YWCA OF DELHI

Notice Inviting Tender

PROPOSED CIVIL AND STRUCTURE REPAIR WORK FOR YWCA OF DELHI, ASHOKA ROAD, NEW DELHI-110001.

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Notice Inviting Tender

Notice Inviting Tender for selection of civil repair work
Date: 24th September 2018

- Sealed items rate tenders for the under mentioned work(s) are invited on behalf of YWCA of Delhi from the contractors of repute who fulfill the conditions contained in the Notice Inviting Tender.
- The sealed tenders duly accompanied with earnest money shall be received by 10th September 2018 upto 4 pm.
- Name of the work**: Structure Repair of Internal & External/Elevation and Renovation of Toilets at Ashoka Road, New Delhi.**
- **Tender Value**: -Rs. 50,00,000/- (Fifty lakh only)
- **Earnest Money Deposit**: -Rs. 5% of the Tender Value
- **Project completion time**: - 90 days.

Disclaimer:

Section 1:- Notice Inviting Tender

1.1 Sealed item rate tenders for the under mentioned work are invited from the eligible contractors of repute who fulfill the following conditions.

1.2 The tender is to be submitted up to

1.3 The Tender duly filled with the requisites and the item rates should be submitted 4 pm. on 10th August 2018. in the office of General Secretary YWCA of Delhi, 01, Ashoka Road, New Delhi- 110001.

1.4 Financial bid shall remain valid for a period of 30 days from the date of IT's opening.

1.5 The contractor whose tender is accepted shall be required to furnish by way of Performance Guarantee and Security deposit for due fulfillment of his contract in the manner as described here under:-

1.5a) Performance Guarantee @ 5% of the contract value for the proper performance of the contract agreement within fifteen days of issue of letter of intent. This period can be further extended by the General Secretary, YWCA of Delhi, upto a maximum period of seven days on written request of the contractor. This guarantee shall be in the form of Fixed Deposit Receipt or Guarantee Bond of any reputed Bank in accordance with the form annexed hereto.

1.5 b) Security Deposit/Retention Money @5% of the tendered value of the work by way of deduction from the running bills of the contractor .

2. INSTRUCTIONS TO BIDDERS

2.1General Terms of Bidding

2.1.1 All Bidders are required to submit their Proposal in accordance with the terms set forth in this Tender.

2.1.2 Notwithstanding anything to the contrary contained in this Tender, the detailed terms specified in the draft Agreement shall have overriding effect.

2.1.3 Provided that any conditions or obligations imposed on the Bidder hereunder shall continue to have effect in addition to its obligations under that Agreement.

2.1.4 The Authority reserves the right to invite fresh bids with or without amendment of the Tender at any stage or to terminate at any time the entire bidding/selection process without any liability or any obligation to any of the Bidders and without assigning any reason whatsoever.

2.2 Scope of Work:

- **Structure Repair Work for Internal & External/Elevation.**
- **Renovation of toilets.**

2.3 Eligibility to bid Minimum QualificationsCriteria:

2.3.1 The contractors who have successfully completed at least two similar natures of works during last 3 years ending 30th June'2018.

2.3.2 A bidder shall not have a conflict of interest (the "Conflict of Interest") that affects the bidding process. Any bidder found to have a Conflict of Interest shall be disqualified. A bidder shall be deemed to have a Conflict of Interest affecting the bidding process, if :

i.) A constituent of such Bidder is also a constituent of another applicant/bidder; or

ii.)such Bidder, or any Associate thereof has a relationship with another Bidder, or any Associate thereof, directly or through common third party/ parties, that puts either or both of them in a position to have access to each other's information about, or to influence the Proposal of either or each other; or

(iii) such Bidder, or any Associate thereof has participated as a consultant to the Authority in the preparation of any documents, design or technical specifications of the Project.

(iv) A Bidder shall be liable for disqualification and forfeiture of Bid Security if any legal, financial or technical adviser of the Authority in relation to the Project is engaged by the Bidder, its Member or any Associate thereof, as the case may be, in any manner for matters related to or incidental to the Project.

2.3.4 Average annual financial turnover on the execution of similar works should not be less than Rs. 1 crore during the last 3 years ending this financial year . (Duly audited by Charted Accountant).

2.3.5 Should have a valid certificate of Registration under Goods and Services Tax. The Tax Clearance Certificate issued by the said cell is required to be submitted by the contractor along with the tender.

2.3.6 To be eligible for bidding under this Tender, a bidder shall fulfill following conditions of eligibility and submit the proofs as specified for each condition of eligibility:

Eligibility Condition	**Supporting documents to be submitted by the bidder**
Legal Entity and Statutory Registrations a. Should be registered legal entity such as: i. Company registered under Companies Act 1956/2013 ii. Partnership firm registered under Partnership Act. iii. Should have a valid certificate of Registration under GST iv. PF & ESI registration certificate	a. Company or Partnership firm registration certificate b. GST c. PF & ESI registration as per labour law
<u>Turnover and Net Worth</u> Turnover and Net worth requirement should be as under - Turnover - Net worth	**a.** Audited Balance Sheet for previous three financial years 2017-18, 2016-17,2015-16 along with a turnover certificate by CA
<u>Technical Capacity</u> The bidder should have been working in the field for the past 3years.	**a.** Self-certification from the bidder signed by Authorized Bid Signatory. **b.** Project Details to be provided as per Format – 11. **c.** The purchase order/contract/agreements issued by the Client **d.** Project Completion certificate from the client
Non – Blacklist The Bidder should not have been barred or blacklisted by the Government of India, or by any State Governments in India for breach of Contractual Conditions as on bid submission date and should not be involved in any pending /ongoing CBI Litigations. Also, the bidder should not have been convicted/charge-sheeted in any criminal case in respect to the nature of work involved in the contract with any of the State Government or Union Government. The bid may be rejected on submission of false affidavit as per Clause _____	An Affidavit as per FORMAT ….as part of the Qualification Criteria

2.3.7 The Bidders shall enclose itsProposal, complete with its Formats, all the relevant documents to support information provided in Proposal.

2.3.8 The Bidder should submit a Power of Attorney as per the format at FORMAT, authorizing the signatory of the Proposal to commit the Bidder.

2.3.9 The Bidder should provide "No Conviction" certificate as per the format.

2.4. Number of Bids and costs thereof:

2.4.1 No Bidder shall submit more than one Bid for the Project.

2.4.2 The Bidder shall be responsible for all of the costs associated with the preparation of their Bids and their participation in the Bid process. The Authority will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the bidding process.

2.5. Site Visit & Verification of information:

2.5.1. The Bidders are encouraged tosubmit their respectivebids after visiting YWCA of Delhi and ascertaining for themselves matters considered relevant by them.

2.5.2. The Bidder is expected to examine carefully the contents of the Tender. Failure of the proposal to comply with the requirements of Tender will be at the Bidders' own risk and make the bid non-responsive.

2.6. Acknowledgement by Bidder

It shall be deemed that by submitting the bid, the Bidder has:

2.6.1 Made a complete and careful examination of the Tender;

2.6.2 Received all relevant information requested from the Authority;

2.6.3 Satisfied itself about all matters, things and information.

2.6.4 Acknowledged and agreed that inadequacy, lack of completeness or incorrectness of rovided in the Tender or ignorance of any of the matters hereinabove shall not be a basis for any claim for compensation, damages, extension of time for performance of its obligations, loss of profits etc. from the Authority, or a ground for termination of the Agreement by the Operator;

2.6.5. Acknowledged that it does not have a Conflict of Interest; and

2.6.6. Agreed to be bound by the undertakings provided by it under and in terms hereof

2.6.7.The Authority shall not be liable for any omission, mistake or error in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to the TENDER or the bidding process, including any error or mistake therein or in any information or data given by the Authority.

2.6.8. Agreedto give the Right to the authority to accept or reject any or all bids

2.7Contents of the Tender

2.7.1. Data Sheet, Disclaimer, Request for Proposal, Instructions to Bidders, Evaluation Process, Fraud and Corrupt Practices, Miscellaneous Formats for Proposal Draft Agreement along with Schedules

2.7.2 Preparation and Submission of Bids

- The Proposal in response to the Tender should be in English and is to be submitted in two (2) parts IN SEALED COVERS:
- Envelope A- PART 1: QualificationBid

- Envelope B- PART 2: Financial Bid
- Both Envelope A and Envelope B will be sealed and Put in another Envelope mentioning the Tender Details which will be sealed

2.7.3 : Qualification Bid (Part 1)

- The Bidder is expected to provide details of its registration and furnish documents to support its claim.
- Details of all information related to past experience and background should describe the nature of work, name and address of client, date of award of assignment, size of the project etc.

- The Bidder should submit details of financial capability for the last three (3) Financial years (i.e FY (2014-15, 2015-16, 2016-17) The Qualification bid should be accompanied with the Audited Annual Reports including all financial statements of the Bidder.

- The checklist for information to be submitted provided below:
  INFORMATION TO BE PROVIDED
  1. Covering letter for proposal submission
  2. Power of attorney for signing of proposal
  3. Affidavit
  4. Anti-collusion certificate
  5. Project undertaking
  6. Details of project experience against eligibility criteria
  7. Financial capability of the bidder
  8. Financial Bid-Not required to be submitted with Qualification Bid.
  9. Testimonial

2.7.4.: Financial Bid: (Part 2)

Preparation and Submission of Proposals

1. All Proposals submitted must be duly signed and stamped by the Authorized representative of the Bidder.
2. The Bidder should submit a Power of Attorney, authorizing the signatory of the Proposal to execute the Proposal.
3. The Bidder has to submit a signed copy of the Tender.
4. An Affidavit should be submitted along with the Proposal.
5. The Proposal shall be accompanied with an Anti-Collusion Certificate on the letter head of the Bidder .
6. The Proposal shall also be accompanied with a Project Undertaking on the letter head of the entity .
7. The Proposal shall be submitted by the Bidder in the adequate, complete and correct form. If the bidder dals to do so in that case , the Authority shall not be responsible for any loss or damage whatsoever that may be incurred by the concerned Bidder. However, the Authority may, in its sole discretion, require the Bidder to rectify the discrepancies in the bid submitted by the Bidder pursuant to this Tender

2.8 Bid Security:

The contractor whose tender is accepted shall be required to furnish by way of Performance Guarantee and Security deposit for due fulfillment of his contract in the manner as described here under:-

a) Performance Guarantee @ 5% of the contract value for the proper performance of the contract agreement within fifteen days of issue of letter of intent. This period can be further extended by the General Secretary, YWCA of Delhi, upto a maximum period of seven days on written request of the contractor. This guarantee shall be in the form of Fixed Deposit Receipt or Guarantee Bond of any reputed Bank in accordance with the form annexed hereto.

b) Security Deposit/Retention Money @5% of the tendered value of the work by way of deduction from the running bills of the contractor

2.9. Sealing and Signing of Proposal:

- The Bidder shall submit Qualification Bid (sealed separately) mark it as "PART 1: Qualification Bid- Tender for Selection of Civil and Structural Repair work.
- The envelope shall contain all details asked in the tender document along with supporting documents.
- The Bidder shall submit and mark as Financial Bid (sealed separately) and mark as "Part 2: Financial Bid – Financial Bid for Civil and Structure repair work"
- The Bidder shall submit the Earnest MoneyDeposit in a sealed envelope and mark the envelope as "Earnest Money Deposit ".
- The Sealed envelopes- Envelope-A and Envelope-B and EMD envelop shall be placed in an outer envelope, which shall be sealed and marked as "Tender for Selection of Civil and Repair Work".
- Envelope-A –Will contain the following two sealed envelopes.
- The Proposal shall be signed and each page of the proposal shall be initiated by the person authorized to sign on behalf of the bidder.

