WAPCOS

(A Government of India Undertaking)

Selection of contractor for Repair / Renovation works of Toilet blocks in Boys hostel at Gujarat National Law University Campus

VOLUME I – TECHNICAL PROPOSAL

VOLUME II – SCOPE OF WORK, TECHNICAL SPECIFICATION

VOLUME III – FINANCIAL PROPOSAL

VOLUME IV- DRAWINGS

WAP/GIS/GNR/INFRA/GNLU/2020/02

WAPCOS LIMITED

515, 5th Floor, Shree UGATI Corporate Park Opp. Pratik Mall, Koba-Gandhinagar Road, Kudasan, Dist: Gandhinagar, Gujarat-382421Tele: 079-23600292Tele fax: 079-23600352

Email: gandhinagar@wapcos.co.in

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(A Government of India Undertaking)

Selection of contractor for Repair / Renovation works of Toilet blocks in Boys hostel at Gujarat National Law University Campus

VOLUME I – TECHNICAL PROPOSAL

WAPCOS LIMITED
515, 5th Floor, Shree UGATI Corporate Park Opp. Pratik Mall, Koba-Gandhinagar Road, Kudasan, Dist: Gandhinagar, Gujarat-382421Tele: 079-23600292Tele fax: 079-23600352
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Table of Content

NOTICE INVITING TENDER (NIT)

VOLUME-INOTICE INVITING TENDER (NIT)

NIT No. **Dated:**

Gujarat National Law University (GNLU) is the statutory university established by the Govt. of Gujarat under the Gujarat National Law University Act, 2003. The University is recognized by the Bar Council of India (BCI) and the University Grants Commission (UGC) (2f & 12B) has appointed WAPCOS Limited, for various Engineering, procurement & construction works Under Gujarat National Law University. WAPCOS Limited, on behalf of Gujarat National Law University (GNLU) invites Online Electronic Tenders from experienced and competent bidders, meeting the prescribed qualifying criteria as mentioned in tender document.

1.	Name of Work:	**:**	Selection of contractor for Repair / Renovation works of Toilet blocks in boy's hostel at Gujarat National Law University.
2.	Location	:	Gujarat National Law University (GNLU), Gandhinagar Gujarat
3.	Website for viewing tender/ Corrigendum/ Addendum	:	www.eprocure.gov.in, www.wapcos.co.in, https://gnlu.ac.in/GNLU/Tender
4.	Website for Procurement/ downloading and uploading Tender document/ Corrigendum/ Addendum		https://www.mstcecommerce.com/eprochome/wapcos
5.	Estimated Cost of Work	:	Rs. 94,85,573 /- (Rupees Ninety Four lacs Eighty five Thousand Five Hundred seventy three Only)
6.	Tender submission fee	:	Rs. 5,000/-(Non-refundable) in form of Demand Draft in favour of WAPCOS Limited payable at Gandhinagar
7.	Amount of Earnest Money Deposit (Non- Interest Bearing)	:	Rs. 1,90,000/-(Refundable) in the form of Demand Draft/ FDR in favour of WAPCOS Limited payable at Gandhinagar
8.	Site Visit		Contractor may visit the project site for his satisfaction before submitting the bid
9.	Project Duration	:	6 Months
10.	Validity of Bid/Tender	:	120 Days
11.	Last date & time of Procurement/ download of tender document	:	30.06.2020 up to 11:00 hours The bidder must officially procure/download the tender documents from the MSTC portal of

			WAPCOS before the last date and time of sale of tender document in order to bid.
12.	Last date & time for online submission of Technical & Financial Bid.	:	30.06.2020 up to 13:00 hours
13.	Joint Venture	:	Not Allowed
14.	Defect Liability Period	:	1 Year
15.	Warranty Period of product supplied	:	5 years
16.	Commencement of Work	:	After Signing of Contract Agreement and as per date mentioned in Letter of Commencement.
17.	Pre Bid Meeting	:	No pre bid meeting. Bidders have to send their queries to wapcosgandhinagar@yahoo.co.in
18.	Last Date of Receipt of pre-bid queries on email	:	7 days prior to Bid submission date
18.	Offline Submission of Tender Fees, EMD etc. as detail in Tender (Physical Submission)	:	30.06.2020 up to 15:00 hours at; Bidders must submit the Technical Bid, Tender Fees & EMD in separate Envelopes as per clause 4 & Financial Bid to be submitted online only. WAPCOS Limited (515, 5th Floor, Shree UGATI Corporate Park, Opp. Pratik Mall, Koba-Gandhinagar Road, Kudasan, Dist: Gandhinagar, Gujarat-382421)
19.	Online opening of Technical Bid	:	30.06.2020 at 15:30 hours
20.	Online opening of Financial Bid	:	Will be intimated to Eligible Bidders
21	WAPCOS Contact Information	:	Kaoustubh Tiwari (Sr. Eng), Kartik Mehta (Eng) WAPCOS Limited Tele: 079-23600292 E-mail: wapcosgandhinagar@yahoo.co.in
22	Tender Inviting Authority	:	Regional Project Director (Western Region) WAPCOS Limited 515, 5th Floor, Shree UGATI Corporate Park Opp. Pratik Mall, Koba-Gandhinagar Road, Kudasan, Dist: Gandhinagar, Gujarat-382421 Tele: 079-23600292,Tele fax: 079-23600352 E-mail: gandhinagar@wapcos.co.in
Exemption in EMD & Tender Fee for Micro & Small Enterprises registered with NSIC/MSME: The micro and small enterprises registered with the NSIC/MSME are exempted from the submission of EMD/ Bid security deposit & Tender Fee on production of requisite proof in the form of valid certification from NSIC/MSME for the tendered item/services.			

Udyog Aadhaar Memorandum are also entitled for the above exemption for which submission of valid memorandum certificate is must.
If the office of WAPCOS Limited happens to be closed on the last date and time mentioned for any of the event, the said event will take place on the next working day at the same time and venue.

- The tender document has to be downloaded from above specified websites. Bidders are advised to visit above specified websites regularly for updates/Amendments/ Corrigendum, if any. The Updates/Corrigendum/Addendum to be followed up till submission of tender and it will be a part of the tender. The full details about the work, specifications, Drawings, terms and conditions shall be available in the Tender Document. The tender document has to be submitted online on websites https://www.mstcecommerce.com/eprochome/wapcos.
- The purpose of this NIT is to provide interested parties with information to assist the preparation of their bid. While WAPCOS Limited has taken due care in the preparation of the information contained herein, and believe it to be complete and accurate, neither it nor any of its authorities or agencies nor any of its respective officers, employees, agents or advisors give any warranty or make any representations, expressed or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in association with it.
- Further, WAPCOS Limited does not claim that the information is exhaustive. Respondents to this NIT are required to make their own inquiries/ surveys and will be required to confirm, in writing, that they have done so and they did not rely solely on the information in NIT. WAPCOS Limited is not responsible if no due diligence is performed by the bidders.

List of works

Sl.no.	Name of work
1	Repair / Renovation works of Toilet Blocks – 8 nos. of blocks in boys hostel

The Scope of work & technical specification of individual works shall mentioned in Section VII & Section VIII under Volume- II.

IMPORTANT POINTS

1.1 The bidder should be an Indian Registered Company under Companies Act 1956 or 2013, Proprietorship Company/ Partnership Company/ Limited company private or public or corporation.

1.2 All Bidders are hereby cautioned that Bids containing any deviation or reservation as described in Clauses of “Instructions to Bidders” shall be considered as non-responsive and shall be summarily rejected.

1.3 The above List of Works is preliminary; the Contractor has to quote its rate against each individual work. However, the Engineer-In-Charge may exclude any work from the above list while issuing the Work order**.**

1.4 WAPCOS Ltd. reserves the right to accept or reject any or all bids without assigning any reasons. No Bidder shall have any cause of action or claim against the WAPCOS Ltd. For rejection of his Bid and will not be bound to accept the lowest or any other tender.

1.5 No reimbursement of cost of any type or on any account will be paid to persons or entities submitting their Bid.

1.6 All information submitted in response to this NIT shall be the property of WAPCOS Limited and it shall be free to use the concept of the same at its will.

1.7 It is hereby declared that WAPCOS is committed to follow the principle of transparency, equity and competitiveness in public procurement. The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the **Bidder will submit the Integrity Pact, which is an integral part of tender/bid documents**, failing which the tenderer/bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected. The Integrity Pact shall form part and parcel of the Bid and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the WAPCOS.

