BCH or equivalent for 1.00 HP Single phase Submersible Pump including all cost, conveyance of all taxes etc all complete as per direction of the E.I.C.	1.00	Each	2809.32	Rupees Two Thousand Eight Hundred Nine Paise ThirtyTwo Only	2809.32
Supplying fitting and fixing of three core flat cable (1.5mm^2)of ISI make of reputed company like BCH/ Finolex or Equivalent and connecting the pump and starter including all cost,conveyance and taxes etc all complete as per direction of the E.I.C.	50.00	Mtr	58.79	Rupees FiftyEight Paise SeventyNine Only	2939.50
Supplying fitting and fixing of plastic rope MS Well cover, MS Clamp,stainless steel short piece,bend & socket including all cost ,taxes etc all complete as perdirection of the E.I.C.	1.00	Each	1312.00	Rupees One Thousand Three Hundred Twelve Only	1312.00
Supplying fitting and fixing of HDPE Pipes & pipe fittings with making connection to pump set including all cost conveyance and taxes etc all complete as per direction of the E.I.C.	50.00	Mtr	95.86	Rupees NinetyFive Paise EightySix Only	4793.00
Supply of all materials,labour,T&P and fitting & fixing of 5 K.W Automatic voltage stabilizer having range from 50 Volt to 220 Volt suitable to run 1 H.P Submersible pump set including eléctrical connection from the existing mains&with the control panels of the pump set etc.all complete as per specification&direction of E.I.C.	1.00	Each	9375.00	Rupees Nine Thousand Three Hundred SeventyFive Only	9375.00
Supplying and fitting and fixing of deep well India Mark-II hand pump with cast iron cylinder,12mm to 16mm dia Connecting rod made with bright bar of 12mm dia mtr and 32mm dia G.I.Pipe 3.0mtr long with required depth with end of socket of approved rate as per the direction of E.I.C	1.00	Each	15387.00	Rupees Fifteen Thousand Three Hundred EightySeven Only	15387.00
Earthwork in excavation in all types of soil for site leveling, foundation, pits, trenches and other civil works up to and including 1.5 metre lift and stacking the soil upto a lead of 100 metre and including dewatering, removing slush, shoring and strutting (as required), complete as per specification and as directed by the Engineer-In-Charge.	4.50	Cum	206.80	Rupees Two Hundred Six Paise Eighty Only	930.60
Filling at all depth with available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 15 cm in depth : consolidating each deposited layer by ramming and watering complete (lead upto 100m) as directed by the Engineer-In-charge.	3.02	Cum	57.40	Rupees FiftySeven Paise Fourty Only	173.35
Supplying of filling sand in foundation and over areas including watering, ramming, consolidating and dressing, labours, tools, taxes etc. all complete as per the specification and direction of E.I.C.	0.30	Cum	333.60	Rupees Three Hundred ThirtyThree Paise Sixty Only	100.08
Providing and laying plain cement concrete 1:3:6 (1 cement:3 sand: 6 stone agregate 40mm nominal size) as levelling course in foundation and plinth etc. including tempering, curring, shuttering etc. complete all depth and height.	0.30	Cum	4414.10	Rupees Four Thousand Four Hundred Fourteen Paise Ten Only	1324.23
Supplying all materials, labour, T&P and providing cement concrete (1:2:4) with 12m size hard broken granite chips including watering, curing, conveyance of all materials to worksite, payment of royalty, taxes etc all complete as per specification and direction of the Engineer in charge.	0.66	Cum	5813.90	Rupees Five Thousand Eight Hundred Thirteen Paise Ninety Only	3837.17