2.10 Proposal due date and Time:

Proposal should be submitted positively by 10th August 4 pm.

The Authority may at its sole discretion, extend the Proposal Due Date by issuing an addendum.

2.11 Late Proposals

a) Proposals received by the Authority after the specified time on the Proposal Due Date shall not be eligible for consideration and shall be returned unopened.

b) The Bidder shall submit the final proposal by the Proposal Due Date and Time. No Proposal shall be modified, substituted or withdrawn by the applicant/bidder after the submission of the proposal.

2.12 Amendment of Tender:

The Authority may modify the RFQ Cum RFP by issuing an Addendum before the Proposal Due Date

2.13. Right to Accept or Reject Proposal:

a) The Authority reserves the right to accept or reject any or all of the Proposals without assigning any reason and to take any measure as the Authority may deem fit, including annulment of the bidding process, at any time prior to execution of the Agreement, without liability or any obligation for such acceptance, rejection or annulment.

b) The Authority reserves the right to reject any Proposal if: a. At any time, a material misrepresentation is made or uncovered by/from a Bidder.

c) The Bidder does not respond promptly and thoroughly to requests for supplemental information required for the evaluation of the Proposal.

3. SPECIAL CONDITIONS OF CONTRACT

These special conditions of contract shall be read in along with the general conditions of contract, schedule of quantities, technical specification, Drawings and other documents relating to the work and shall have preference over laid down general conditions.

1. Civil work shall be carried out in full compliance with specifications given in the BOQ.
2. Notwithstanding separate sections of this documents, every part of each section be deemed to be supplementary and complement to every other part and shall be read with into the contract, so far as it may be practicable to do so.
3. Contract shall mobilize and employ sufficient resources to achieve the detailed schedule within the time frame work of the accept methods of working and safety. The contractor shall provide everything necessary for the carrying out of the work, including tools, plants and other material.
4. No additional payment will be made to the contractor for any multiple shift work or other incentive method contemplated by him in his work schedule even though the time schedule is approved by the Architect/Engineer-in-charge.
5. The work shall be executed as per the program drawn or approved by the Architect and it shall be so arrange as to have coordinate with any other agency employed at site. No claim for idle labour shall be entertained nor shall any claim on account of the delay in the completion of the building work to be tenable extension of the time secured by the contractor as stated elsewhere.
6. The contractor shall provide all equipment, instrument, labour and such other assistance required by the Engineer-in-charge for measurement of the work, material etc.
7. No interest shall be payable on security deposit etc. or any delayed payments of any kind, at any stage of bills.
8. The applicant is advised to visit the site of work, at his own cost, and examine it and its surrounding to acquaint himself with it and collect all information that he may considers necessary for proper assessment of the prospective assignment.
9. The applicant's performance for each work completed in the last 3 yrs. And in hand should be certified by the project-in-charge.

4. SCOPE, EXTENT, INTENT ETC.:

4.1 Scope:

The general character and the scope of the Work shall be as illustrated and defined in the Drawings, Specifications, Schedule of Rates and other Contract Documents.

4.2 Extent:

The Contractor shall carry out and complete the Work under the Contract in every respect, and his work shall include the supply of all labour, equipment, materials, plant and machinery, tools, transportation, form work, scaffolding and everything else necessary for the proper execution and completion of the Work in accordance with the Contract Documents and to the directions and satisfaction of the Project Engineer, Project Engineer and Owner. The Contractor shall be fully responsible and liable for everything and all matters in connection with or arising out of or being a result or consequence of his carrying out or omitting to carry out any part of the Work. Where any parts of the Work may be executed by Sub-Contractors, such responsibility and liability of the Contractor shall cover and extend to the work of all such Sub-Contractors.

4.3 Instructions Of Project Engineer:

The Contractor shall forthwith comply with and duly execute the work comprised in such Instructions of Site-in-charge / Consultant, provided always that verbal instructions, directions and explanations given to the Contractor or his works representative by the Project Engineer or Project Engineer shall, if involving a variation, will be got confirmed in writing to the contractor.

4.4 Approval of Site-in-charge / Consultant:

Approval of the Project Engineer shall always mean approval in writing. The onus shall be on the Contractor to obtain all the necessary approvals in writing. Such approvals, however, shall not relieve the Contractor of any of his responsibilities under the Contract.

4.5 Increases/Decreases to scope of Work:

The Client / Consultant reserves the right to increase or decrease the scope of the Work on any or all items or to change the nature of the Work involved in any or all items or to completely delete any items of the Work under the Contract. However, such variation in scope of work shall be limited to $\pm$10 % of the contract value. The Contractor shall not be entitled to claim for loss of anticipated profits, for mobilization of additional resources, or for any other such reason on account of these change orders.

4.6 Items of work for completion:

The Contractor is bound to carry out any items of work necessary for the completion of the Work even though such items of work may not be expressly described in the Contract Documents / Drawings.

4.7 Delay & Extension:

If the work is delayed beyond the stipulate time for reason given below, then the contractor shall immediately give a written notice thereof to the employer, but the contractor shall nevertheless consistently use his endeavor to prevent delay and shall do all that may be reasonable or required to the satisfaction of the employer to proceed with the work. The employer based in the recommendations of Architect, shall grant and reasonable extension of time for the completion of work in the followings cases:

a) By force; as describe hereunder:-

The contractor shall not be held in default in performance of his obligation if such performance is prevent or delayed due to any unforeseen causes beyond his control bodies, Civil commotion, flood, earthquake or any other natural calamities which cannot be foreseen.

However, it shall be incumbent on the contractor to inform the Employer/ Architect and client regarding conditions of majeure in writing with documentary proof within 15 days of commencement and completion of force majeure circumstance.

b) By the work or delay of other contractor or tradesmen engaged by the Employer.

c) In consequence of the contractor not having received in due time necessary instruction/clearance from the Architect for which he shall have specifically applied in writing, fifteen days before its actual requirement.

No claim whatsoever for any extra compensation in respect of or arising out of extension of time as specified above shall be payable by the employer.

5. Contractor's responsibilities:

The Contractor shall have the following responsibilities in carrying out the Work and the Project Coordination Services, respectively:

i. The Contractor shall, on the instruction of the Project Engineer, immediately dismiss from the Work any person employed thereon by him who may, in the opinion of the Project Engineer / Owner, be incompetent or who engages in unlawful or disorderly conduct, and such persons shall not be re-employed on the Work without the prior written permission of the Project Engineer.

ii. The Contractor has to provide the detailed shop drawings for any kind of structural repair work for obtaining necessary approval from Structure Consultant/Architect/ Client.

iii. Contractor shall indemnify the Owner &Project Engineer for loss suffered by the Owner &Project Engineer on account of any act/omission/neglect of the Contractor's, workers, employees, Sub-Contractors etc.

iv. The Contractor shall comply with all safety standards to the satisfaction of the Consultant / Site-in-Charge.

v. The Contractor shall take full responsibility for the management & supervision of the Sub-Contractors.

vi. The Contractor shall ensure that all Sub-Contractors engaged exercise all such skill, care and technical competence as represents a high standard within their respective professions or trades as is appropriate for the satisfactory execution of their work and services.

vii. The Contractor shall not assign this Contract or any part of it. The Owner / Consultant / Site-in-Chargereserves the right to review and approve each Sub-Contractor which the Contractor recommends at any time to engage to perform any services before such Sub-Contractor is hired or performs any service.

viii. The Contractor shall be responsible for the care of the Work and the management and supervision of the Sub-Contractors.

ix. The Contractor shall exercise constant and continuous supervision and control over the workmanship, materials, plant, machinery, equipment etc used in the Work and report on the status of the same to the Consultant / Site-in-Charge.

x. The Contractor will be responsible for obtaining all necessary permits, approvals, certificates and the like.

xi. All the obligations and responsibilities of the Contractor under the Contract shall be discharged by him subject to the satisfaction of the Owner / Project Engineer.

xii. The contractor shall use latest standards, codes and regulations, as applicable for the purpose specified and suitable for respective uses intended.

xiii. The contractor shall ensure that all work complies with statutory norms and regulations.

xiv. The contractor have to submit 2 sets of As built drawings alongwith CD's for all kind of works to the client Engineer-in-charge for his approval with the final bill.

6. SITE:

6.1 Contractor to satisfy himself about site conditions:

The Contractor represents that before tendering for the Work the Contractor has visited the Site and satisfied himself about the Site conditions for construction and for logistics and smooth flow of workmen and materials as well as permission from Authorities for this purpose. The Contractor has examined the Site and taken note of character of the soil and of the excavations, the correct dimensions of the Work, and facilities for obtaining any special articles called for in the Contract Documents. The Contractor has also made its own assessment and obtained all information on the Site constraints and on all matters that will affect the execution, continuation and progress, and completion of the Works. Any extra claims or extension of time made in consequence of any misunderstanding, incorrect information on any of these points

or on the grounds of insufficient description or information shall not be entertained or allowed at any stage.

6.2 Treasures, Antiquities found are property of owner:

All fossils, antiquities and other objects of interest or value, which may be found on the Site at the commencement or during the progress of the work, shall be the property of the Owner. The Contractor shall carefully take out and preserve all such fossils, antiquities and objects and shall immediately deliver the same in their discovered state into the possession of the Owner.

7. NATURE OF CONTRACT:

ITEM RATE Contract:

The Contract shall be an item rate Contract wherein the item rates are for the finished work as per the Contract Documents. The Contractor shall be entitled to payment, in Indian Rupees, of no more than the Contract Price as stated in the Letter of Award / Work Order, in consideration of the Work performed and completion of the Work. The Contractor understands and agrees that the amount payable is assessed on a re-measurable basis in accordance with the tendered rates. However, the Contract Price may be altered on account of a change order approved in advance by the Owner / Project Engineer. The Contract Price shall include payment for the supply of all labour (including payment to his Sub-Contractors), equipment, materials, plant and machinery, tools, transportation, framework, scaffolding, works under this tender and including all applicable taxes and duties, octroi, levies, royalties, fees, insurance premiums, contributions towards employees benefits including ESI and PF and funds, distribution of power and water and all services and activities constituting the Scope of Work defined in the General Conditions of Contract. The Contract Price shall also include the Contractor's establishment, infrastructure, overheads & profits and all other charges, and shall generally be inclusive of every cost and expense required by the Contract to be borne by the Contractor and necessary for the proper execution and completion of the Work under the Contract, in conformity with the Contract Documents and the best engineering and construction practices and to the satisfaction of the Consultant/Site-in-charge and the Owner.

8. ESCLALTION:

No escalation of the prices shall be allowed during the period of the contract for any reasons whatsoever and the prices quoted by the Contractor shall be deemed to be fixed.

9. TAXES, DUTIES ETC.:

As part of the Contract Price, the Contractor shall, in connection with the Work, including GST and all applicable duties and any other taxes including but not limited to tax on the Work, levies or royalties payable on the materials and equipment forming part of the Work, now or hereafter imposed, increased or modified from time to time and shall also include any other statutory obligations and no claims on this account shall be entertained or allowed at any stage subsequently. Tax including as per applicable shall be deducted as applicable at Source in accordance with the statutory requirements from all payments made to the Contractor, including that in respect of the Mobilization advance, if paid. Contractor shall provide any other comply with all the formalities that may be required by the Central/State Government for procurement of material, and shall be liable to file all such returns with the Government Departments as may be necessary and get them assessed at his own cost.