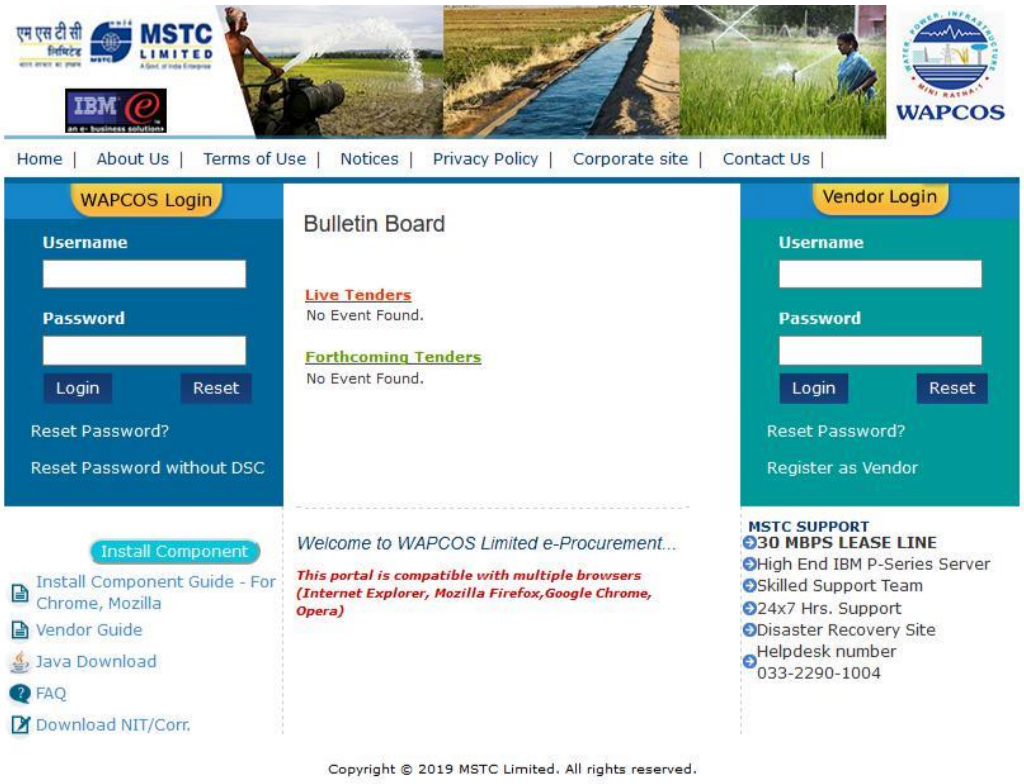
For and on behalf of WAPCOS LIMITED

Regional Project Director(Western Region)

SECTION– I: INSTRUCTIONS TO BIDDER

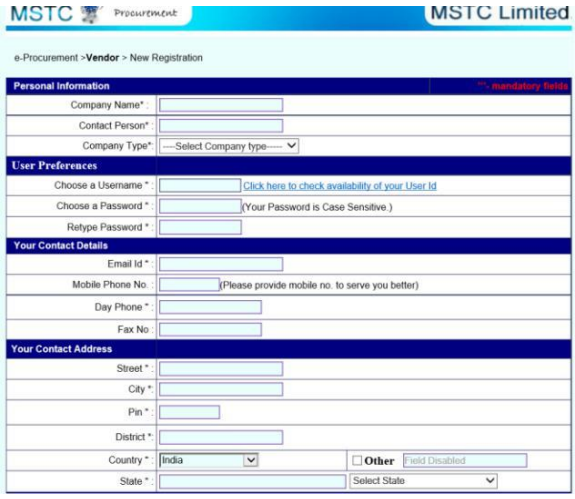
1.0 BIDDER'S GUIDE FOR MSTC-WAPCOS PORTAL

1. Use Internet Explorer to go to https://www.mstcecommerce.com/eprochome/wapcos



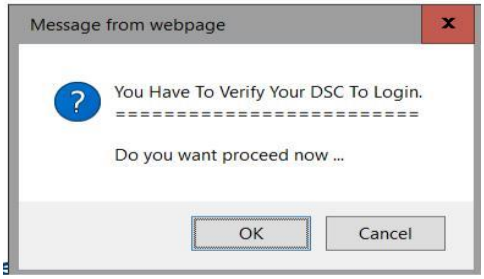
2. On the right side of the page click on Register as a Vendor:

3. Fill the form that appears to create username and password.

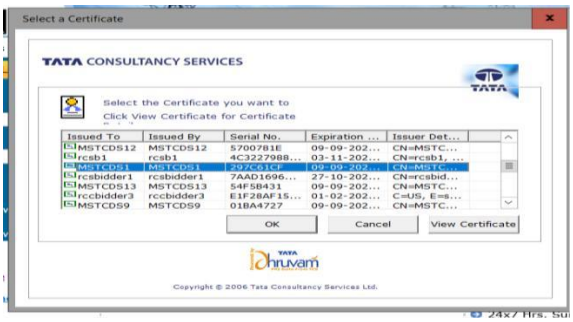


4. Once the registration is done, login with your user name and password:

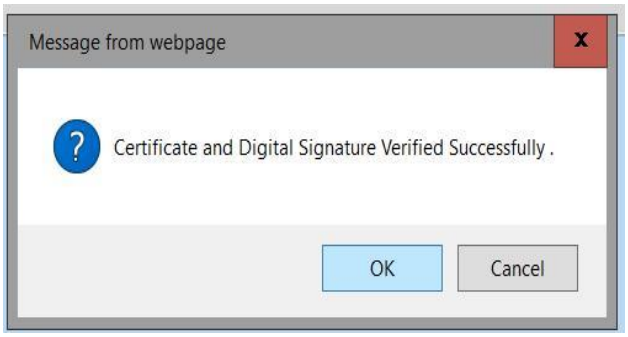
5. System will ask you to verify your digital signature



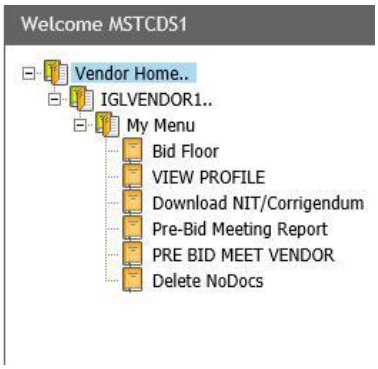
6. Press Ok and select your digital signature from the List:



7. Your digital signature will be verified



8. Once login is complete, a bidder can access My Menu through the left side of the page:

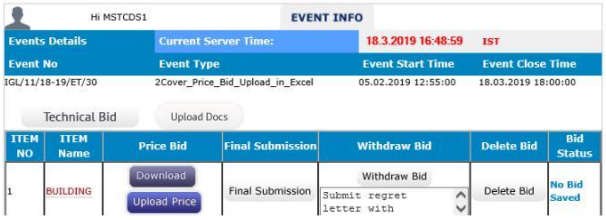


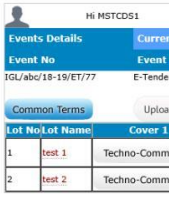
9. Here click on Download NIT/Corrigendum button to download the NIT/Corrigendum. Select Event number and click on download to download the files:

10. To submit the bid a bidder can proceed to Bid Floor through the left side My menu. In Bid Floor click on live events to view a list of Live events. In live events select the tender number where you wish to submit a bid.

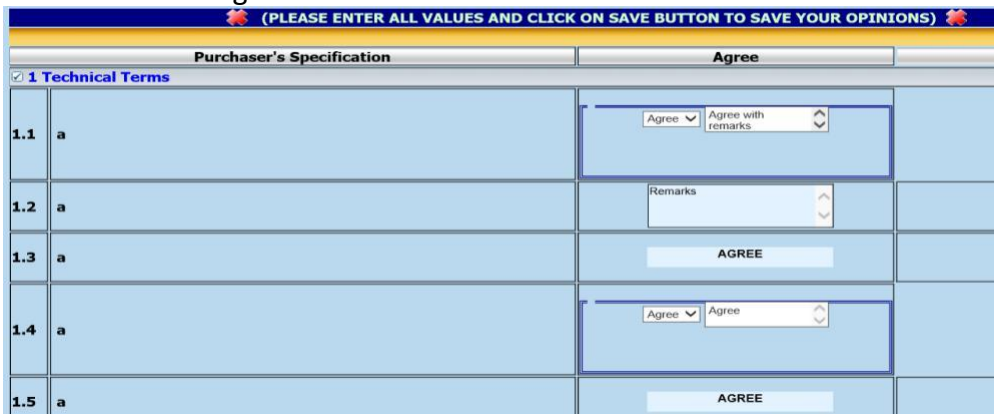
11. On clicking the event number, if the bidder has not paid transaction fee, system will prompt them to pay the transaction fee. They can pay the transaction fee by going to Transaction Fee payment link in their login, and pay the same through online payment (debit card, credit card, net banking etc) or RTGS/NEFT (Challan).

12. Tender can be of multiple types with price bid uploading in Excel or Technical-Price type. The bid floor for each type of event will change automatically. On clicking the tender number one of the following screens will appear: For 2 cover with price bid in excel E-Tender Technical Cum Price Bid

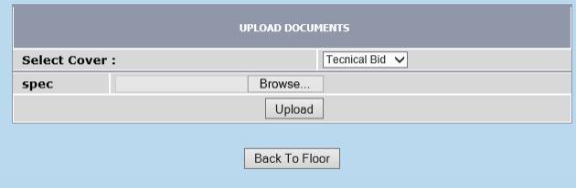




13. For each type of event the event details including start time and close time the details will be given on the top of the page.
14. To submit the tender, the bidder has to start from top left and submit the details one by one.
15. For 2 cover with price bid in excel, the bidder has to submit technical bid, by filling the details and clicking the save button.



a) After the technical bid is saved, a bidder can proceed to uploading documents through the link upload docs:

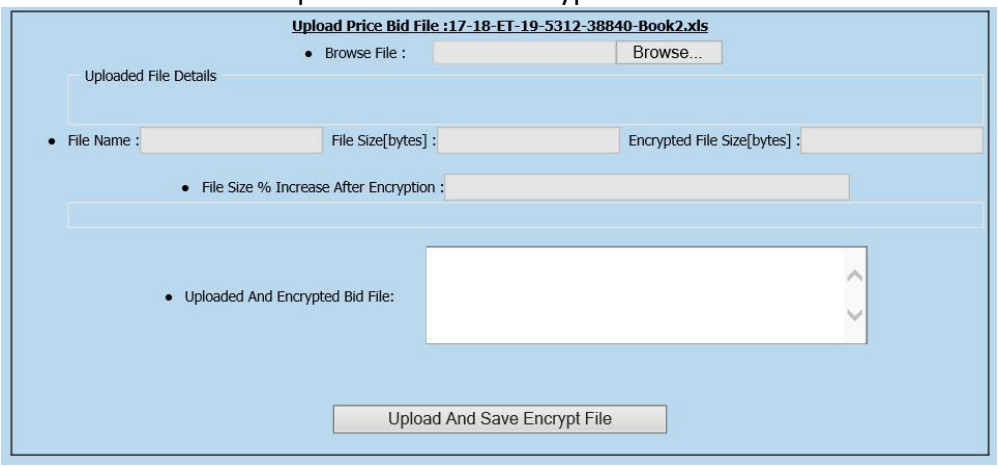


b) Please note that under no circumstance the price bid excel has to be uploaded here.

c) After the documents have been uploaded, the bidder can click on download excel to download the excel format.

d) Fill up the excel sheet as per the details given therein and tender document.

e) To upload the filled up excel click on Upload Price Button, click on browse to select the file and then click on Upload and Save encrypt file.



f) The bidder can then click on final submit to finally submit the bid. In case of any amendments after final submit, click on delete bid button to delete the techno-

commercial and price bids and resubmit the same. Please note that at the end the bid must be final submit, otherwise the same will not be considered.

16. For E-Tender Technical Cum Price Bid:

    a. In the manner similar to above the bidder has to fill up Common terms, then press save button to submit.
    b. Then the bidder has to upload documents as per the list shown therein.
    c. Once the documents are uploaded the bidder has to submit the Technical and Price bids.
    d. The bidder can then click on final submit to finally submit the bid. In case of any amendments after final submit, click on delete bid button to delete the techno-commercial and price bids and resubmit the same. **Please note that at the end thebid must be final submit, otherwise the same will not be considered.**

Bidder's may note that in each case using the Delete bid button will only delete the bids and then the bidder can resubmit upload tender closing time.

Using the withdraw button the bid will be withdrawn and the bidder will not be allowed to submit any further bid in that event.

For any assistance regarding the Tender Document and/or term and conditions the bidders may contact WAPCOS:

For any assistance during bid submission, system settings etc. bidders may contact MSTC:

Phone Number **03322901004, 01123212357, 01123215163, 01123217850** **Email** mstcnro@mstcindia.co.in Please mention "Helpdesk" as subject while sending emails **Availability** 10 AM to 5:30 PM on all working days.

BID SUBMISSION

The entire bid-submission would be online on ETS. Broad outline of submissions are as follows:

- Technical Bid (Volume-I of tender document and Volume-II Scope of Work & Technical Specifications)
- Financial bid (volume-III of tender document)

2.0 INSTRUCTIONS TO BIDDER

The purpose of these instructions to serve as a guide to Bidders for preparing offer for carrying out the project in all respect.

a) Submission of a tender by a tenderer implies that the tenderer has read this notice and all other Tender Documents and has made himself aware of the scope, the specifications, conditions of contract, local conditions and other factors having bearings on the execution of the work.
b) WAPCOS Limited desires that the bidders, suppliers, and Sub-contractors under the Project, observe the highest standard of ethics during the performance, procurement and execution of such contracts. In pursuance of this requirement, WAPCOS Limited:

Defines, for the purposes of this provision, the terms set forth below:

i. "Corrupt Practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;
ii. "Fraudulent Practice" means any act of submission of forged documentation, or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation, or to succeed in a competitive bidding process;

iii. "Coercive Practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

iv. "Collusive Practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party.

Will reject the award of Contract, even at a later stage, if it determines that the bidder recommended/ selected for award/awarded has, directly or through an agent, engaged in Corrupt, Fraudulent, Collusive, Or Coercive Practices in competing for the Contract;

Will sanction a party or its successors, including declaring ineligible, either indefinitely or for a stated period of time, to participate in any further bidding/procurement proceedings under the Project, if it at any time determines that the party has, directly or through an agent, engaged in Corrupt, Fraudulent, Collusive, Or Coercive Practices in competing for, or in executing, the contract; and

The party may be required to sign an Integrity Pact, if required; and WAPCOS Limited will have the right to require the bidders, or its suppliers, contractors and consultants to permit WAPCOS Limited to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by WAPCOS Limited at the cost of the bidders.

The Bidder must obtain for himself on his own responsibility and at his own expenses all the information which may be necessary for the purpose of making a bid and for entering into a contract, must examine the Drawings, must inspect the sites of the work, acquaint himself with all local conditions, means of access to the work, nature of the work and all matters pertaining thereto. WAPCOS Limited will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

c) The Contract shall be governed by each SECTION OF TENDER DOCUMENT i.e. instructions to bidders, selection & qualifying criteria, scope of works, General Conditions for Contract (GCC), Special Conditions for Contract (SCC), Annexures, Forms, Drawings, Technical Specification, Addendum / Clarification / Corrigendum etc. and all other Conditions mentioned in the tender documents.

d) All Bidders are hereby explicitly informed that conditional offers or offers with deviations from the Conditions of Contract, the bids not meeting the minimum eligibility criteria, Technical Bids not accompanied with EMD and Tender Document Fees of requisite amount in acceptable format, Bids in altered/modified formats, or in deviation with any other requirements stipulated in the tender documents are liable to be rejected.

e) The bidders shall not tamper or modify any part of the tender documents in any manner. In case in part of the bid is found to be tampered or modified at any stage, the bids are liable

to be rejected, the contract is liable to be terminated and the full earnest deposit/retention money/performance guarantee will be forfeited and the bidder will be liable to be banned from doing any business with WAPCOS Limited.

f) Incomplete Price bid shall be liable to be rejected, at the discretion of WAPCOS Limited. The total bid price shall cover the entire scope of works covered in the tender.

3.0 EARNEST MONEY DEPOSIT (EMD)

i. The Earnest Money Deposit as mentioned in NIT and shall be submitted in physical form in favor of WAPCOS Ltd payable at Gandhinagar.

The earnest money may be accepted only in the following forms:

- Demand Draft/ FDR of a Scheduled Commercial/ Nationalized Bank.
- Should be valid for 45 days beyond the bid validity period

The EMD of unsuccessful tenderer(s) except lowest three shall be refunded after finalization of tender process. WAPCOS Limited shall retain the Earnest Money deposit submitted by the successful tenderer until the tenderer submits the Performance Bank Guarantee (PBG). The successful Tenderer shall accept the LOAwithin 14 days from receipt of the same, failing which the EMD shall be forfeited and the work shall be awarded to the secondLowest qualified bidder as per merits, as per the sole discretion of WAPCOS, whose decision shall be binding and final. The EMD of second& Third Lowest Bidder shall be refunded on successful signing of contract Agreement by the tenderer.

If any tenderer withdraws or make any changes in his offer already submitted before the expiry of the above validity period or any extension thereof without the written consent of the company, the EMD amount shall be forfeited for such act of the tenderer.

WAPCOS Limited reserves the right of forfeiture of Earnest Money deposit (EMD) in case of the successful tenderer.

i. After opening of Tender, revokes his tender within the validity period or increases his earlier quoted rates.
ii. Does not commence the work within the period as per LOA/Contract. In case, the LOA/Contract is silent in this regard then within 14days after Letter of Commencement.
iii. Non-submission of PBG within 14 days of receipt of LOA.
iv. EMD shall not carry any interest.

4.0 COST OF BIDDING

The Bidder shall bear all costs associated with the preparation and submission of the Bid as well as costs associated for facilitating the evaluation. WAPCOS Limited shall in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

5.0 LANGUAGE OF BID

The Bid and all related correspondence and documents relating to the Project shall be in English language only. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate English translation, which shall be certified by a qualified translator. Any material that is submitted in a language other than English and which is not accompanied by an accurate English translation will not be considered.

6.0 CURRENCY OF BID

Bid prices shall be quoted in Indian Rupees.

Tender submitted by tenderer shall remain valid for acceptance as mentioned in NIT from the date set for submission of the tender. The tenderer shall not be entitled within the said period to revoke or cancel or vary the tender given or any item thereof, without the consent of WAPCOS Limited. In case tenderer revokes, cancels, or varies his tender in any manner without the consent of WAPCOS Limited, within this period, his earnest money shall be forfeited.

7.0 ANNEXURES

The successful Bidder shall submit the following formats and follow the guidelines as per "**Section of Annexures"** mentioned in tender document.

ANNEXURE – I	:	Guarantee to be executed by the contractor for removal of defects after completion in respect of water supply and sanitary installations
ANNEXURE – II	:	Guarantee bond to be executed by the contractor for water proofing treatment for toilets
ANNEXURE - III	:	Bank Guarantee format for EMD (not applicable)
ANNEXURE - IV	:	Form of Performance Security
ANNEXURE - V	:	Format for Affidavit
ANNEXURE - VI	:	Form of advance payment guarantee
ANNEXURE - VII	:	Form of Integrity Pact
ANNEXURE – VIII	:	Format of resume of proposed personnel
ANNEXURE – IX	:	Acceptable makes of materials
ANNEXURE- X	:	Safety Codes
ANNEXURE- XI	:	Model Rules for the protection of health and sanitary arrangements for workers employed by contractors

WAPCOS Limited reserves the right to reject any or all the bids or to cancel the Tender, without assigning any reason(s) whatsoever.