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73	Providing, lifting, hoisting and laying Reinforced cement concrete of M-250 grade as per approved designs and drawings having a minimum compressive strength (in work test) 250 Kg. / Square cm. in 15 cm. cubes at 28 days after mixing and test conducted in accordance with I.S. 516 using 12 mm. to 20 mm. size black hard crushed broken granite stone chips and screened and washed sharp sand for mortar of approved quality from approved quarry, washed and cleaned (20mm. size chips not to exceeds 25 %) to be mixed in concrete mixture with Portland slag cement (PSC) including hoisting, lowering, laying and compaction concrete by using vibrators, watering and curing for 28 days, centering and shuttering then after dismantling and removing debris from the work site and finishing the exposed surface smooth providing grooves or beads wherever necessary including cost, conveyance, loading, unloading, royalties and taxes of all materials and cost of all labours, sundries, T & P required of the work etc. complete in all respect as directed by the Engineer-in-Charge. But excluding cost and conveyance of M.S. rods or Tor steel and binding wires and labour charges for straightening, cutting, bending etc. of M.S. rods or tor steel tying the grills and placing in proper position.					
73.1	Base	0.30	Cum	4701.70	Rupees Four Thousand Seven Hundred One Paise Seventy Only	1410.51
73.2	Slab	0.26	Cum	7247.30	Rupees Seven Thousand Two Hundred FourtySeven Paise Thirty Only	1884.30
74	Supplying, straightening, cutting, bending, placing in position and binding reinforcement steel work in RCC/reinforced brick works as per drawing and specification including preparation of respective bar bending schedule and binding (Binding wire to be used as per the IS code) etc. all complete as per direction of Engineer-In-Charge.Cold Twisted bars, Thermo-Mechanically-treated bars.	0.56	Qntl	9364.00	Rupees Nine Thousand Three Hundred SixtyFour Only	5243.84
75	First class Fly Ash Brick masonry using F.A. bricks of size 25 cm. x 12 cm. x 8 cm. having crushing strength not less than 75 kg. Per. Sqr. Cm. in cement mortar of mix(1:6) with ordinary Portland slag cement(PSC) and screened & washed sand for mortar after immersing the bricks for 6 (Six) hours in water before use in Foundation & Plinth including splays cutting, circular moulding, corbelling, chamfering and similar such type of works, watering and curing etc. including cost, conveyance, loading, unloading, royalties and taxes of all materials, cost of all labour, scaffolding, sundries, T&P required for the works etc. complete in all respect as directed by the Engineer-in-Charge.	2.01	Cum	4232.80	Rupees Four Thousand Two Hundred ThirtyTwo Paise Eighty Only	8507.93
76	12mm cement plaster on internal smooth side of RCC/brick surfaces with cement mortar of mix 1:4 (1 cement : 4 fine sand) including neat cement punning & necessary scaffolding, curing etc. all complete at all floors and all heights.	14.40	Sqm	145.40	Rupees One Hundred FourtyFive Paise Fourty Only	2093.76
77	Providing 16mm. thick cement plaster in all floors at all height with cement mortar of mix (1:6) with OPC 53 grade cement finished smooth to inside smooth surface of brick masonry walls after racking out the joints including watering and curing, rounding of corners etc. complete with cost, coveyance, loading and unloading, royalties and taxes of all materials and cost of all labours, sundries, T&P and scaffolding required for the work etc. complete in all respect as desired by the Engineer in charge.	4.68	Sqm	208.90	Rupees Two Hundred Eight Paise Ninety Only	977.65
	Part-III ELECTRICAL WORK					