10. NOTICES, FEES, BYELAWS, REGULATIONS, ETC.:

The Contractor shall comply with all applicable laws and Government Acts including the Byelaws or regulations of Central and / or Local Authorities relating to the Work in so far as labour, construction, fabrication and installation activities are concerned, and he shall obtain from the Central and / or Local Authorities all permissions and approvals required for the plying of trucks, construction machinery etc., and also for construction of temporary offices, labour camps, stores and other temporary structures in connection with the Work, and the Contractor shall give all notices and pay all fees and charges that are and that can be demanded by law thereunder. In the Contract Price for the Work, the Contractor shall allow for such compliance and work, and for the giving of all such notices, and shall include the payment of all such fees and charges.

11. LICENCES AND PERMITS:

The Contractor shall directly obtain all licences and permits for the materials under Government control, and those required to be obtained by the Contractor for the execution of the Work. The Contract Price shall include all transportation charges and the other expenses that may be incurred in this connection.

12. CONTRACTOR'S SITE ORGANIZATION AND RESOURCES:

12.1 Contractor's representative and supervisory staff:

The Contractor shall at his cost provide and ensure continued effective supervision of the Work with the help of the Contractor's Representative, assisted by team of qualified, experienced and competent engineers, supervisors and adequate staff, to the satisfaction of the Project Engineer for the entire duration of the Work. The Contractor shall submit his proposed site organization chart for the approval of the Project Engineer. The Contractor's Representative shall be on the Site at all times as the Work and the Project progresses and shall be responsible for carrying out the Work to the true meaning of the Drawings, Specifications, Conditions of Contract, Schedule of Rates, the other Contract Documents, and instructions and directions of the Project Engineer. The instructions and directions given in writing to the Contractor's Representative or to any of his assistants at the Site by the Project Engineer shall be deemed to have been given to the Contractor officially. Attention is called to the importance of the Contractor requesting written instruction from the Project Engineer before undertaking any Work where the Project Engineer's and/or Owner / Consultant/ Site-in-charge's direction or instructions are required. Any such Work done in advance of such instructions will be liable to be removed at the Contractor's expense and will not be paid for unless specifically approved in writing by the Consultant/ Site-in-charge as the case may be.

All key staff employed at the Site by the Contractor shall be considered essential to the performance of the Work and the Project Co-ordination Services, and all key staff shall be subject to the approval of the project Engineer. However such approval shall not relieve the Contractor of any of his Contractual obligations. No staff including the resident engineer and other technical supervisory staff shall be removed or transferred from the Work without the prior written permission of the Project Engineer. The Project Engineer shall, however, have the authority to order the removal from Site of any undesirable personnel. If key staff becomes unavailable for assignment to the Work or the Project Co-ordination Services for reasons beyond the Contractor's control, the Contractor shall immediately notify the Project Engineer to evaluate the impact on the project. Prior to substitution or addition of any key staff, the Contractor shall obtain written consent as to the acceptability of replacements or

additions to such personnel from site. The Contractor shall at all times be fully responsible for the acts, omissions, defaults and neglect of all of his representatives, agents, servants, workmen and suppliers and those of his Sub-Contractors.

12.2 Man-power and plant and machinery:

The Contractor shall at his own cost provide and install all equipment, materials, plant/machines. The equipments like concrete mixers, ladders, and scaffolding etc, necessary for the execution of the Work in conformity with the Contract Documents and to the satisfaction of the Consultant/Site-in-charge will also be provided by the contractor at his own cost in adequate quantity. Also, all machines, tools, formwork material, man-power and everything else necessary for the proper and satisfactory execution and completion of the Work in accordance with the Contract Documents shall be provided by the Contractor at his own cost. The Contractor shall within two weeks of the award of Contract submit a complete list of his manpower, plant and machinery for the approval of the Consultant/Site-in-chargewhich approval however shall not relieve the Contractor of any of his responsibilities, obligations and liabilities under the Contract. The Contractor shall augment his manpower, plant and machinery without extra cost to the Project Engineer whenever required or so directed by the Consultant/Site-in-chargein order to conform to the approved construction programme for the achievement of milestones and Virtual Completion.

12.3 Scaffolding, staging, guard rails, barricades:

The Contractor shall at his cost provide steel scaffolding, staging, guard rails, barricades and safety barriers around all excavations, openings and at all edges, temporary stairs and other temporary measures required during construction. The supports for the scaffolding, staging guard rails, barricades and safety barriers and temporary stairs shall be strong, adequate for the particular situations, tied together with horizontal pieces and braced properly. The temporary access to the various parts of the building under construction shall be rigid and strong enough to avoid any chance of mishaps. The entire scaffolding arrangement together with the staging, guard rails, barricades and safety barriers, and temporary stairs shall be to the approval of the Consultant/Site-in-chargewhich approval however shall not relieve the Contractor of any of his responsibilities, obligations and liabilities for safety and for timely completion of the Work. The use of wooden scaffolding on the Site is strictly forbidden.

12.4 Safety Equipment & Personnel:

The Contractor shall provide sufficient helmets, safety boots/shoes, nets and protective clothing for use by the Project management team, his own staff and staff of its sub-contractors. The Contractor shall make available at all times when work is being undertaken, a vehicle suitable for the emergency evacuation of personnel from the site to a hospital staffed and equipped to receive injured personnel.

The contractor shall provide a fulltime, experienced and suitably qualified Safety Supervisor at site who shall be responsible for incorporation, implementation and enforcement of all safety measures and requirements for maintaining safe working conditions, safety of manpower and equipment, general safety and security of Site as per the various safety codes and stipulations mentioned in contract documents.

12.5 Temporary Lighting:

The Contractor shall make his own arrangement in respect of the provision of adequate lighting at all places where his workmen are engaged for carrying out the

Work and also provide general lighting of site as a whole in a proper safe and satisfactory manner. Client shall provide the electrical point at one place.

12.6 Payment of wages/Sub Contractors/Supplier:

In case the contractor fails to pay fare wages as required by the authorities then the owner/ Consultant/Site-in0charge shall be entitled to do so and receives such amounts including associated cost incurred by them in doing so from the contractor.

12.7 Child Labour:

The Contractor shall not employ any labour less than 18 years of age on the job. If female labour is engaged, the Contractor shall make necessary provisions at his own expense for safeguarding and care of their children and keeping them clear of the Site. No children shall be permitted on the Site.

13. CONSTRUCTION PROGRAMME, SCHEDULES AND PROGRESS REPORTS:

13.1 Construction Programme:

i. Every contractor should furnish along with his tender an overall construction programme utilizing a known CPM software package like Microsoft Project, latest version. The construction programme shall clearly show all the sequential activities of work required to be carried out from the commencement of the Work up to the Virtual Completion. Work associated with each of the packages, i.e., civil, water supply and sanitation works etc., shall be clearly identifiable.

ii. The construction programme shall be based on the required milestones as per the enclosed bar chart.

14. Payment of Bills.

14.1 Running Account Bills:

The Contractor has to submit the Running Account Bills in quadruplicate once in a month along with detailed measurements in serially machine numbered register, abstract sheets, deviation statement for on going and completed work, purchase bills, materials reconciliation statement and any specific instructions which may be given in this regard by the Project Engineer shall also be adhered to by the Contractor.

15. Retention Money:

Deduction towards Retention Money shall be made at 10% of the value of Work as certified by the Owner during each running bill.

The retention money shall be returned after completion of Defects Liability Period including any extensions thereof, provided that the building is then free of defects and the Contractor has rectified all defects identified by the Consultant/ Site-in-Charge and Owner. The Retention Money shall not carry interest.

Work for Renovation of Toilets in Centenary Hostel for Working Women at YWCA Of Delhi, Ashoka Road, New Delhi-110001.

Detailed Abstract

Sr. No	Discription	Amount
A	Civil, Plumbing & Sanitary Works	
B	Structure Work	
C	Toilet Partition Works (Compacted laminate)	
D	Electrical Works	
	Total Amount	

BOQ for Civil & Plumbing Work for Toilets in Centenary Hostel for Working Women at YWCA Of Delhi, Ashoka Road, New Delhi-110001.

S. no.	Description	Unit	Qty.	Rate	Amount
1	**Dismantling & Demolishing**				
1.1	Dismantling work in toilets entire area with including the Chipping of the wall tiles / plaster /Cutting / removal/ Cleaning of Top layer Floor Finish & Subfloor (Tiles/ Stone/ IPS/ Concrete), at All levels/ Height All Charges of Manpower, Tools (also including removal all chinaware, plumbing lines, sub base/ khangar from sunken areas, walls, etc.) and stacking of serviceable material within 50 meters lead or disposal of surplus material and unserviceable material as directed from out of the site/ premises as per instruction by engineer in charge. **Note: (including removal of debris/ malba take out of the campus. And only plan area will be measured for payment)**	Sqft.	3100		
2	**Waterproofing (in sunken area)**				
2.1	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm. This layer will be allowed to air cure for 4 hours. b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The waterproofing layer should be applying 300mm above the floor finish level. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipe sand masonry with polymer mixed slurry and also including protection plaster with cement mortar 1:4 (1 Cement: 4 Coarse Sand) 15mm thick as protection layer on the top of waterproofing. **(Note: Only plan area will be measured for payment)**	Sqft.	3100		
3	**Half Brick Work**				
3.1	Providing & laying Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level.				
3.1 a)	Cement mortar 1:4 (1 cement :4 coarse sand)	Sqft.	950		
4	**Piping Work (CPVC pipe)**				
4.1	**Water supply work (Internal)**				

	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same in the wall, including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc.				
4.1a)	25mm nominal outer dia	Rft.	830		
5	**Piping Work (CPVC pipe)**				
5.1	**Water supply work (External)**				
	Providing and fixing Chlorinated Polyvinyl Chloride(CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement ,trenching ,refilling & testing of joints complete as per direction of Engineer in Charge.				
5.1 a)	32mm nominal outer dia	Rft.	450		
6	**Drainage Piping Work (C.I pipe)**				
6.1	**External Drain**				
	Providing and fixing jointing, testing and commissioning spun/centri C.I pipe for soil, waste & vent pipe installation confirming to IS:3989 cut to required length including all necessary fittings and special such as Bends, junctions, offsets. Access pieces (plain or door) & vent cowl. Fixing on external wall/ceiling level supported by M.S G.I clamps & Hangers etc. Making connection with drip seal joint of the required depth as per manufacturer. Cutting of hole in walls/slab shell be provided whereas the pipe are crossing the walls/floor. The item include of cutting hole in wall/slab and making good the same with required material and painting of expose C.I pipes and fittings (after installation) with two coats of synthetic enamel paint.				
6.1a)	75mm dia	Rft.	136		
6.1b)	100mm dia	Rft.	140		
7	**Internal Drain**				
7.1	Providing and fixing jointing, testing and commissioning spun/centri C.I pipe for soil, waste & vent pipe installation confirming to IS:3989 cut to required length including all necessary fittings and special such as Bends, junctions, offsets. Access pieces (plain or door). Laying on floor and making connection with drip seal joint of the required depth as per manufacturer. Cutting of hole in walls/slab shell be provided whereas the pipe are crossing the walls/floor. The item include of cutting hole in wall/slab and making good the same with required material. Including of providing and laying 1:2:4 cement concrete all round the pipe including bed concrete for the following C.I/C.I L.A pipe and special below floor including necessary shuttering etc. complete as required.				