For & on behalf of Tenderer

APPENDIX-I

BANK GUARANTEE FORMAT FOR EMD(not applicable)

WHEREAS, M/s ……having their Registered / Head Office at …… (hereinafter called "the Bidder") has submitted his Bid dated …… for the …… [hereinafter called "the Bid"] to M/s WAPCOS Limited (hereinafter called the Employer)

KNOW ALL PEOPLE by these presents that we …… (name of the Bank) having our head office at …… (hereinafter called "the Bank") are bound unto Employer in the sum of …… for which payment well and truly to be made to the Employer, the Bank binds itself, its successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this …… day of …… 2019.

THE CONDITIONS of this obligation are:

1) If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified; OR
2) If the Bidder having been notified of the acceptance of his bid by …… during the period of Bid Validity:

We undertake to pay to the …… up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Bidder will note that the amount claimed by him is due to him owing to the occurrence of one or any of the above mentioned two conditions and specify the occurred condition or conditions.

SECTION– II: SELECTION AND QUALIFYING CRITERIA

1.0 SITE VISIT

Intending Bidder(s) have to visit site to inspect and examine the site at his own cost and its surroundings and satisfy themselves before submitting their bids as to the nature of the work and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder(s) shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidder(s) shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder(s) implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

Bidders are encouraged to visit the siteto understand the actual scope of work/ site condition.

2.0GEOTECHNICAL & TOPOGRAPHICAL SURVEY(if required)

The Geotechnical & Topographical Survey may be required to understand the site better. No reimbursement other than the quoted cost shall be reimbursed to the bidder. However, on own interest bidders may conduct the necessary survey for better understanding of the site before submission of bids.

The Successful Tenderer shall confirm the sizes of each component by their own design and shall submit the same to WAPCOS for approval before construction. No extra claim shall be entertained by WAPCOS for increase in size of units by the Successful Tenderer.

3.0QUALIFYING CRITERIA: ONLINE TECHNICAL BID SUBMISSION

The intending bidders must read the terms & conditions of tender documents carefully. He should only submit his technical bid if he considers himself eligible and he is in possession of all the documents required.

The Technical Bid shall be uploaded **with *colored scanned* copies of following documents. All the documents must be Serial wise as stated below along with check list.**

FORMAT OF CHECK LIST

Sr. No.	Particular of Document	Yes	No	Page Nos. (from – to)
1.	Original Authorization Letter to sign the Tender.			
2.	Scanned copy of EMD			
3.	Scanned copy of Demand Draft(for Tender Fee)			
4.	Letter of Transmittal on bidder letter Head to submit Technical Bid.			
Eligibility criteria				
5.	Yearly sales Turnover and Audited Balance Sheet for Last 3 (three) years, including Profit & Loss Statement sending on the financial year 2018-19. (Form-A)			
6.	The contractor should not have incurred any loss (profit after tax should be positive) in more than two years during last five years ending 2018-19, duly audited by the Chartered Accountant.			
7.	Turnover: Average annual financial turnover of the bidder should be at least 50% of the estimated cost of work during the immediate last 3 consecutive financial years ending 2018-19. This should be duly audited by the Chartered Accountant.			
8.	Full Balance Sheet and Profit & loss Statement of Bidder should be verified by Independent Chartered Accountant.			
9.	The bidder should also have satisfactorily completed the works as mentioned below during the last seven years ending previous day of last date of submission of tender. i) One similar completed work costing not less than 80% of the estimated cost of work. Or ii) Two similar completed works of order value each not less than 50% of the estimated			

Sr. No.	Particular of Document	Yes	No	Page Nos. (from – to)
	cost of work. Or iii) Three similar completed works of order value not less than 40% of the estimated cost of work. "Similar work" means construction of building toilet block or repair / renovation of toilet blocks, directly executed for Central / State / PSU's. **(Completion certificate needs to be enclosed)**			
10.	The bidder should not be insolvent, in receivership, bankrupt or being wound up, not have had their business activities suspended. Accordingly, Bidder shall submit Solvency certificate with details of Financial Status i.e. Name of the Banker & Current Solvency Certificate (i.e the solvency certificate shall be dated after the date of publication) from the Banker in original for a sum of at least **40% of the estimated cost of work**. (Form-B)			
11.	Name, Address, details of the Organization, Name(s) of the Owner/Partners/Promoters and Directors of the firm / company. (Form-C)			
12.	Copy of P.F and PAN Number.			
13.	Goods and Service Tax (GST): Bidders are advised to get themselves registered for GST in at different place, which are mandatory, as per Govt. of India notification regarding GST. Accordingly, bidder shall submit relevant documents if already registered. If not registered till date of submission of bid, bidder will give undertaking on bidder letter head stating that they will get registered in GST as per Govt. norms before submission of bills.			
14.	The bidder should be an Indian Registered Company under Companies Act 1956/ Proprietorship Company/ Partnership Company/			

Sr. No.	Particular of Document	Yes	No	Page Nos. (from – to)
	Limited company private or public or corporation. **Joint Ventures are not accepted.** Copy of Certificate of Incorporation/Registration/Partnership Deed or any other relevant document, as applicable, should be submitted along with a copy of address proof.			
15.	Bidder should not be blacklisted/ debarred by any government/ semi government department/ PSU. Bidder should submit the declaration(Form-D) of not being ineligible for corrupt or fraudulent practices			
16.	Letter of understanding the project site on bidder letter Head (Form-E).			
17.	'No Deviation Certificate' in prescribed format in Bidder's Letter Head (Form-F).			
18.	Consent Letter to execute the Integrity Pact (Form-G).			
19.	Information of Key Technical Representatives who is going to associate with the Project (Annexure-VIII).			
20.	Details of the Equipment's /Machinery owned /hired by the Bidder for the Project(Form-I).			
21.	BID Capacity: The Bidder who interalia meet the minimum qualification criteria will be qualified only if their available Bid Capacity is more than the Total Tendered Value. The available BidCapacity will be calculated as per following based on information mentioned enclosed in the Bid Format for Bid Capacity. Assessed available Bid Capacity =(A*N*2-B), Where N= Number of years prescribed for completion of work for which Bid is invited			

<table>
<tr><th>Sr. No.</th><th>Particular of Document</th><th>Yes</th><th>No</th><th>Page Nos. (from – to)</th></tr>
<tr><td></td><td>A= Maximum value of civil engineering works in respect of projects executed in any one year during the last five years (updated to the price level of the year indicated in table below under note) taking into account the completed as well as works in progress. The Projects include turnkey project/item rate contract/ Construction works.

B = Value (updated to the price level of the year indicated in table below under note) of existing commitments and on-going works to be completed during the period of completion of the works for which BID is invited.

Note-1: The Statement showing the value of all existing commitments and ongoing works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Client or its Engineer in-charge not below the rank of Executive Engineer or equivalent in respect of Projects

(Annexure XIII).

<table><tr><td>Year</td><td>Year 1</td><td>Year 2</td><td>Year 3</td><td>Year 4</td><td>Year 5</td></tr><tr><td>Updation Factor</td><td>1</td><td>1.05</td><td>1.10</td><td>1.15</td><td>1.20</td></tr></table></td><td></td><td></td><td></td></tr>
<tr><td>22.</td><td>Bidder shall submit Information on litigation history, liquidated damages, disqualification etc. in bidder Letter Head.</td><td></td><td></td><td></td></tr>
<tr><td>23.</td><td>Each page of the all Volume of Tender document & Addendum/ Corrigendum shall be Digitally signed (use scanned signature) by the bidders submitting the Tender in token of his/their having acquainted himself/ themselves and accepted the entire tender documents including various conditions of contract. Any Bid with any of the Documents not so signed is liable to be rejected at the discretion of WAPCOS</td><td></td><td></td><td></td></tr>
</table>

Sr. No.	Particular of Document	Yes	No	Page Nos. (from – to)
	Limited.			
24.	Preliminary agreement in stamp paper worth Rs.300/- duly signed by authored signatory and the scanned copy to be uploaded (form- H) on award of contract.			

No information relating to financial terms of services should be included in the technical bid. Bids are to be submitted to determine that the bidder has a full comprehension of the tendered work. Where a bidder technical submittal is found non - compliant with the requirement or work, it may be rejected. This process is to assure that only technical acceptable bids are considered for the tendered work.

Evaluation Criteria

The bidder will be technically qualified based on above mentioned Eligibility Criteria's. The financial Bid of only those Bidders who are technically qualified shall be opened. The Bid shall be evaluated on Least Cost Basis (LCS).

4.0 OFFLINE SUBMISSIONS OF DOCUMENTS (PHYSCIAL SUBMISSION)

The Bidder shall submit following Document offline also.

1) **All the documents in ORIGINAL, mentioned in "Section-II: Selection and Qualifying Criteria" in Para 3: Qualifying Criteria for Technical Bid i.e. at Sr. No. (1) to (24) along with checklist & page numbering** in separate sealed envelope clearly labelled as "TECHNICAL BID" for the Work (Write Name of Work/Project as mentioned in NIT) along with Details of Bidders Address, Phone, E-mail on Envelope.
2) **Originals EMD and Tender submission fees**in separate sealed envelope clearly labelled as "EMD AND TENDER FEE" for the Work (Write Name of Work/Project as mentioned in NIT) along with Details of Bidders Address, Phone, E-mail on Envelope.