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	Concealed wiring to light point / fan point / exhaust fan point / call bell point with 1.5 sq.mm FR PVC insulated single core multistrand copper conductor.					
	Group-A	20.00	Each	420.00	Rupees Four Hundred Twenty Only	8400.00
	Group-B	17.00	Each	648.00	Rupees Six Hundred FourtyEight Only	11016.00
	Group-C	10.00	Each	934.00	Rupees Nine Hundred ThirtyFour Only	9340.00
	S/F of 5/6A Switch & 3Pin 5/6A Socket On Existing Board.	12.00	Each	86.00	Rupees EightySix Only	1032.00
	Point wiring for 5 / 6 amp socket outlet with 2 x 1.5 sq.mm FR PVC insulated single core multistrand copper	3.00	Each	560.00	Rupees Five Hundred Sixty Only	1680.00
	Circuit Submain wiring in PVC Conduit.					
1	2 x 1.5sq.mm +1 x 1.5 sq.mm	70.00	Mtr	126.00	Rupees One Hundred TwentySix Only	8820.00
.2	2 x 2.5 sq.mm + 1 x 1.5 sq.mm	230.00	Mtr	140.00	Rupees One Hundred Fourty Only	32200.00
.3	2 x 4.0 sq.mm + 1 x 1.5 sq.mm	90.00	Mtr	158.00	Rupees One Hundred FiftyEight Only	14220.00
1.4	2X6.0 sq.mm + 1x1.5 sq.mm	30.00	Mtr	189.00	Rupees One Hundred EightyNine Only	5670.00
82	S/F of Power plug point	6.00	Each	275.00	Rupees Two Hundred SeventyFive Only	1650.00
83	S/F of BK angle Holder ISI Mark.	20.00	Each	59.00	Rupees FiftyNine Only	1180.00
84	S/F of 48" A.C Ceiling Fan. (Usha/Crompton/Polycab/Bajaj)	11.00	Each	2191.00	Rupees Two Thousand One Hundred NinetyOne	24101.00
85	S/F of Electronics step Fan Regulator.	11.00	Each	275.00	Rupees Two Hundred SeventyFive Only	3025.00
86	S/F of 9" Exhust fan (Usha/Bajaj/Crompton)	7.00	Each	1650.00	Rupees One Thousand Six Hundred Fifty Only	11550.00
87	S/F of Computer Board. 3 nos S.S with wiring	4.00	Each	850.00	Rupees Eight Hundred Fifty Only	3400.00
88	S/F of 18-20 W LED Tube light fittings. (Havells/Crompton/Orient)	15.00	Each	660.00	Rupees Six Hundred Sixty Only	9900.00
89	S/F of 12 Watt LED Bulb (Polycab/IB/Havells)	20.00	Each	180.00	Rupees One Hundred Eighty Only	3600.00
90	S/F of BH fittings with 12 Watt LED bulb	3.00	Each	950.00	Rupees Nine Hundred Fifty Only	2850.00
91	S/F of 45 Watt LED Street light fitting on roof parapit(Havells/Crompton/Bajaj)	2.00	Each	4500.00	Rupees Four Thousand Five Hundred Only	9000.00
92	S/F of SP MCB DB 6 way single door.	3.00	Each	1150.00	Rupees One Thousand One Hundred Fifty Only	3450.00
93	S/F of "B': Series SP MCB.(Havells/Legrand/L&T/HPL)	18.00	Each	157.00	Rupees One Hundred FiftySeven Only	2826.00
94	S/F of 1x1.5sqmm M.S Cu wire for inverter Wiring.	130.00	Mtr	45.00	Rupees FourtyFive Only	5850.00
95	S/F of standard Earthing with charcoal and salt.	1.00	Each	2453.00	Rupees Two Thousand Four Hundred FiftyThree	2453.00
96	Supply & laying of 8 SWG Copper wire.	44.00	Mtr	85.00	Rupees EightyFive Only	3740.00
97	S/F of 63 Amp ICDP Main switch(Havells/Anchor/Orient)	2.00	Each	2650.00	Rupees Two Thousand Six Hundred Fifty Only	5300.00
98	S/F of 32Amp ICDP Main switch(Havells/Anchor/Orient)	1.00	Each	2145.00	Rupees Two Thousand One Hundred FourtyFive Only	2145.00
99	S/F of 6 kg ABC type fire extinguisher	1.00	Nos	3500.00	Rupees Three Thousand Five Hundred Only	3500.00
100	S/F OF 10 mm2 Service wair with g.i.wair	80.00	Mtr	65.00	Rupees SixtyFive Only	5200.00

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101	Supply and installation of inverter set with 1150 watt UPS,150 Ah Tubular battery with trolly. (Luminus/Exide/Mictotek)	1.00	Set	38000.00	Rupees ThirtyEight Thousand Only	38000.00
102	Provision for External Electrification(L.S.)	1.00	Each	10000.00	Rupees Ten Thousand Only	10000.00
TOTAL ESTIMATED COST						3839739.74
OR SAY						3839740.00
Total 102 (One hundred two) iteam only					Rupees ThirtyEight Lakh ThirtyNine Thousand Seven Hundred Fourty Only	

I M/S _____, _____ Class Contractor hereby quoted my % (Percentage) rates at _____% (Percentage) in figure and _____% (Percentage) in word (excess / less/ equal) to the amount put to tender Rs. /- ( ) only.

Note:

1. The contractor should not write anything except quoting of percentages and in case anything else regarding tender rate mentioned, the tender is liable to rejection.
2. Strike out which is not applicable.
3. Percentage should be quoted up to 2 (two) digit after the decimal point.

No of Corrections:-
No of over writing:-
No of Pages:-

APPROVED for 88 (eighty eight pages only

Block Development Officer,
Patnagarh

Contractor

Block Development Officer, Patnagarh