7.1a)	75mm dia	Rft.	300		
7.1b)	100mm dia	Rft.	285		
8	**Filling of Sunken area**				
8.1	Providing & Filling with AAC Broken Blocks filling with cement mortar 1:4 (1 cement : 4 coarse sand) under floor of toilets & other sunken roofs .The mode of measurement shall be as per CPWD Specification.	Cft.	4900		
9	**Tile Flooring**				
9.1	Providing and laying as per approved sample of anti skate floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete. (Anti skate glazed tiles size 10mm Base Rate Rs. 50/ per sqft. (excluding taxes)				
9.1a)	Flooring tiles work (300x300mm)	Sqft.	3100		
10	**Tile Cladding**				
10.1	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer) of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.				
10.1a)	Ceramic Wall glazed Cladding (300x450x8mm)	Sqft.	5500		
11	**Wash basin counters**				
11.1	Providing & constructing 600mm wide wash basin counters with 100mm deep facia as per the existing counter min. 19mm thick pre polished Telephone Black granite slab as per approved sample. Providing the 8mm dia reinforcement 150mm c/c with bed mortar in CM 1:4, providing & fixing 19mm thick second quality marble base, including filling & finishing the joints with cement & colour pigments, cutting opening in granite & marble to accommodate wash basin, fixing of wash basin, half / full round moulding, moulding polishing, edge polishing, curing, cleaning, etc complete at all levels and as per the instructions of the Engineer In Charge. Rate to include entire design as per the detail in addition to the vertical and horizontal support to be polished on the exposed side.	Sqft.	156		
12	**Plater Work**				
12.1	Providing and Laying Plaster work average 15 mm thick Including Curing/ scaffolding at All levels/ Height for Walls/ Sills/ above lintels/ Pillar at the all levels.				
12.1 a)	Cement Mortar 1:4 (1 Cemwnt : half of Corse + half of Fine Sand)	Sqft.	1000		

13	**Interior Finishing**				
13.1	**Paint Work**				
	Emulsion Paint				
	Providing & applying three or more coats of best quality emulsion paint of approved make and existing shade on window etc. applied evenly to give approved Matt or stippled finish, including preparation of surface and coat of approved primer complete as per specification to entire satisfaction of engineer in charge.				
13.1 a)	Emulsion paint to give an even shade : (including the scaffolding for ceiling work)	Sqft.	4800		
14	**Sanitary fixtures, fittings & Accessories**				
	Fixing & installation and testing of white vitreous china floor mounting type European water closet & the followings complete with all accessories. Including cutting the walls & R.C.C floor slab making good the same complete as required. And fixing & installation and testing of PVC dual flushing cistern with adjustment of 3-4.5 liters with the following complete. The flush pipe shall be connected to the W.C with required fittings. Cutting the all and making good same complete as required.				
	C.P bolts and nuts, C.I chair or other hanging arrangements by Fischer/Hilti, Bakelite toilet seat and cover.				
14.1	European type W.C with Dual Flushing cistern	Nos.	21.00		
14.2	White vitreous china Orissa pattern W.C with Dual Flushing cistern	Nos.	9.00		
15	**Health faucets/ Jet Spray**				
	Fixing & installation and testing of jet spray consisting of following complete as required.				
	Jet Spray, Triangular spacer attached with toilet seat hinges , C.P brass flow regular (flow 8 LPM), C.P brass wall flange ,Flexible pipe.				
15.1	Jet spray as described above	Nos.	15.00		
16	**Wash basin**				
	Fixing & installation white vitreous china oval wash basin for top counter mounting with special fabricated brackets painted white, 15 mm C.P. brass central hole lever mixing fitting with pop-up waste, 32 mm C.P. brass bottle trap and pipe to wall with C.P. wall flange and rubber adopter for waste connection complete, including cutting and making good the walls where required.				
16.1	top counter mounting Wash basin as described above	Nos.	27.00		
17	**Toilet Accessories**				
	Fixing & installation and testing of following toilet accessories.				
17.1	15mm dia C.P brass bib cock & C.P brass wall flange as approved sample/quality. (For Bathroom)	Nos.	30.00		
17.2	15mm dia C.P brass bib cock Mixture & C.P brass wall flange as approved sample/quality. (For Wash basin)	Nos.	27.00		

17.3	15mm dia C.P standard bib cock & C.P brass wall flange as approved sample/quality. (For Toilet)	Nos.	30.00		
18	**Sewer Line Connection**				
	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 (1: cement 2: coarse sand 4: graded stone aggregate 20mm nominal size) cement plastered on both sides with cement mortar 1:3 (1: cement 3: coarse sand) finished with a floating coat of neat cement and making necessary channel for the drain.				
18.1	For pipes 75mm to 250mm dia	Nos.	6.00		
	Total Amount				

BOQ for Structure Repair Work for Toilets in Centenary Hostel for Working Women at YWCA Of Delhi, Ashoka Road, New Delhi-110001.

S. no.	Description	Unit	Qty.	Rate	Amount
1	**Dismantling & Demolishing**				
	Dismantling of both toilet slab on each floor : at All levels/ Height All Charges of Manpower, Tools(also including removal of debris/ debris till authority approved yard.	47.25	Cum		
2	**R.C.C Work (Cast-in-situ)**				
	Providing/ Laying **RCC Concrete**, For slab/ beam/ column/ pedestals/ Foundations/ . Including Marking/ Lay-out and provision of Openings/ Cut-outs for MEP/ other work. at All levels/ Height All Charges of Manpower, Tools.				
2.1	M-20 (in grade slab)	27	Cum		
2.2	M-25 (retrofitting jobs)	40.5	Cum		
3	**Reinforcement Work**				
	Providing/ Fixing of **Reinforcement Steel** for Slab/ Beam/ Foundation at All levels/ Height. Including cutting/ bending/ all lead/ lift. Also Including cost GI Binding wire. (Grade slab and slab)	8100	Kg.		
4	**CENTERING AND SHUTTERING WORK**				
	Providing and fixing Centering and shuttering for beams, slabs, jambs, counter-forts. including shuttering for single pour concreting, strutting, bracing, propping etc. keeping the same in position during concreting and removal of the same after specified period etc. for straight / inclined shuttering, keeping necessary provision for inserts, projecting dowels, anchor bolts or any other fixtures etc. all complete and as specified and directed.	405	Sqm		
5	**Re-bar work**				
	Providing and Laying, Chemical Anchoring for retrofit of slab, column and beam (HILTI HY-200)				
5.1	10 dia	600	Nos		
5.2	8 dia	600	Nos		

6	Providing and Applying one coat of **Nito bond** on prepared dust free concrete Surface for adhesion with additional concrete	60	Sqm		
7	**M.S. work**				
	Providing /cutting/ fabricating/ welding/Grinding/ fixing/ grouting of Structural Steel work (ISMC/ ISMB/ Flat/ISA/ chequered plate MS Plate/ T/ Tube section/ Hooks/Tie Bolt etc. etc.) at all levels. Including 1 coat of red oxide & 2 or more coat of exterior grade Paint as per approved shade.	1800	Kg		
8	**S.S. work**				
	Providing /cutting/ fabricating/ welding/Grinding/ fixing/ grouting of Structural Steel work Flat/ISA/ plate SS Plate/ T/ Tube section/ Hooks/Tie Bolt etc. etc.) at all levels.	600	Kg		
9	**Dismantling of External Work**				
9.1	Dismantling of exposed brick cladding with all required control for rectification of required area.	2	cum		
9.2	construction of exposed brick wass larching to existing after repair of structure.	4	cum		
9.3	De-mobilization and remobilization between construction phases.	1	LS		
	Total Amount				

BOQ for Electrical Work for Toilets in Centenary Hostel for Working Women at YWCA Of Delhi, Ashoka Road, New Delhi-110001.

S. no.	Description	Unit	Qty.	Rate	Amount
1	**Internal Wiring**				
1.1	Wiring of light point with 2.5 Sq mm. FRLS PVC insulated, 1100 V grade stranded copper conductor wire in surface/recessed including the 25 mm dia 2mm thick heavy duty FR PVC conduit and cost of cutting and filling chases as required with fixing of plate providing & fixing of modular switches (6A, single pole, 240 V), plate, 1.2mm thick box, and earthing with 1.5 Sq mm. PVC insulated green copper wire complete with all accessories as required. The cost of circuit wiring with 2 x 2.5 Sq mm. + 1 x 1.5 Sq mm PVC insulated copper conductor 1100 Volts grade wires shall be included in the cost of point wiring complete with all accessories.				
1.1 a)	First Point (First point control three lights)	Nos.	18		
1.1 b)	Loop Point (Controlling switch included in 1.1a)	Nos.	33		
2	**Power Points**				
2.1	Wiring of 240 Volts single phase, 6 Amps 3/5 pin light plug point with 2.5 sq mm 1100V FRLS PVC insulated, multistranded copper conductor wire in surface/recessed including the 25 mm dia 2mm thick heavy duty FR PVC conduit and cost of cutting and filling chases as required with fixing of plate, 1.2 mm thick box, 6A modular switch socket and earthing with FRLS PVC insulated green colour 2.5 Sq mm. 1100V copper wire complete with all accessories as required. (At most 8 Nos. 6 amps switched socket outlets shall be kept on one circuit).	Nos.	30		
3	**Geyser Points**				
3.1	Wiring of 240 volts single phase, 16 Amp power socket outlet with 4 Sq mm. 1100V FRLS PVC insulated copper multistraded conductor wires in recessed 25 mm dia 2mm thick heavy duty FR PVC conduit including cost of cutting and filling chases as required with fixing of plate providing and fixing of 6 pin 6/16 Amps modular plate type socket near geyser and switch at normal level with internal wiring in 1.2 mm thick box, earthing of 3rd pin with FRLS PVC insulated green colour 4 Sq mm. 1100V copper wire, complete with all accessories as required. (Geyser) (Only 1 No. 16 amps socket outlet shall be kept on one circuit).	Nos.	30		

4	**Exhaust fan points**				
4.1	Wiring of Exhaust fan point with 2.5 sq. mm.PVC insulated copper conductor 1100 volts grade stranded flexible "FRLS" wires in in surface/recessed with lncluding the 25 mm dia 2mm thick heavy duty FR PVC including cost of cutting and filling chases as required with with supply and fixing of modular switches (6A, single pole, 240 V), in 2 mm thick GI box and 6 amps 3 pin socket outlet near exhaust fan and earthing with 2.5 Sq mm. PVC insulated green copper wire complete with all accessories as required.	Nos.	30		
5	**MCBs**				
5.1	Supplying, fixing, testing & commissioning DP sheet steel enclosure on surface/ recess along with 32 Amp, 240 V "C" curve DP MCB complete with connections, testing and commissioning etc. as required.				
	8 Way	Nos.	3		
	6 Way	Nos.	3		
5.2	Supplying and fixing following rating, four pole, 415 V, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	4 Pole 63 Amp.	Nos.	6		
	Total Amount				

BOQ for Pre-laminated partitions for Toilets in Centenary Hostel for Working Women at YWCA Of Delhi, Ashoka Road, New Delhi-110001.

S. no.	Description	Unit	Qty.	Rate	Amount
	Compact laminated partitions				
	Providing & installation of Compact laminated partitions for Bathroom & toilets with 12mm thick HPL board single colour as per approval and size of cubical as per drawing with door and dividers in between the bathroom and toilets. Over all height of the partition is 2100 mm and bottom gap providing 150mm. **(Including the Accessories: Stainless Steel - 304 Grade, Aluminum "U" Channel, Aluminum Door Stopper Channel, Aluminum H Section Top Rail with Wall Bracket, SS Coat Hook , SS Privacy Thumb turn c/w Occupancy Indicator, SS Door Knob, SS Hinges with Cover, Rubber Door Stopper Lining, S.S. Screws 304 G & P.V.C Wall Plugs.**	Nos.	60		
	Total Amount				

LIST OF RECOMMENDED MAKES & MANUFACTURERS

GENERAL

The makes and manufacturers shall be preferably from the following list. In case the same is not available in the market or in case of a change in trade name, equivalent makes/ re-designated manufacturer shall be used with the approval of Consultant.