NOTE: The offline submissions as mentioned above shall be submitted on WAPCOS address mentioned in NIT as per date & time mentioned in NIT otherwise bids are liable to be rejected.

5.0 CONTENTS OF FINANCIAL BID

The Financial Bid shall be uploaded online only before last date & time of submission of Tender Document along with Technical bid.

The estimated cost mentioned in NIT is based on the rates of item of works in R& B & GWSSB Schedule of Rates and Non-SOR items on market rate. The quoted rate filled in Schedule of

Quantities, should include all associated costs with the project including any out of pocket / mobilization expenses, TDS, taxes including GST if any applicable as per Govt. terms, shall be paid by the Contractor.

It is mandatory to bidders to deposit GST within time limit framed by Govt. of India, if applicable. The Goods and Services Tax (GST), shall only be paid to the Agency on submission of proof of deposition of GST.

The company shall be performing all its duties of deduction of TDS and other deduction on payment made to the contractor as per applicable legislation.

The tenderer shall quote rates up to zero decimal and as well as in words. In case of any discrepancy rate quoted in words shall prevail.

The payment will be made as per the Price schedule and Terms of Payment

6.0 OPENING OF FINANCIAL BID

The financial bids of the technically qualified bidders shall be opened at the notified date & time mentioned in NIT. Technically qualified bidders may send their representative at the time of opening.

The company reserves the right to waive minor deviations if they do not materially affect the capability of the Tenderer to perform the contract.

For & on behalf of Tenderer

(Signature)

SECTION– III: GENERAL CONDITIONS TO CONTRACT

1.0 GENERAL RULES AND DIRECTIONS

1) The work proposed for execution by contract will be notified in a form of invitation to tender by publication in Newspapers and / or posted on website as the case may be.
   This form will state the work to be carried out, as well as the date for submitting and opening tenders and the time allowed for carrying out the work, also the amount of earnest money to be deposited with the tender, and the amount of the security deposit and Performance guarantee to be deposited by the successful tenderer and the percentage, if any, to be deducted from bills.
2) In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must be signed on his behalf by a person holding a Power of Attorney authorizing him to do so, such power of attorney to be produced with the tender, and it must disclose that the firm is duly registered under the Indian Partnership Act, 1952.
3) Receipts for payment made on account of work, when executed by a firm, must also be signed by all the partners, except where contractors are described in their tender as a firm, in which case the receipts must be signed in the name of the firm by one of the partners, or by some other person having due authority to give effectual receipts for the firm.
4) The rate(s) must be quoted in decimal coinage. Amounts must be quoted in full rupees by ignoring fifty paisa and considering more than fifty paisa as rupee one.In case the lowest tendered amount (worked out on the basis of quoted rate of Individual items) of two or more contractors is same, then such lowest contractors may be asked to submit sealed revised offer quoting rate of each item of the schedule of quantity for all sub sections/sub heads as the case may be, but the revised quoted rate of each item of schedule of quantity for all sub sections/sub heads should not be higher than their respective original rate quoted already at the time of submission of tender. The lowest tender shall be decided on the basis of revised offer.
   If the revised tendered amount (worked out on the basis of quoted rate of individual items) of two or more contractors received in revised offer is again found to be equal, then the lowest tender, among such contractors, shall be decided by draw of lots and the lowest contractors those have quoted equal amount of their tenders.
   In case of any such lowest contractor in his revised offer quotes rate of any item more than their respective original rate quoted already at the time of submission of tender, then such revised offer shall be treated invalid. Such case of revised offer of the lowest contractor shall be treated as withdrawal of his tender before acceptance and 100 % of his earnest money shall be forfeited.

5) The designated committee will open tenders in the presence of any intending contractors who may be present at the time, and will enter the amounts of the several tenders in a comparative statement in a suitable form. In the event of a tender being accepted, a receipt for the earnest money shall thereupon be given to the contractor who shall thereupon for the purpose of identification sign copies of the specifications and other documents. In the event of a tender being rejected, the earnest money shall thereupon be returned to the contractor remitting the same, without any interest.
6) WAPCOS shall have the right of rejecting all or any of the tenders and will not be bound to accept the lowest or any other tender
7) The receipt of an accountant or clerk for any money paid by the contractor will not be considered as any acknowledgment or payment to the officer inviting tender and the contractor shall be responsible for seeing that he procures a receipt signed by the officer inviting tender or a duly authorized Cashier.
8) The memorandum of work tendered for and the schedule of materials to be supplied by the WAPCOS and their issue-rates, shall be filled and completed in the office of the officer inviting tender before the tender form is issued. If a form is issued to an intending tenderer without having been so filled in and incomplete, he shall request the officer to have this done before he completes and delivers his tender.
9) The tenderers shall sign a declaration under the officials Secret Act 1923, for maintaining secrecy of the tender documents drawings or other records connected with the work given to them.
10) In the case of Item Rate Tenders, only rates quoted shall be considered. Any tender containing percentage below/above the rates quoted is liable to be rejected. Rates quoted by the contractor in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates written in figures and words. However, if a discrepancy is found, the rates which correspond with the amount worked out by the contractor shall unless otherwise proved be taken as correct. If the amount of an item is not worked out by the contractor or it does not correspond with the rates written either in figures or in words, then the rates quoted by the contractor in words shall be taken as correct. Where the rates quoted by the contractor in figures and in words tally, but the amount is not worked out correctly, the rates quoted by the contractor will unless otherwise proved be taken as correct and not the amount. In event no rate has been quoted for any item(s), leaving space both in figure(s), word(s), and amount blank, it will be presumed that the contractor has included the cost of this/these item(s) in other items and rate for such item(s) will be considered as zero and work will be required to be executed accordingly.
11) In the case of any tender where unit rate of any item/items appear unrealistic, such tender will be considered as unbalanced and in case the tenderer is unable to provide satisfactory explanation, such a tender is liable to be disqualified and rejected.
12) All rates shall be quoted on the tender form. The amount for each item should be worked out and requisite totals given. Special care should be taken to write the rates in

figures as well as in words and the amount in figures only, in such a way that interpolation is not possible. The total amount should be written both in figures and in words. In case of figures, the word 'Rs.' should be written before the figure of rupees and word 'P' after the decimal figures, e.g. 'Rs. 2.15 P' and in case of words, the word, 'Rupees' should precede and the word 'Paise' should be written at the end. Unless the rate is in whole rupees and followed by the word 'only' it should invariably be upto two decimal places. While quoting the rate in schedule of quantities, the word 'only' should be written closely following the amount and it should not be written in the next line.

13) The Contractor, whose tender is accepted, will be required to furnish performance guarantee of 5% (Ten Percent) of the tendered amount within the period specified in Special Conditions of Contract.

    The contractor whose tender is accepted will also be required to furnish by way of Security Deposit for the fulfillment of his contract, an amount equal to 2.5% of the tendered value of the work. The Security deposit will be collected by deductions from the running bills as well as final bill of the contractor at the rates of 2.5% of the amount of the Bill. On acceptance of the tender, the name of the accredited representative(s) of the contractor who would be responsible for taking instructions from the Engineer-in-Charge shall be communicated in writing to the Engineer-in-Charge.

14) GST/CESS, purchase tax, turnover tax or any other tax applicable in respect of this contract shall be payable by the Contractor and Government will not entertain any claim whatsoever in respect of the same.

    In view of implementation of GST w.e.f. 01.07.17 by Govt. of India, bidders are advised to quote their rates considering the positive (+ve) / negative (-ve) cost impact on their rates in present scenario.

    However, in respect of Goods and Services Tax, same shall be paid by the contractor to the concerned department on demand and it will only be paid/reimbursed to him by the Engineer-in-Charge after satisfying that it has been actually and genuinely paid by the contractor.

15) The tender for the work shall not be witnessed by a contractor or contractors who himself/themselves has/have tendered or who may and has/have tendered for the same work. Failure to observe this condition would render, tenders of the contractors tendering, as well as witnessing the tender, liable to summary rejection.

16) The contractor shall give a list of employees related to him

17) The tender for composite work includes, in addition to building work, all other works such as sanitary and water supply installations drainage installation, electrical work, horticulture work, roads and paths etc. The tenderer apart from being a registered contractor Government of Gujarat, must associate himself with agencies of appropriate class which are eligible to tender for sanitary and water supply drainage, electrical and horticulture works in the composite tender.

18) The contractor shall comply with the provisions of the Apprentices Act 1961, and the rules and orders issued thereunder from time to time. If he fails to do so, his failure will be a breach of the contract and WAPCOS may in his discretion, without prejudice to any other right or remedy available in law, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

2.0 CONDITIONS OF CONTRACT

Definitions

1 The Contract means the documents forming the tender and acceptance thereof and the formal agreement executed between the WAPCOS and the Contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Engineer-In-Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

2 In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them: -

"Client / Employer" shall mean "WAPCOS Limited", A Government of India undertaking- Ministry of Jal Shakti, for execution of the "Selection of contractor for various infrastructure Construction works in Gujarat National Law University Campus"

i. Having their Registered office at "5th Floor, "Kailash Building", 26, Kasturba Gandhi Marg, New Delhi - 110 001" & include their successors & permitted assigns as well as their authorized officer/ representatives

ii. The "COMPANY / WAPCOS" shall mean WAPCOS Limited.

iii. The expression works or work shall, unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.

iv. The Site shall mean the land/or other places on, into or through which work is to be executed under the contract or any adjacent land, path or street through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.

v. The Contractor shall mean the individual, firm or company, whether

incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.

vi. The Engineer-in-charge means the Engineer Officer appointed by WAPCOS or his duly authorized representative who shall direct, supervise and be in charge of the work for the purpose of this Contract

vii. Accepting Authority shall mean the authority mentioned in Special Conditions of Contract.

viii. Tenderer / Bidder shall mean the firm/party who intends to participate in this Notice Inviting Tender

ix. Excepted Risk are risks due to riots (other than those on account of contractor's employees), war (whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, military or usurped power, any acts of Government, damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, and other causes over which the contractor has no control and accepted as such by the Accepting Authority or causes solely due to use or occupation by Government of the part of the works in respect of which a certificate of completion has been issued or a cause solely due to Government's faulty design of works.

x. Market Rate shall be the rate as decided by the Engineer-in-Charge on the basis of the cost of materials and labour at the site where the work is to be executed plus the percentage mentioned in Special Conditions of Contract to cover, all overheads and profits.

xi. Schedule(s) referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers or the standard Schedule of Rates of the government mentioned in Special Conditions of Contract hereunder, with the amendments thereto issued up to the date of receipt of the tender.

xii. District Specifications means the specifications followed by the State Government in the area where the work is to be executed.

xiii. The Contractor/Successful Bidder shall mean the firm or company whose bid has been accepted by WAPCOS.

xiv. Consultant shall mean any consultant nominated by the WAPCOS

xv. Tendered value means the value of the entire work as stipulated in the letter of award.

xvi. Date of commencement of work: The date of commencement of work shall be the date of start as specified in Special Conditions of Contract or the first date of handing over of the site, whichever is later, in accordance with the phasing if any, as indicated in the tender document.

Scope and Performance

3 Where the context so requires, words imparting the singular only also include the plural and vice versa. Any reference to masculine gender shall whenever required include feminine gender and vice versa.

4 Headings and Marginal notes to these General Conditions of Contract shall not be deemed to form part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.

5 The contractor shall be furnished, free of cost one certified copy of the product brochures of equipment offered and such other printed and published documents, together with all drawings as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of this contract.

Works to be carried out

6 The work to be carried out under the Contract shall, except as otherwise provided in these conditions, include all labour, materials, tools, plants, equipment and transport which may be required in preparation of and

for and in the full and entire execution and completion of the works. The descriptions given in the Schedule of Quantities/ Building Components shall, unless otherwise stated, be held to include wastage on materials, carriage and cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labours necessary in and for the full and entire execution and completion of the work as aforesaid in accordance with good practice and recognized principles.

Sufficiency of Tender

7 The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the (Not Applicable) Cost quoted in the Schedule of Quantities/ Building Components, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the works.

Discrepancies and

8 The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in

Adjustment of Errors

preference to small scale drawing and figured dimensions in preference to scale and special conditions in preference to General Conditions.

8.1 In the case of discrepancy between the schedule of Quantities/Building Components, the Specifications and/ or the Drawings, the following order of preference shall be observed: -

i. Description of Schedule of Quantities/ Building Components.

ii. Particular Specification and Special Condition, if any.

iii. Drawings.

iv. CPWD Specifications.

v. Indian Standard Specifications of B.I.S.

8.2 If there are varying or conflicting provisions made in any one document forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the contractor.

8.3 Any error in description, quantity or rate in Schedule of Quantities or any omission therefrom shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract.

Signing of Contract

9 The successful tenderer/contractor, on acceptance of his tender by the Accepting Authority, shall, within 14 days from the stipulated date of start of the work, sign the contract consisting of:-

i. The Successful tenderer will have to execute an agreement in stamp paper worth Rs.300/- as prescribed in form.

ii. Special Conditions of Contract consisting of:

a) Various standard clauses with corrections up to the date stipulated in Special Conditions of Contract along with annexures thereto.

b) Safety Code.

c) Model Rules for the protection of health, sanitary arrangements for workers employed WAPCOS or its contractors.

d) Contractor's Labour Regulations.

e) List of Acts and omissions for which fines can be imposed.

iii. No payment for the work done will be made unless contract is signed by the contractor.

3.0 CLAUSES OF CONTRACT

CLAUSE 1: PERFORMANCE GUARANTEE

1) The contractor shall submit an irrevocable **Performance Guarantee of 5% (FIVE percent) of the tendered amount in form of BG** in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Special Conditions of Contract from the date of issue of letter of acceptance (LoA). This period can be further extended by the Engineer-in-Charge up to a maximum period as specified in Special Conditions of Contract on written request of the contractor stating the reason for delays in procuring the Performance Guarantee, to the satisfaction of the Engineer-in-Charge. This guarantee shall be in the form of Demand Draft/ FDR of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-).
2) The Performance Guarantee shall be initially valid up to the stipulated date of completion specified in Special Conditions of Contract. In case the time for completion of work gets enlarged, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time for completion of work. After recording of the completion certificate for the work by the competent authority, the performance guarantee shall be returned to the contractor, without any interest.
3) The Engineer-in-Charge shall not make a claim under the performance guarantee except for amounts to which the WAPCOS is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:
    a. Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer-in-Charge may claim the full amount of the Performance Guarantee.
    b. Failure by the contractor to pay WAPCOS any amount due, either as agreed by the contractor or determined under any of the Clauses/Conditions of the agreement, within 30 days of the service of notice to this effect by Engineer-in-Charge.
4) In the event of the contract being determined or rescinded under provision of any of the Clause/Condition of the agreement, the performance guarantee shall stand forfeited in full.
5) The Performance Guarantee shall be returned to the Contractor soon after the completion of works and issuance of the completion certificate.

CLAUSE 1A: RECOVERY OF SECURITY DEPOSIT

The Bidder whose tender(s) may be accepted (hereinafter called the contractor) shall permit WAPCOS at the time of making any payment to itfor the work done under the contract to deduct a sum at the rate of 2.5% of the gross amount of each running and final bill till the sum deducted will amount to security deposit of 2.5% of the tendered value of the work. Such deductions will be made and held by WAPCOS till the successful completion of Defect Liability Period as mentioned in NIT.

CLAUSE 2: COMPENSATION FOR DELAY

If the contractor fails to maintain the required progress in terms of clause 5 or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the purview of the Contract on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the authority specified in Special Conditions of Contract (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day/month (as applicable) that the progress remains below that specified in Clause 5 or that the work remains incomplete.

This will also apply to items or group of items for which a separate period of completion has been specified.

1	Compensation for delay of work	@ 0.5 % per week of delay to be computed on per day basis

Provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work or of the Tendered Value of the item or group of items of work for which a separate period of completion is originally given.

The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with the WAPCOS. In case, the contractor does not achieve a particular milestone mentioned in Special Conditions of Contract, or the re-scheduled milestone(s) in terms of Clause 5.4, the amount shown against that milestone shall be withheld, to be adjusted against the compensation levied at the final grant of Extension of Time. Withholding of this amount on failure to achieve a milestone, shall be automatic without any notice to the contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However, no interest, whatsoever, shall be payable on such withheld amount.

CLAUSE 2A: INCENTIVE FOR EARLY COMPLETION

In case, the contractor completes the work ahead of updated stipulated date of completion considering the effect of extra work (to be calculated on pro-rata basis as cost of extra work X

stipulated period/tendered cost), a bonus @ 1% (one per cent) of the tendered value per month computed on per day basis, shall be payable to the contractor, subject to a maximum limit of 5% (five per cent) of the tendered value. The amount of bonus, if payable, shall be paid along with final bill after completion of work. Provided always that provision of the Clause 2A shall be applicable only when so provided in 'Special Conditions of Contract'.

CLAUSE 3: WHEN CONTRACT CAN BE DETERMINED

Subject to other provisions contained in this clause, the Engineer-in-Charge may, without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and/or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:

i. If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or unworkman like manner shall omit to comply with the requirement of such notice for a period of seven days thereafter.
ii. If the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from the Engineer-in-Charge.
iii. If the contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge.
iv. If the contractor persistently neglects to carry out his obligations under the contract and/ or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge.
v. If the contractor shall offer or give or agree to give to any person in WAPCOS service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other contract for WAPCOS.
vi. If the contractor shall enter into a contract with WAPCOS in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Engineer-in-Charge.
vii. If the contractor had secured the contract with WAPCOS as a result of wrong tendering or other non-bonafide methods of competitive tendering or commits breach of Integrity Agreement.

viii. If the contractor being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors.

ix. If the contractor being a company shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or the creditor to appoint a receiver or a manager or which entitle the court to make a winding up order.

x. If the contractor shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days.

xi. If the contractor assigns, transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Engineer -in-Charge.

When the contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge on behalf of the WAPCOS shall have powers:

a) To determine the contract as aforesaid (of which termination notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence). Upon such determination, the Security Deposit already recovered and Performance Guarantee under the contract shall be liable to be forfeited and shall be absolutely at the disposal of the WAPCOS.

b) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof, as shall be un-executed out of his hands and to give it to another contractor to complete the work. The contractor, whose contract is determined as above, shall not be allowed to participate in the tendering process for the balance work.