In case of items not covered in the list, the material shall be best available in the market and each item should have BIS certification mark.

Sl. No	Description	Manufacturers
1	HARDWARE FITTINGS & FIXTURES:	M/s Jayant Metal Manufacturing Co. M/s Shalimar Hardware. M/s Everite, M/s Hardwyn, M/s Earl Bihari, M/s Godrej & Boyce, Secur Industries. M/s EBCO: M/s Godrej & Boyce mfg. Ltd. M/s CROWN
2	WATERSTOPS: (PVC/RUBBER)	M/S Omai Plastics (P) Ltd. M/s Basecon; M/s Pask; M/s Asian Engg. Products; M/s RC Enterprises; M/s Capnhans india Ltd; M/s Fixopan Engrs. Pvt. Ltd.
3	EXPANSION JOINT AND TARFELT WATERPROOFING	M/s Shalitex; M/s Tiki Tar industries; M/s STP Ltd. (Ms Shalimar Tar Products); M/s Lloyd Insulation (I) M/s Pidilite M/s IWL
4	INTEGRAL WATER: PROOFING COMPOUND	Accoproof, Cico; Impermo LAFARGE, FOSROC, ROFFE,SIKA,
5	WATERPROOFING TREATMENT	SIKA, Fosroc, Roffe, Overseas Water Proofing Corporation, Chowgule TEXSA, PIDILITE,FOSROC,SIKKA,
6	CEMENT PAINTS, EXTERIOR EMULSION PAINTS, DISTEMPER, ACRYLIC EMULSION PAINTS, ENAMEL PAINTS & FLAT OIL PAINTS	M/s Asian Paints; M/s Berger Paints; M/s Goodlas Nerolac; M/s Jenson Nicholson;
7	FALSE CEILING / PARTITION	INDIA GYPSUM, ARMSTRONG, LAFARGE BORAL GYPSUM LIMITED
8	DECORATIVE LAMINATES	Decolam, National, Formica, Greenlam, Century (MERINO)
12	CONCRETE PAVER BLOCKS	Basant Beton, Cobble stones, Abideep Interlock Pavers, PVt. Ltd., Pave Stone Marketing (P) Ltd., Designers Pavings & Tiles Pvt. Ltd.,

		Bessers Concrete Paver Blocks.
13	SANITARY APPLIANCES	Parryware, Hindustan Sanitary Ware & Industries Ltd., Neycer.
14	CP BRASS FITTINGS, WASTE COUPLINGS, BOTTLE TRAPS	JAQUAR, ESSCO, NOVA, GEM, MARC, ESSESS, JUPITER AQUA , GROHE.
15	PVC flushing cisterns	Parry ware, Hindware, Neycer
16	Mirror	Saint Gobain, Modigaurd, Atul Glass Works,
18	Stainless Sink	Nirali, DIAMOND, Jaquar, Dayana,, AMC, etc.
19	GI Pipes	TATA, JINDAL
20	GI Malleable fittings	Unik, Zoloto PEC, MJM, Bimal
21	GM gate/ Globe valves	Neta, Sant, NEW, Leader
22	Ball Valves	MBM, Zoloto, A-I (js), Techno
23	SW Pipes & Gulley traps	Perfect Kashmira, south India Corporation, TACEL, INDO PIPES
24	RCC Hume Pipes	Indian Hume Pipes, Canara Cement Pipes, Karnataka Cement Pipes
25	HDPE/UPVC Pipes & fittings	Prince, Finolex, Supreme, Kitec, Oriplast, Polyfab, Sangir, Oriplast, Varuna Pipes, Shree Darshan Pipes.
26	CPVC pipes & fittings	Flowgaurd (ASTRAL), Finolex
27	CI manhole covers	Neco
28	PVC storage tanks	Sintex, Infra, ICP (India) Pvt. Ltd., Century, Polycon
29	CEMENT	ACC, Ambuja Cement/ Coromandel Cement, / RAJASHREE, ZUARI, ULTRA TECH CEMENT
30	REINFORCEMENT STEEL (TMT)	SAIL, TATA STEEL, RINL
31	ADMIXTURES	FOSROC, SIKA, ROFF
32	ACID / ALKALI PROOF LINING	KOTHARI CORROSION CONTROLLERS, COROMANDEL PRODORITE
33	PVC PIPES	SUPREME, INFRA, PRINCE, FINOLEX
34	ANTI TERMITE TREATMENT	PEST CONTROL INDIA LTD, MYSODET LTD., ASHOK PEST CONTROL – HUBLI, PEST CONTROL – PUNE, CHRISLINE MARKETING AGENTS- Bangalore

35	Glazed tiles / Ceramic tiles / Vitrified ceramic tiles	Johnson/Kajaria Tiles/ Somany Floor & Wall Tile/Bell-Ceramics/NITCO
36	Adhesive	Fevicol/vamicol
37	Anchor bolt & fastener	Hilty/ fischer
38	Water proofing compound	Cico no. 1/ impermo/ accoproff/ Dr. Fixit
39	Cast Iron Pipe (C.I pipe) & Fittings	NECO/ ELECTROSTEEL / KESHORAM / HINDUSTAN
40	Drip seal for C.I pipe jointing	Vinod cement or equialent
41	PVC pipes & Fittings	Supreme/ prince/ finolex/ Astral/ polypack/ Ashirwad
42	CPVC pipes & Fittings	Flow guard/ Astral/ Ashirwad pipes
43	Pipe clamps	Camry/ chilly/ euro clamps or equivalent of ISI mark
44	Dual Flushing Cistern	Hindware/ Geberit
45	W.C & Wash besin	Hindustan/ Cera/ Parryware/ Roca/ Kohler India/ Duravit/ TOTO
46	Cables	KEI/Polycab/Universal
47	Wire	Finolex/ Skyton/ RPG/KEI/Havels
48	MCB	ABB/MDS Legrand/ Hager (L&T)/Schinder
49	M.S Conduit	BEC/AKG/Polypack
50	PVC Conduit	BEC/AKG/Polypack
51	Switch & Sockets	Legrand/Schinder Electric/ Havells/ Crompton graves
52	Pre-laminated cubical	Merino, Greenlam,

Technical Specification for Civil Work

1. SPECIFICATION FOR DISMANTLING & DEMOLISHING WORK

1.1 SCOPE OF WORK:

The work envisaged under this sub-head is for dismantling and demolition of brick masonry stone masonry in cement/lime mortar, Plain cement concrete/ reinforced cement concrete works and fencing, removing wooden chowkhats of doors, wooden or steel windows.

1.2 GENERAL:

The term Dismantling implies carefully taking up or down and removing without damage. This shall consist of dismantling one or more parts of the building as specified or shown on the drawings.

The term Demolition implies taking up or down or breaking up. This shall consist of demolishing whole or part of work including all relevant items as specified or shown on drawings.

1.3 PRECAUTIONS:

Necessary propping, shoring and/or underpinning shall be provided for the safety of the adjoining work or property, which is to be left intact, before dismantling and demolishing is taken up and the work shall be carried out in such a way that no damage is caused to the adjoining work or property. Wherever required, temporary enclosures or partitions shall also be provided. Necessary precautions shall be taken to keep the dust- nuisance down as and when necessary.

Dismantling shall be commenced in a systematic manner. All materials which are likely to be damaged by dropping from a height or demolishing roofs, masonry etc., shall be carefully dismantled first. The dismantled articles shall be passed by hand where necessary and lowered to the ground and not thrown. The materials then be properly stacked as directed by the Engineer-in-charge.

All materials obtained from dismantling or demolition shall be the property of the Government unless otherwise specified and shall be kept in safe custody until handed over to the Engineer-in-charge.

Any serviceable material, obtained during dismantling or demolition shall be separated out and stacked properly as indicated by the Engineer-in-charge within a lead of 150 m. or as specified in the item. All under serviceable materials, rubbish etc. shall be disposed off as directed by the Engineer-in-charge.

1.4 TREATMENT:

All the dismantled area shall be rendered clean off all debris, dust etc. The sides of jambs, sills, soffits etc. of the openings if any, after taking out doors and window chowkhats, unless and otherwise to be treated, shall be plastered in C.M. 1:3 with neeru finish to render true sides, corners, edges etc.

1.5 MODE OF MEASUREMENT:

Brick/ Stone Masonry & R.C.C./P.C.C. Works: The measurement of brick /stone masonry with or without plaster/painting and RCC/PCC works shall be taken correct to a centimeter and volume calculated in cubic metres up to two places of decimal. Dismantling of Brick/ stone masonry, PCC and RCC will be measured separately and paid for. Reinforcement shall be stacked separately and will be the property of owner.

Dismantling or demolition shall be deemed to include removal of service pipe lines, electrical conduits, shelves, doors, windows & sanitary items.

1.6 RATES:

The rate shall include cost of all such operations mentioned above including necessary labour, materials, transport, scaffolding, stacking the serviceable materials, disposing the unserviceable materials within the lead specified, all as directed by the Engineer-in-charge.

2.0 SPECIFICATION FOR MASONRY AND ALLIED WORKS

2.1 SCOPE OF WORK

This section of the specification covers, furnishing, installation including handling, transporting, batching, mixing. laying, scaffolding, centering, shuttering, finishing, curing, protection and repairing till handing over of brick masonry and allied works including DPC and plinth protection.

2.2 GENERAL REQUIREMENTS

The Contractor shall furnish all skilled and unskilled labour, plant, equipment, scaffolding, materials, etc. required for complete execution of the work in accordance with the drawings and as described herein and/or as directed by the Consultant. All workmanship shall be in accordance with the latest standards and best possible practice. Masonry work shall be true to line & level as shown on drawings. All such masonry shall be tightly built against structural members and bonded with dowels, anchors, inserts, etc. as shown on the drawings.

The Contractor shall carryout all works for setting out the building lines, locating the co-ordinates and establishing the reduced levels (RL's) on the basis of reference grid lines and bench mark, which shall be furnished by the Owner, at one or more locations.

Any approval, instructions permission, checking, review, etc. whatsoever by the Consultant shall not relieve the Contractor of his responsibility and obligation regarding adequacy, correctness, completeness, safety, strength, quality, workmanship, etc.

2.3 CODES AND STANDARDS

All applicable standards, acts and codes of practice referred to shall be the latest editions including all applicable official amendments and revisions. A complete set of all these documents shall generally be available at site, with the Contractor.

In case of conflict between this specification and those (IS Standards, Codes etc.)

Some of the applicable Indian standards, Codes, etc. are referred to here below:

2.3.1 BRICK WORK :

Brick shall be table moulded of uniform size, shape and colour, must be well burnt so as to give a clear ringing sound when struck. They shall be clean, whole and free from flaws, cracks, stones or lumps of any kind, especially lime. They shall have sharp edges, shapes and even surface and shall be sound & hard to resist compression. They shall be from a source to be approved by the Engineer-in- charge and the quality of the brick should be such that they shall not absorb water more than the percentages mentioned in clause 7.2 of IS 1077-1992 after immersion in water for 24 hours and shall have a minimum compressive strength of 5.0 N/mm^2 (for normal brickwork) / 7.5 N/mm^2 (for wire cut bricks)as per IS: 1077-1992 and schedule of items and subject to the provisions mentioned in Table 1 of IS 2212:1991.