In the event of above courses being adopted by the Engineer-in-Charge, the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract

unless and until the Engineer-in-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

CLAUSE 3A Performance Guarantee

In case, the work cannot be started due to reasons not within the control of the contractor within 1/8th of the stipulated time for completion of work or one month whichever is higher, either party may close the contract. In case contractor wants to close the contract, he shall give notice to the WAPCOS stating the failure on the part of WAPCOS. In such eventuality, the Performance Guarantee of the contractor shall be refunded within following time limits:

a) Tendered value of work is up to Rs. 45 lacs: 15 days
b) If the Tendered value of work is more than Rs. 45 lacs and up to Rs. 2.5 Crore: 21 days
c) If the Tendered value of work exceeds Rs. 2.5 Crore: 30 days

CLAUSE 4: CONTRACTOR LIABLE TO PAY COMPENSATION EVEN IF ACTION NOT TAKEN UNDER CLAUSE 3

In any case in which any of the powers conferred upon the Engineer-in-Charge by Clause-3 thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates, or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the contractor, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.

CLAUSE 5: TIME AND EXTENSION FOR DELAY

The time allowed for execution of the Works as specified in the Special Conditions of Contract or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from such time period as mentioned in Special

Conditions of Contract or from the date of handing over of the site whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, WAPCOS shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the performance guarantee absolutely.

As soon as possible after the Contract is concluded, the Contractor shall submit a Time and Progress Chart for each mile stone and get it approved by the WAPCOS. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the Contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate Programme has been agreed upon) complete the work as per mile stones given in Special Conditions of Contract.

(a) Project Management shall be done by using project management software for works costing more than Rs. 5 Crore.

(b) The project management shall be done using M.S. Project software for works costing more than Rs. 5 Crore and up to Rs. 20 Crore.

(c) For works costing more than Rs. 20 Crore, project management shall be done using Primavera Software.

5.1 PROGRAMME CHART

i. The Contractor shall prepare an integrated Programme chart in MS Project/Primavera software for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfillment of the Programme within the stipulated period or earlier and submit the same for approval to the Engineer-in- Charge within ten days of award of the contract. A recovery of Rs. 500/- (for works costing up to Rs. 20 Crores) / Rs. 5000/- (for works costing more than Rs. 20 Crores) shall be made on per day basis in case of delay in submission of the above Programme.

ii. The programme chart should include the following:
(a) Descriptive note explaining sequence of the various activities.
(b) Network (PERT / CPM / BAR CHART).
(c) Programme for procurement of materials by the contractor.
Programme of procurement of machinery / equipment's having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor. In addition to above, to achieve the progress of Work as per programme, the contractor must bring at site adequate shuttering material required for cement concrete and R.C.C. works etc. for three floors within one month from the date of start

of work till the completion of RCC work as per requirement of work. The contractor shall submitshuttering schedule adequate to complete structure work within laid down physical milestone.

iii. If at any time, it appears to the Engineer-in-Charge that the actual progress of work does not conform to the approved Programme referred above or after rescheduling of milestones, the contractor shall produce a revised Programme within 7 (seven) days, showing the modifications to the approved Programme to ensure timely completion of the work. The modified schedule of Programme shall be approved by the Engineer in Charge. A recovery of Rs. 500/- (for works costing up to Rs. 20 Crores) / Rs. 5000/- (for works costing more than Rs. 20 Crores) shall be made on per day basis in case of delay in submission of the modified Programme.

iv. The submission for approval by the Engineer-in-Charge of such Programme or such particulars shall not relieve the contractor of any of the duties or responsibilities under the contract. This is without prejudice to the right of Engineer-in-Charge to take action against the contractor as per terms and conditions of the agreement.

v. The contractor shall submit the progress report using MS Project/Primavera software with base line Programme referred above for the work done during previous month to the Engineer-in-charge on or before 5th day of each month failing which a recovery Rs. 500/ - (for works costing upto Rs. 20 Crores) / Rs. 5000/- (for works costing more than Rs. 20 Crores) shall be made on per day basis in case of delay in submission of the monthly progress report.

5.2 If the work(s) be delayed by: -

i. force majeure, or
ii. abnormally bad weather, or
iii. serious loss or damage by fire, or
iv. civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or
v. delay on the part of other contractors or tradesmen engaged by Engineer-in- Charge in executing work not forming part of the Contract, or
vi. non-availability of stores, which are the responsibility of WAPCOS to supply or
vii. non-availability or break down of tools and Plant to be supplied or supplied by WAPCOS or
viii. any other cause which, in the absolute discretion of the Engineer-in-Charge is beyond the Contractor's control.

then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the authority as indicated in Special Conditions of Contract but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.

5.3 Request for rescheduling of Mile stones and extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay on the prescribed form to the authority as indicated in Special Conditions of Contract. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

5.4 In any such case the authority as indicated in Special Conditions of Contract may give a fair and reasonable extension of time and reschedule the mile stones for completion of work. Such extension or rescheduling of the milestones shall be communicated to the Contractor by the authority as indicated in Special Conditions of Contract in writing, within 3 months or 4 weeks of the date of receipt of such request respectively. Non application by the contractor for extension of time/ rescheduling of the milestones shall not be a bar for giving a fair and reasonable extension/ rescheduling of the milestones by the authority as indicated in Special Conditions of Contract and this shall be binding on the contractor.

CLAUSE 6: MEASUREMENTS OF WORK DONE

- Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement, the value in accordance with the contract of work done.
- All measurement of all items having financial value shall be entered in Measurement Book and/or level field book so that a complete record is obtained of all works performed under the contract.
- All measurements and levels shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the contractor or his authorized representative from time to time during the progress of the work and such measurements shall be signed and dated by the Engineer- in-Charge and the contractor or their representatives in token of their acceptance. If the contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties. If for any reason the contractor or his authorized representative is not available and the work of recording measurements is suspended by the Engineer-in-Charge or his representative, the Engineer-in-Charge and the WAPCOS shall not entertain any claim from contractor for any loss or damages on this account. If the contractor or his authorized representative does not remain present at the time of such measurements after the contractor or his authorized representative has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Engineer-in-Charge or his representative shall be deemed to be accepted by the Contractor.
- The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels.
- Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in

the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available, then a mutually agreed method shall be followed.

- The contractor shall give, not less than seven days' notice to the Engineer-in-Charge or his authorized representative in charge of the work, before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing, the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.
- Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the WAPCOS to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.
- It is also a term of this contract that recording of measurements of any item of work in the measurement book and/or its payment in the interim, on account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

CLAUSE 6A: COMPUTERIZED MEASUREMENT BOOK

- Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement the value of work done in accordance with the contract.
- All measurements of all items having financial value shall be entered by the contractor and compiled in the shape of the Computerized Measurement Book having pages of A-4 size as per the format of the WAPCOS so that a complete record is obtained of all the items of works performed under the contract.
- All such measurements and levels recorded by the contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the contractor from the Engineer-in-Charge or his authorized representative as per interval or program fixed in consultation with Engineer-in-Charge or his authorized representative. After the necessary corrections made by the Engineer-in-Charge, the

measurement sheets shall be returned to the contractor for incorporating the corrections and for resubmission to the Engineer-in- Charge for the dated signatures by the Engineer-in- Charge and the contractor or their representatives in token of their acceptance.

- Whenever bill is due for payment, the contractor would initially submit draft computerized measurement sheets and these measurements would be got checked/test checked from the Engineer-in-Charge and/or his authorized representative. The contractor will, thereafter, incorporate such changes as may be done during these checks/test checks in his draft computerized measurements, and submit to the WAPCOS a computerized measurement book, duly bound, and with its page's machine numbered. The Engineer-in- Charge and/or his authorized representative would thereafter check this MB, and record the necessary certificates for their checks/test checks.
- The final, fair, computerized measurement book given by the contractor, duly bound, with its page's machine numbered, should be 100% correct, and no cutting or over-writing in themeasurements would thereafter be allowed. If at all any error is noticed, the contractor shall have to submit a fresh computerized MB with its pages duly machine numbered and bound. The contractor shall submit two spare copies of such computerized MB's for the purpose of reference and records.
- The contractor shall also submit to the WAPCOS separately his computerized Abstract of Cost and the bill based on these measurements, duly bound, and its page's machine numbered along with two spare copies of the bill. Thereafter, this bill will be processed by the Engineer-In-Charge
- The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for checking of measurements/levels by the Engineer-in- Charge or his representative.
- Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available then a mutually agreed method shall be followed.
- The contractor shall give not less than seven days' notice to the Engineer-in-Charge or his authorized representative in charge of the work before covering up or otherwise placing beyond the reach of checking and/or test checking the measurement of any work in order that the same may be checked and/or test checked and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of checking and/or test checking measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or

his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of checking and/or test checking measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

- Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the WAPCOS to check the measurements recorded by contractor and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.
- It is also a term of this contract that checking and/or test checking the measurements of any item of work in the measurement book and/or its payment in the interim, on account of final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

CLAUSE 7: PAYMENT ON INTERMEDIATE CERTIFICATE TO BE REGARD AS ADVANCE

- No payment shall be made for work, estimated to cost Rs. Twenty thousand or less till after the whole of the work shall have been completed and certificate of completion given. For works estimated to cost over Rs. Twenty thousand, the interim or running account bills shall be submitted by the contractor for the work executed on the basis of such recorded measurements on the format of the WAPCOS in triplicate on or before the date of every month fixed for the same by the Engineer-in-Charge. The contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment/ adjustment of advances for material collected, if any, since the last such payment is less than the amount specified in Special Conditions of Contract, in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved. Engineer-in-Charge shall arrange to have the bill verified by taking or causing to be taken, where necessary, the requisite measurements of the work. In the event of the failure of the contractor to submit the bills, Engineer-in-Charge shall prepare or cause to be prepared such bills in which event no claims whatsoever due to delays on payment including that of interest shall be payable to the contractor. Payment on account of amount admissible shall be made by the Engineer-in- Charge certifying the sum to which the contractor is considered entitled by way of interim payment at such rates as decided by the Engineer-in-Charge. The amount admissible shall be paid by 10th working day after the day of presentation of the bill by the Contractor to the Engineer-in-Charge together with the account of the material issued by the WAPCOS, or dismantled materials, if any. In the case of works outside the headquarters of the Engineer- in-Charge, the period of ten working days will be extended to fifteen working days.