All bricks shall be thoroughly saturated with water before use. They should be soaked for about 12 hours for this purpose. No broken bricks shall be used except as closers. The course shall be laid flush in mortar and every course shall be thoroughly grouted, joints shall be broken vertically and they shall not exceed 10 mm in thickness. The horizontal joints shall not be more than 10 mm in thickness. The work shall not be raised more than 12 courses per day. It shall be kept constantly wet for at least 10 days and twice a day for a month. Date of laying the brickwork shall have to be marked, as directed by the Engineer-in-charge, on the wall so as to ensure easy monitoring of the curing period.

Before starting the brick masonry, the concrete surfaces e.g., plinth beams, columns, slabs, chajjas, etc. shall be thoroughly hacked and washed to remove all mud, dirt, loose particles, etc. No holes for supporting scaffolding arrangement shall be allowed especially at the junction of concrete surfaces and the brickwork. However, these holes may be allowed elsewhere and are to be made good after the scaffolding is removed in such a manner so as to ensure complete water tightness. When the fresh brickwork is to be started on the old brick masonry, the surface should be thoroughly cleaned and washed to remove all moss deposit, loose mortar, mud and dirt, etc.

String courses and mouldings shall be set straight and true by projecting brickwork with properly cut and shaped bricks wherever necessary with as fine joints as possible. The walls shall be carried up regularly in all cases when the nature of the work will admit of it, not leaving any part 1.0 M lower than another, when circumstances render it necessary to carry out on the same section of a building in uneven course. The brick shall be raked back so as to maintain uniform and effectual bond.

In brick arched and other circular work, the brick shall be shaped to have joints indicating correctly to the center from the front to back of walls with thickness not more than 10 mm. The face brick shall be of uniform colour and with sharp surfaces. Where pointing or plastering is specified, the joints in all brickwork shall be raked out on both the faces of the wall as the work proceeds.

The size of the brick shall be 230 (9") x 115 (4-1/2") x 75 mm (3") (or 190 x 90 x 90 mm). 230mm (9") and 115 mm (4-1/2") thick walls will be built fair on one side only. All walls of greater thickness shall be built without exception with fair face. Half brick or 115 mm thick brickwork in CM 1:4 with bricks of designation 5.0 / 7.5 shall be carried out in panels and with horizontal stiffeners of 115 x 75 mm at every fourth course with two MS bars of 6 mm diameter and spacers of 6mm diameter and vertical stiffeners of 115 x 75 mm with two MS bars of 6 mm diameter and spacers of 6 mm diameter at 2M center to center laid in 1:2:4 concrete property filled including formwork, consolidation, curing, etc. The RCC work shall not be measured separately but will be included in the brickwork. The MS reinforcement however will be measured separately.

The contractor shall provide all necessary openings doors, windows or such other services and shall embed electrical fittings and fixtures; sleeves supplied by the other agency if required at no extra cost. Also shaping of the bricks for the exhaust fan, circular openings shall also be carried at no extra cost. All these openings shall be closed and gaps to be filled and finished neatly after the installation of all these services at no extra cost.

The rate for brickwork for 345 mm , 230 mm and 115 mm thick walls shall include all single or double scaffolding, tools and plants, quoins and jambs, hacking, cutting and wastage of bricks for splayed joints, watering, etc. deductions shall be made for all the openings, lintels, sills, columns, etc. The unit for measurement of 345 mm, 230 mm brick masonry and above will be in cubic meter and for 115 mm thick masonry in square meter. The rates for brickwork shall also include the cost of the following Making good all holes (also ensuring the water tightness of the holes left out in external walls for supporting the scaffoldings), chases to any depth due to conduit pipes, holdfast, switches, plug box, exhaust fan openings and other openings, etc.

2.3.2 MORTAR:

Mortar for brick masonry shall be prepared as per IS: 2250. Mix for cement mortar shall be as specified in the respective items of work. Gauge boxes for sand shall be of such dimensions that one complete bag of cement containing of 50 kg of cement forms one unit. The sand shall be free from clay, shale, loam, alkali and organic matter and shall be of sound, hard, clean and durable particles. Sand shall be approved by Engineer-in-charge. If so directed by the Engineer-in-charge, sand shall be thoroughly washed till it is free from any contamination. For preparing cement mortar, the ingredients shall be first mixed thoroughly in dry condition. Water shall then be added and mixing continued to give a uniform mix of required consistency. Cement mortar shall preferably be machine mixed, though hand mixing in a thorough manner may be allowed. The mortar so mixed shall be used within 25 minutes of mixing. Mortar left unused beyond specified period shall be rejected.

All the brickwork shall be built tightly against column, floor slabs or other structural members.

2.3.4 Raking Out Joints

Joint of brick work shall be raked out to a depth of 12 mm at the time of laying and face of brickwork shall be kept clear of all mortar.

2.3.5 Protection of brick work

The brick work shall be protected and covered with gunny bags or water proof sheets from the effects of inclement weather, rain, frost, etc., during the construction and until the mortar sets.

2.3.6 Curing: All brick works shall be kept moist for 10 days after laying.

2.3.7 Brick-on-edge coping, brick paving and cut brick corner: The top course of all plinths, parapets, steps and tops of walls below R.C.C. slabs, beams and paving etc. shall be laid with brick-on-edge, unless specified otherwise. Care shall be taken that bricks forming the top corners and ends of walls shall be properly radiated and keyed into position as specified in IS:2212.

2.4 Rates: The rate shall include cost of all materials and labour involved in all the operation described above.

3.0 CERAMIC TILE FLOORING AND DADO

3.1 SCOPE

The work covered under this specification consists of providing and laying at all levels and floors ceramic tiles in flooring, skirting and dado in accordance with these specifications and relevant drawings.

3.2 APPLICABLE CODES AND SPECIFICATIONS:

The relevant IS. Specifications, standards and codes given below are made a part of this specification. All standards, specifications, code of practices referred to herein shall be latest edition including all applicable amendments, revisions and additional publications.

3.3 CERAMIC TILE FLOORING:

Ceramic tiles shall be of specified size, best quality and of approved make and colour.

All the material shall be obtained from one source only. The tiles shall be sound hard welt and evenly glazed, free from twist and with fine and sharp edges. Specified makes of tiles shall be brought for the approval and samples of tiles shall be first got approved by the Engineer-In-charge and all the tiles which shall be used in the work shall strictly conform to the approved sample otherwise all the tiles wilt be rejected.

The surfaces where the tiles are to be laid shall be thoroughly hacked, joints of masonry raked, cleaned of alt mortar scales, concrete lumps, loose materials etc. and washed to remove mud, dirt etc. from the surfaces. Unless and until the surface is approved by Engineer-In-charge, laying of tiles in flooring or dado shall not be started. The prepared surface shall be thoroughly drenched with water. The glazed tiles and all specials shall be soaked in water for a minimum period of 6 hours before use.

A bedding of cement mortar (1:3) and minimum 35mm thickness for flooring shall be laid evenly to levels or slope as directed so as to keep the top level flush with adjacent flooring generally.

The glazed tiles shall then be laid on the bedding with a backing of thin cement paste. All tiles shall be truly and evenly set and pressed in position to obtain uniform plane surface. The tiles shall be close jointed and all joints shall be uniform and run in perfect straight lines. The joints shall be staggered or continuous as directed. The other specials like corner edges, elephant foots, bull eyes etc. shall be used at the proper place wherever required and as directed. The entire finished surface shall thoroughly be cleaned to remove all cement stains etc. The joints shall be then pointed with a neat cement of matching colour. The flooring shall be kept wet for 7 days. The flooring shall be thoroughly cleaned with suitable hydrochloric acid before handing over.

3.4 CERAMIC TILE DADO:

The prepared surface shall be plastered with cement mortar (1:3) to get a backing of 15mm thick. The tiles shall be fixed with tile fixing adhesive mixed with cement paste as per the manufacturer's specifications. The plastered surface shall be even, uniform and true to plumb. The glazed / ceramic tiles shall be fixed in position with a backing of cement paste.

The specifications for workmanship regarding joints, specials, cleanings, paintings, curing etc. shall be exactly similar to ceramic tile flooring.

3.5 MODE OF MEASUREMENT:

Length and breadth of flooring shall be measured correct to a centimeter before laying skirting, dado or wall plaster. In flooring, wherever coves are used at the junctions, the length and breadth shall be measured between the lower edges of the coves. No deductions shall be made for opening not exceeding 0.2 square metre.

3.6 Rates: The rate shall include cost of all materials and labour involved in all the operation described above.

4.0 PLASTERING:

The specification covers the plastering work on brick or concrete faces of specified thickness with architectural features wherever necessary. For application of Cement and Cement lime – plaster finishing IS: 1661-1972 'Code of practice for application of cement and lime plaster finishes" shall be applicable.

4.1 Mix:

Mortar for plastering in the proportion as specified on drawings / specification, shall be mixed in a dry stage and then wetted and mixed thoroughly to obtain the required consistency. The mortar shall be mixed in an approved manner including machine mixing of desired by the Engineer and in batches so that the mortar is consumed within half an hour of mixing. Any mortar for plaster which is partially set shall be rejected and removed from site.

The mix for plastering shall be as follows:

230 brick wall	**Cement Mortar**
Outside Plaster	First layer (base coat) of 12mm thick 1:6 (1 cement, 6 Fine sand and second layer (finish coat) of 6mm thick 1:4 (1 cement, 4 Fine sand)
Inside Plaster	12mm thick 1:6 (1 Cement, 6 Fine sand)
115 brick wall / 100 concrete block wall (To be used only for inside walls)	12mm thick 1:6 (1 Cement, 6 Fine sand)
Concrete Ceiling Plaster	6mm thick – 1:4 (1 Cement, 4 Fine sand)

4.1 a) Application:

Before application of plaster, surface is to be prepared conforming to IS: 1661 latest revision.

In all plaster work, mortar shall be applied with somewhat more than that the required thickness and well pressed into the joint and in the surface and rubbed and leveled with a flat wooden rule to give required thickness. Plaster, when more than12mm thick, shall be applied in two coats base coat followed by the finishing coat. Thickness of base coat shall be just sufficient to fill up all unevenness in the surface; no

single coat, however, shall exceed 12mm in thickness. The undercoat shall be thicker than the upper coat. The overall thickness of the plaster shall not be less than the minimum thickness shown in the drawings or specified in the specification. The undercoat shall be allowed to dry and shrink before applying the second coat of plaster. Cement mortar for plastering work shall be used within 30 minutes after adding water to cement and should be kept agitated at intervals of 20 minutes.

The undercoat shall be scratched or roughened before it is fully hardened to form a mechanical key. The method of application shall be 'thrown on' rather than 'applied by trowel'. The finished surface shall be true to line and plumb and the Contractor shall without any extra cost to Owner make up any irregularity in the masonry / concrete work with plaster. The mortar shall adhere to the surface intimately when set and there should be no hollow sound when struck. All vertical edges of pillars, door jambs etc. shall be chamfered or rounded off as directed by the Engineer. All corner must be finished to their true angles or rounded. Any plastering that is damaged shall be repaired and left in good condition at the completion of the job without any extra cost to Owner.

4.1 b) Curing:

Each undercoat shall be damp cured for atleast 2 days and kept damp continuously till the next coat is applied. All final plastered surfaces after laying and sufficiently hardened shall be kept wetted for a minimum period of seven (7) days and shall be protected from excessive heat and sunlight by suitable approved means.

4.2 Rates: The rate shall include cost of all materials and labour involved in all the operation described above.

5.0 SPECIFICATIONS FOR FITTINGS AND FIXTURES

5.1 SCOPE OF WORK:

The work covered under these specifications consist of supplying different types of fittings and fixtures required for doors, windows, ventilators etc. The supply shall be in accordance with the specification, drawings / approved samples. Samples of various fittings and fixtures proposed to be incorporated in the work shall be submitted by the contractor for approval of the Engineer-in-charge before order for bulk supply is placed.

6.0 SPECIFICATIONS FOR PUBLIC HEALTH ENGINEERING WORKS (INTERNAL & EXTERNAL ENGG.WORKS)

6.1 GENERAL INSTRUCTIONS: The detailed specifications given hereinafter are for the items of works described in the schedule of quantities attached herein, and shall be guidance for proper execution of work to the required standards. It may also be noted that the specifications are of generalized nature and these shall be read in conjunction with the description of item in schedule of quantities and drawings. The work also includes all minor details of construction which are obviously and fairly intended and which may not have been referred to in these documents but

are essential for the entire completion in accordance with standard Engineering practice.

Unless specifically otherwise mentioned, all the applicable latest codes and standards published by the Indian Standard Institution and all other standards shall govern in all respects of design, workmanship, quality and properties of materials and methods of testing, method of measurements etc. Wherever any reference to any Indian Standard Specification occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued their to or revisions thereof, if any. In case, there is no I.S.I. specification for the particular work, such work shall be carried out in accordance with the instructions in all respects, and requirements of the Engineer-in-Charge. The work shall be carried out in a manner complying in all respects with the requirements of relevant codes and standards or as directed by the Engineer-in-Charge and, unless otherwise mentioned, nothing extra shall be paid on this account.

The contractor shall take instructions from the Engineer-in-Charge regarding collection and stacking of materials in any place. No excavated earth or building materials shall be stacked on areas where other buildings, roads, services, compound walls etc. are to be constructed.

The contractor shall maintain in perfect condition all works executed till the completion of the entire work allotted to him. Where phased delivery is contemplated, this provision shall apply to each phase. The contractor shall give a performance test of the entire installation(s) as per standard specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test. The contractor shall clear the site thoroughly of all debris, surplus excavated materials and rubbish etc. left out of his work and dress the site around the building to the satisfaction of the Engineer-in-Charge before the work is considered as complete.

In case of any difference or discrepancy between the specifications and the description in the schedule of quantities, the schedule of quantities shall take precedence. In case of any difference or discrepancy between specifications and drawing, the specifications shall take precedence. In case of any difference or discrepancy between the specifications for Civil works and specification for Public Health Engg. Works, specifications for Civil works shall take precedence.

6.2 APPROVAL : The materials for P.H. Engineering works which are to be supplied by the contractor shall conform to the relevant IS specifications and the approved vendor list attached alongwith the specification and shall be approved by the Engineer-in-Charge prior to installation of fixture and the approved samples shall be maintained at site till the completion of work. The approved makes of main items re, however specified in the list of approved makes of materials separately.

6.3 PRECAUTIONS: While carrying out pipe line work, in case, the contractor encounters any interference with other services such as cables, conduits etc, he shall take sufficient precautions

in order to prevent any damage to them. If any damage occurs, it shall be rectified to its original condition at his own cost to the satisfaction of the officers concerned with such services and no claim whatsoever shall be entertained in this regards. The contractor shall ensure that all inserts, pipe lines embedded in structural members or sleeves are placed in position in co-ordination with civil work.

All public health engineering services shall be handed over to Engineer-in-charge complete in all respects on completion of the work. Incomplete work will not be taken over. Any loss or damage to these services due to any reasons by anybody whatsoever before handing over will be at contractor's risk and cost. Any damage to any structural/finishing work done during the testing or rectification shall be made good by the contractor at his own cost and risk.

6.4 Rates: The rate shall include cost of all materials and labour involved in all the operation described above.

7.0 PAINTING AND OTHER FINISHING WORKS

7.1 SCOPE

This Specification covers painting, distempering etc. of interior surfaces of masonry, concrete, plaster or as directed by the Engineer.

If the surface to be finished cannot be put in suitable condition for painting by customary preparatory methods, the Contractor shall notify the Engineer in writing or assume responsibility for and rectify and unsatisfactory finishing. Before commencing painting, the Contractor shall obtain the approval of the Engineer in writing regarding the scheduling of work to minimize damage, disfiguration or staining by other trades. He shall also undertake normal precautions to prevent damage, disfiguration or staining to work of other trades or other installations.

7.2 MATERIALS:

Materials shall be of highest-grade **ECO – FRIENDLY PRODUCTS** of well-known approved manufacturer and shall be delivered to the site in original sealed containers, bearing brand name, manufacture's name and colour shade, with label intact and seals unbroken. All materials shall be subject to inspection & approval by the Engineer. It is desired that materials of one manufacturer only shall be used as far as possible and paint of one shade be obtained from the same manufacturing batch. All prime coats shall be compatible to the material of the surface to be finished as well as to the finishing coats to be applied. All unspecified materials such as shellac, turpentine or linseed oil shall be of the highest quality available and shall conform to the reputed recognized manufacturers and shall be approved by the Engineer.

7.3 PAINTS AND OTHER COATINGS:

7.3.1 EMULSION PAINT:

The surface shall be prepared as described herein: - Before taking up painting work, Birla wall care putty shall be applied wherever required to get uniform and smooth surface before application of primer.

7.3.2 Primer: The primer to be used for the painting with acrylic emulsion on cement concrete surfaces, plastered surfaces shall be of approved base with volatile organic compounds less than 250 g/l and as per recommendations of the manufacturers.

7.3.3 Finishing coats: All the finishing coats shall be of matt finish or any other finish as required by the Engineer-in-charge. The number of finishing coats shall be as specified in the item.

7.4 Application:

The primer shall be applied by brushing primer. The surface shall be finished as uniformly as possible leaving no brush marks. Priming coat shall be allowed to dry for at least 48 hours before oil bound distemper is applied. Before applying distemper, the surface shall be lightly sand prepared to make it smooth for receiving the oil bound distemper, taking care not to rub out the priming coat. A time interval of at least 13 hours shall be allowed between consecutive coats to permit the proper drying of the preceding coat. Two coats of distemper paint of approved brand as per specifications shall be applied over the priming coat to obtain an even shade.

7.5 Mode of measurement for interior emulsion paint: All measurement for payment shall be taken on net surface area actually painted unless otherwise specified and no co-efficient shall be applied for working out areas. Deductions will be made from areas for opening/obstructions not painted, if they are individually more than 0.05 sqm. Length and breadth shall be taken correct up to two places of decimal of a meter and areas shall be worked out correct up to two places of decimal of a square meter. Measurements shall be as per the provisions of IS 1200.

7.6 Rates: The rate shall include cost of all materials and labour involved in all the operation described above.

Specification for DRAINAGE, SANITATION AND WATER SUPPLY

1. SCOPE

This section covers the design, layout and construction of drains for the entire plant area for foul water, surface water and sewage together with all fittings and fixtures and inclusive of ancillary works, such as connections, manholes and inspection chambers used within the building and from the building to the connection to Owner's main sewer line manholes stipulated here or elsewhere in these specifications The scope is also inclusive of design supply erection of all the tanks, pipes, fittings etc. required for the water supply to be taken from the terminal point to the respective buildings.

2.0 INSTALLATION

2.1 Surface Drainage

The Contractor shall construct the entire drainage scheme as per the drawings. Necessary slopes shall be provided in longitudinal drain.

2.2 General

All pipelines, locations of fittings and fixture etc. shall be as per approved drawings or as directed by the Consultant. Correctness of lines, plumb, orientation, symmetry and levels shall be strictly ensured. All items shall be fully secured against movement in any direction and so located as to allow maintenance where desired by the Consultant.

All pipelines and fittings fixtures shall be installed leak proof. When the works under scope of this specification connect with others the connections shall be such as to prevent any splashing or emission of foul odour and gases.

3. SOIL AND DRAINAGE : C.I PIPING WORK

3.1 GENERAL : The item includes supplying of C.I soil, waste and ventilation pipes with fittings of specified diameter including laying, fixing, cutting, joining, painting if required etc.

3.2 MATERIAL : The pipes shall conforming to IS code of C.I pipes and fittings shall be free from cracks, flaws and defects and shall be able to withstand a pressure as mentioned in the schedule of work. Rubber sealing rings conforming to IS Code with lubricant for sliding socket joints as mentioned in the schedule of work.

3.4 EXAMINING: Before laying the pipe line, it shall be first examined for damages and cracks, No cracked or damaged pipe and fittings shall be used in the work and they shall be removed from the site by the contractor at his own cost and charge.

3.5 CLEANING : All the pipes and fittings shall be thoroughly cleaned with brush and washed, if necessary to remove any accumulated stone, soil or dirt inside and outside surfaces.

3.6 LAYING : The pipes shall be carefully laid straight to the correct alignment in gradients as indicated in the drawing. The entire pipe shall be used in standard length as far as possible. Cut length may be used only where it is necessary to make up exact length.

The entire length of pipe shall be evenly supported on bed of the trench throughout. Care shall be taken to prevent any sand, earth or other materials from entering into the pipes during laying. At the end of days work the open end shall be suitably plugged.

3.7 FIXING : The pipe line shall be fixed in position as shown in the drawing or as directed by the Engineer-in-charge. The pipe shall be fixed with G.I. clamps not less than 2.0 mm thick of with suitable M.S clamps/clips, The clamps/clips shall be fixed into the wall with S.S fastener and nails not less than 40 mm long and wooden gittes keeping the pipe about 15 mm clear of the wall.

3.8 MAKING JOINT : The jointing of pipes and fittings generally shall be done with approved make cement solvent including making surface rough or rubber sealing rings with lubricant for sliding socket joints . The pipe shall be cut to desired length. Care shall be taken that that profile or cut surfaces shall not be changed and the fibrous material shall be removed with scraper or knife.

3.9 DETACHABLE JOINT: Detachable joints shall be made where pipes of different materials have to be jointed or as specified in the schedule. The flanges are first pushed over the pipe ends and jointing shall be made by cement solvent.

3.10 PAINTING: In case of underground piping, the pipe line shall be painted with two coats of approved oil paint of matching colour over a coat of primer.

3.11 DEWATERING: In case of underground pipes ,the contract rate shall include bailing or pumping out all the water till completion or work if accumulated during the progress of work either from seepage, springs, rain or any other cause.

3.12 TESTING : As per ISO Code.

3.13 THE RATE INCLUDES FOR:

1. Supplying of UPVC-SWR pipes and fittings of specified diameter.

2. Laying and cutting the pipe wherever necessary and wastage,

3. Fixing the pipe line with G.I. clamps not less than 2mm thick and G.I./MS. nails length not less than 40mm or with UPVC clamps, screws, wooden gutties etc.

4. Making the solution joint and painting if mentioned in schedule of work the pipe line.

5. In case of underground pipes, dewatering if necessary till completion of work.

6. All necessary materials, labour and use of tools.

3.14 MODE OF MEASUREMENT: The measurement shall be for unit running meter length of pipe line laid of fixed. The measurement shall be taken along the center line of pipe. No measurement shall be recorded separately for fittings, making joint, painting if mentioned in schedule of work and testing.

3.15 MODE OF PAYMENT: The contract rate shall be for unit running meter length of pipe line laid or fixed.

4.00 Gradients

If not specified the minimum gradients of soil and drainage pipeline shall be as follows

100 mm nominal dia	1 in 35
150 mm nominal dia	1 in 65
230 mm nominal dia	1 in 120
300 mm nominal dia	1 in 200

5.0 Relation with Water Supply Pipeline

Under no circumstances, unless specifically cleared by the Consultant in special cases, drainage and soil pipes shall be allowed to come close to water supply pipelines.

For water pipelines, meticulous care shall be taken to avoid chances of airlock and water hammer. The layout of pipe work shall be such that there is no possibility of backflow towards the source of supply from any cistern appliances whether by siphonage or otherwise. Where desired by the Consultant, pipes shall be concealed in masonry or concrete of the structure. Chases, openings, conduits as necessary shall be cut or left in the masonry or concrete. Clamps and fittings shall be as per the standard practice and approved by the Consultant.

6.0 Support and Protection to Pipelines

All drainage and sewer pipes shall be laid with socket leading uphill. Preferably the pipes shall rest on solid and even foundations for the full length of the barrel. However, the pipe manufacturer's instructions as approved by the Consultant shall be followed in the matter of support and jointing. Pipe line may be supported on suitable concrete or brick support, where specified. The supports shall be unyielding and strong enough. At least one support shall be located close to each joint. Spacing of intermediate supports shall be as desired by Consultant. Pipes shall be secured to the supports by approved means.

Anchoring of pipes where necessary shall be achieved by suitable concrete encasing designed for the expected thrust.

7.0 Entry Into Structures

For entry of the pipelines into any building or structures suitable conduits under the structures, or sleeves shall be used. The conduits and sleeves shall be such as to allow easy repair and replacement of the pipes. When openings or chases are required to be made in the structure for entry of pipelines, locations and sizes shall be marked and checked by the Consultant. After laying of the pipeline the openings and chases shall be mended.

8.0 Traps and Ventilating Pipes

Pipes for carrying of the waste from water closets and waste water and overflow water from baths, wash basins, sinks to drains shall be trapped immediately beneath such fixtures. Traps shall have minimum water seal of 50 mm and shall be ventilated whenever such ventilation is necessary to maintain water seal of the trap. Ventilating pipes shall be carried up vertically from the drain to a height of at least 600 mm above the outer covering of the roof of the building or as shown on drawings. All vertical ventilating, anti-syphonage and similar pipe shall be covered on top with a cowl. The cowl shall be made of C.I.

9.0 Manholes and Inspection Chambers

The maximum distance between manholes shall be 30 meters unless specially permitted otherwise. In addition, at every change of alignment, gradient or diameter there shall be a manhole or inspection chamber. The distance between manhole or inspection chamber and gully chamber shall not exceed 6 meters unless desired otherwise. Manhole shall be constructed so as to be watertight under test. The benching at the sides shall be carried out in such a manner so as to prevent lodgment for any splashing in case of accidental flashing of the chamber. The channel or drain at the bottom of chamber shall be plastered with 1:2 cement sand mortar and finished smooth to the grade. The channels and drains shall be shaped and laid to provide smooth flow.

Connection to existing sewer lines shall be through a manhole. Manholes shall be provided with C.I. standard covers as per IS:1726-1991. The covers shall be close fitting so as to prevent gases from coming out.

10. Jointing

Jointing of laid pipes shall be so planned as to avoid completely any movement or strain to the joints already made. If any joint is suspected to be damaged it shall be opened out and redone.

All joints between pipes, pipe fittings and manholes shall be gastight when above ground and watertight when underground. Method of jointing shall be as per instruction of the pipe and fittings manufacturer and as approved by the Consultant. However in the absence of any instruction available from the manufacturer, methods as detailed hereunder shall be used.

11. Installation

All plumbing fittings and fixtures shall be installed in most workmen like manner by skilled workers. Those shall be prefect in level, plumb, plane, locations and symmetry. All items shall be securely anchored to wall and floors. All cuttings in walls and floors shall be made good by the Contractor.

12. TESTING AND ACCEPTANCE

All pipes, fittings and fixtures shall be inspected, before delivery at the site to see whether they conform to accepted standards. The frequency of testing and sampling shall be as per relevant IS codes. The pipes shall again be inspected on site before laying by sounding to disclose cracks. All defective items shall be clearly marked and forthwith removed from the site.

13. Testing of Pipelines for Drainage & Sanitation

Comprehensive test of all pipe lines shall be made by simulating conditions of use. The method of actual tests shall be decided by the Consultant. All test date shall be recorded and submitted to the Consultant for review and Instruction. The Consultant's discretion regarding tolerance shall be final.

13.1 General guidance for the test is given below: -

13.1 a) Smoke Test

All soil pipes, waste pipes, vent pipes & all other pipes when above ground shall be approved gas tight by a smoke test conducted under a pressure of 25 mm of water and maintained for 15 minutes after all trap seals have been filled with water. The smoke is produced by burning oily waste or tar paper of similar material in the combustion chamber of a smoke machine. Chemical smoke is not allowed.

13.1 b) For Straightness

i) It shall be checked by inserting at the high end of the sewer or drain a smooth ball of a diameter 1.3 mm less than the pipe bore. In the absence of obstruction, such as yarn or mortar projecting through the joints, the ball will roll down the invert of the pipe and emerge at the lower end; and

ii) By means of mirror at one end of the line and lamp at the other end. If the pipeline is straight, the full circle of light may be observed. The mirror will also indicate obstruction in the barrel if the pipeline is not straight.

14. Testing of Water Mains after Laying

After laying and jointing, the main shall be slowly and carefully charged with water, so that all air is expelled from the main, by providing 25 mm inlet with a stop-cock, allowed to stand full of water for a few days if time permits, and then tested under pressure. The test pressure shall be 5 Kg/sqcm. or double the maximum working pressure, whichever is greater. The pressure shall be applied by means of a manually operated test pump, or in the case of long mains or mains of a large diameter by a power driven test pump provided that the pump is not left unattended. In either case due precaution shall be taken to ensure that the required test pressure is not exceeded. Pressure gauges shall be accurate and shall

preferably have been recalibrated before the test. The pump having been stopped, the test pressure shall maintain itself without measurable loss for at least five minutes. The end of the mains shall be closed by fitting a watertight expanding plug and plug shall be secured by struts to resist end thrust of the water pressure in the mains.

15. Testing of Service Pipes and Fittings

The service pipes shall be slowly and carefully charged with water allowing all air to escape avoiding all shock or water hammer.

16. Fixture etc.

All fixtures and fittings shall be connected by watertight joints. No dripping shall be accepted. All fixture will be provided by YWCA atleast the contractor has to informed to the client at least 2 weeks before the installation of toilet fixture.

17. IS CODES

Some of the applicable Indian Standards, Codes are referred to here below:
Latest editions shall always be referred.

	Basic requirements for water supply, drainage and sanitation
IS: 1200 (Part-XVI) (Part-XIX)	 Laying of water and sewer line including appurtenant items. Waters supply, plumbing and drains.
IS: 1239 (Part. I&II)	Mild Steel Tubes and Mild Steel Tubular and other wrought Steel Pipe fittings.
IS : 3589	Electrically welded steel pipe for water, gas and sewage (200 mm to 2000 mm nominal diameter).
IS : 1537	Vertically cast iron pressure pipe for water, gas and sewage.
IS : 1742	Code of practice for building drainage.
IS : 5329	Code of practice for sanitary pipe work above ground for building
IS : 1538	Cast iron fittings for pressure pipes for water, gas and sewage.
IS : 1626	Asbestos cement building pipes, gutters.
IS : 2065	Code of practice for water supply in building.
IS : 1726	Cast iron manhole covers and frames intended for use in drainage works.
IS : 5961	Cast iron gratings for drainage purposes. IS : 5219 (Part - I) 'P' and 'S" traps, cast copper alloy traps
IS : 771	Glazed fire dry sanitary appliances
IS : 772	General requirements of enameled cast iron sanitary appliances

IS : 774	Flushing cistern for water closets and urinals (Valve less Symphonic type)
IS : 775	Cast iron brackets and supports for wash basin and sinks.
IS : 2548	Plastic water closet seats and covers.
IS: 2527	Code of practice for fixing -'rainwater gutters and downpipes for roof drainage.
IS :1068	Chromium plating
	Ball valves including floats for water supply purpose.

18. MINIMUM WEIGHT OF MOST COMMONLY USED SANITARY APPLIANCES & WATER FITINGS:

The minimum unit weight of each fitting shall not be less than as given in the following table and tolerance for weight shall be as per relevant IS code.

S. No.	Description of items	Nominal size/thickness	IS code	Minimum Unit Weight
1	non-fancy type Bib Tap Please see Table under relevant item for other sizes.	15mm	781- 1984	400 Grams
	C.P. brass fancy type Bib Tap	15mm	8931- 1993	550 Grams
3a	Brass non-fancy types Stop cock -Internally threaded	15mm	781- 1984	330 Grams
3b	Brass non-fancy types Stop cock -Externally threaded	15mm	781- 1984	400 Grams
4	C.P. brass fancy types Stop cock	15mm	8931- 1993	550 Grams
5	C.P. brass concealed typed Stop cock	15mm	8931- 1993	750 Grams
6	C.P. brass fancy Pillar Tap	15mm	1795- 1982	650 Grams
7	C.P. brass waste coupling	32mm	3311- 1979	200 Grams
8	C.P. brass waste coupling	40mm	3311- 1979	250 Grams
9 a	Nahani Trap 165mm inlet dia.	75mm(outlet)	1729-2002/ 3989- 1984	6.50 Kg.
9 b	CI. Floor Trap 100 mm inlet dia.	75mm(outlet)	1729-2002/ 3989- 1984	4.80 Kg.
9 c	C.I. Nahani Trap with 20 mm water seal	65mm(outlet)	non ISI	4.50 Kg.
10	Cast I Iron surface box for sluice valve	(rectangular shape)	3950-1979	33 kg.

19. MANDATORY TESTS / OPTIONAL TESTS

19.1 Optional tests specified or any other tests shall be carried out in case of specialized work/ important structure at Engineer In charge's discretion.

19.2 Testing charges including incidental charge and cost of sample for testing shall be borne by the contractors for all mandatory tests.

19.3 In case of non-I.S. materials, it shall be the responsibility of the contractor to establish the conformity of material with relevant ~~I.S.~~ specification by carrying out necessary tests.

19.4 Testing, tolerances, Acceptance and mode of payment

19. 4 a) The materials should pass all tests and tolerance in dimensional, chemical, physical properties should be within the limit as stipulated in relevant I.S. for acceptance. Such materials will be accepted as standard.

19. 4 b) Payments shall be restricted to standard unit mass, or as specified in the schedule, without making any cost adjustment towards mass or any other properties provided the material pass all the tests and tolerance are within the specified limit.

19. 4. c) In case of non-standard materials, materials not covered under any I.S specification, such as aluminum sections, the payment shall be made based on the actual unit weight as determined by testing at random sampling.

19.5 Post construction Inspection and testing:

After completion of work and during the maintenance liability period of contract, the work shall be subjected to "Post construction and testing". In case, if the materials incorporated in the work are found to be inferior, though the sample collected from the materials might have been passed at the time of execution, it shall be the responsibility of the contractor to replace the same without any cost to the department failing which the department may rectify the same at the risk and cost of the contractor or the department may accept the same as sub standard, and cost be adjusted from the outstanding security deposit as per the terms and condition of the contract for the work.