- All such interim payments shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected. Any certificate given by the Engineer-in-Charge relating to the work done or materials delivered forming part of such payment, may be modified or corrected by any subsequent such certificate(s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is/are in accordance with the contract and specifications. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Engineer-in-Charge under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.
- Pending consideration of extension of date of completion, interim payments shall continue to be made as herein provided without prejudice to the right of the WAPCOS to take action under the terms of this contract for delay in the completion of work, if the extension of date of completion is not granted by the competent authority.
- The Engineer-in-Charge in his sole discretion on the basis of a certificate from the Engineer-In-Charge to the effect that the work has been completed up to the level in question make interim advance payments without detailed measurements for work done (other than foundations, items to be covered under finishing items) up to lintel level (including sunshade etc.) and slab level, for each floor working out at 75% of the assessed value. The advance payments so allowed shall be adjusted in the subsequent interim bill by taking detailed measurements thereof.
- In case of composite tenders, running payment for the major component shall be made by Engineer-In-Charge of major discipline to the main contractor. Running payment for minor component shall be made by the Engineer-in-Charge of the discipline of minor component directly to the main contractor.
- In case main contractor fails to make the payment to the contractor associated by him within 15 days of receipt of each running account payment, then on the written complaint of contractor associated for such minor component, Engineer in charge of minor component shall serve the show cause to the main contractor and if reply of main contractor either not received or found unsatisfactory, he may make the payment directly to the contractor associated for minor component as per the terms and conditions of the agreement drawn between main contractor and associate contractor fixed by him. Such payment made to the associate contractor shall be recovered by Engineer-in-charge of major or minor component from the next R/A/ final bill due to main contractor as the case may be.

CLAUSE 8: COMPLETION CERTIFICATE AND COMPLETION PLANS

- Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and if there is no defect in the

work, shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution; thereof, and not until the work shall have been measured by the Engineer-in-Charge. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the Engineer-in-Charge may at the expense of the contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

CLAUSE 8A : CONTRACTOR TO KEEP SITE CLEAN

- When the annual repairs and maintenance of works are carried out, the splashes and droppings from white washing, colour washing, painting etc., on walls, floor, windows, etc shall be removed and the surface cleaned simultaneously with the completion of these items of work in the individual rooms, quarters or premises etc. where the work is done: without waiting for the actual completion of all the other items of work in the contract. In case the contractor fails to comply with the requirements of this clause, the Engineer-in-Charge shall have the right to get this work done at the cost of the contractor either WAPCOS or through any other agency. Before taking such action, the Engineer-in-Charge shall give ten days' notice in writing to the contractor.

CLAUSE 8B : COMPLETION PLANS TO BE SUBMITTED BY THE CONTRACTOR

- The contractor shall submit completion plan as required vide General Specifications for Electrical works (Part-I internal) 2005 and (Part-ll External) 1994 as applicable within thirty days of the completion of the work.
- In case, the contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a sum equivalent to 2.5% of the value of the work subject to a ceiling of Rs. 15,000 (Rs. Fifteen thousand only) as may be fixed shall be final and binding on the contractor.
- The contractor shall submit completion plan for water, sewerage and drainage line plan within thirty days of the completion of the work.

- In case, the contractor fails to submit the completion plan as aforesaid, the WAPCOS will get it done through other agency at his cost and actual expenses incurred plus Rs. 15,000/- for the same shall be recovered from the contractor.

CLAUSE 9: PAYMENT OF FINAL BILL

- The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Engineer-in-Charge whichever is earlier. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer-in-Charge, will, as far as possible be made within the period specified here-in-under, the period being reckoned from the date of receipt of the bill by the Engineer-in-Charge or his authorized Engineer, complete with account of materials issued by the WAPCOS and dismantled materials.
  a) Tendered value of work is up to Rs. 45 lacs - 2 months
  b) If the Tendered value of work is more than Rs. 45 lacs and up to Rs. 2.5 Crore - 3 months
  c) If the Tendered value of work exceeds Rs. 2.5 Crore: 6 months

CLAUSE 9A: PAYMENT OF CONTRACTOR'S BILLS TO BANKS

- Payments due to the contractor may, if so desired by him, be made to his bank, registered financial, co-operative or thrift societies or recognized financial institutions instead of direct to him provided that the contractor furnishes to the Engineer-in-Charge (1) an authorization in the form of a legally valid document such as a power of attorney conferring authority on the bank; registered financial, co-operative or thrift societies or recognized financial institutions to receive payments and (2) his own acceptance of the correctness of the amount made out as being due to him by WAPCOS or his signature on the bill or other claim preferred against WAPCOS before settlement by the Engineer-in-Charge of the account or claim by payment to the bank, registered financial, co-operative or thrift societies or recognized financial institutions. While the receipt given by such banks; registered financial, co-operative or thrift societies or recognized financial institutions shall constitute a full and sufficient discharge for the payment, the contractor shall whenever possible present his bills duly receipted and discharged through his bank, registered financial, co-operative or thrift societies or recognized financial institutions.

- Nothing herein contained shall operate to create in favour of the bank; registered financial, co-operative or thrift societies or recognized financial institutions any rights or equities vis-à-vis the WAPCOS.

CLAUSE 10: MATERIALS SUPPLIED BY WAPCOS

Not Applicable

CLAUSE 10A: MATERIALS TO BE PROVIDED BY CONTRACTOR

- The contractor shall, at his own expense, provide all materials, required for the works other than those which are stipulated to be supplied by the WAPCOS
- The contractor shall, at his own expense and without delay, supply to the Engineer-in-Charge samples of materials to be used on the work and shall get these approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the contract. The contractor shall, if requested by the Engineer-in-Charge furnish proof, to the satisfaction of the Engineer-in-Charge that the materials so comply. The Engineer-in-Charge shall within thirty days of supply of samples or within such further period as he may require intimate to the Contractor in writing whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the Engineer-in-Charge for his approval, fresh samples complying with the specifications laid down in the contract. When materials are required to be tested in accordance with specifications, approval of the Engineer-in-Charge shall be issued after the test results are received.
- The contractor shall submit an original warranty certificates to WAPCOS for all the supplied materials &equipment's under the scope of work.
  - Civil structure- required test certificates for strength as per CPWD norms
  - Mechanical Items including plumbing & hardware – Warranty certificates from OEM.
  - Electrical Items- Safety certification &Warranty certificates from OEM.
- The Contractor shall at his risk and cost submit the samples of materials to be tested or analyzed and shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and materials finally accepted by the Engineer-in-Charge. The Contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of materials.
- The contractor shall, at his risk and cost, make all arrangements and shall provide all facilities as the Engineer-in-Charge may require for collecting, and preparing the required number of samples for such tests at such time and to such place or places as may be directed by the Engineer-in-Charge and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. The Engineer-in- Charge or his authorized representative shall at all times have access to the works and to all workshops and places where work is being prepared or from where

materials, manufactured articles or machinery are being obtained for the works and the contractor shall afford every facility and every assistance in obtaining the right to such access.

- The Engineer-in-Charge shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default, the Engineer-in-Charge shall be at liberty to employ at the expense of the contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Engineer-in-Charge shall also have full powers to require other proper materials to be substituted thereof and in case of default, the Engineer-in- Charge may cause the same to be supplied and all costs which may attend such removal and substitution shall be borne by the Contractor.
- The contractor shall at his own expense, provide a material testing lab at the site for conducting routine field tests. The lab shall be equipped at least with the testing equipment as specified in Special Conditions of Contract.
- Minimum 01-year warranty for Mechanical & Electrical Equipment's and other bought out items, at the discretion of WAPCOS Limited, if supplied directly by the contractor. The standard warranty period offered by the Manufacturer shall be retained, in case the original warranty period is more than one year.

CLAUSE 10B : (i) SECURED ADVANCE ON NON-PERISHABLE MATERIALS

- The contractor, on signing an indenture in the form to be specified by the Engineer-in-Charge, shall be entitled to be paid during the progress of the execution of the work up to 90% of the assessed value of any materials which are in the opinion of the Engineer-in-Charge non-perishable, non-fragile and non-combustible and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and/or protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account of which an advance has been made under this sub-clause are incorporated in the work, the amount of such advance shall be recovered/ deducted from the next payment made under any of the clause or clauses of this contract.
- Such secured advance shall also be payable on other items of perishable nature, fragile and combustible with the approval of the Engineer-in-Charge provided the contractor provides a comprehensive insurance cover for the full cost of such materials. The decision of the Engineer- in-Charge shall be final and binding on the contractor in this matter. No secured advance, shall however, be paid on high-risk materials such as ordinary glass, sand, petrol, diesel etc.

CLAUSE 10B:(ii) MOBILISATION ADVANCE

- Mobilization advance not exceeding 5% of the tendered value may be given, if requested by the contractor in writing within one month of the order to commence the work. Such

advance shall be released by the Engineer-in-charge to the contractor on a request made by the contractor to the Engineer-in-Charge in this behalf.

- Before release of advance, the contractor shall execute a Bank Guarantee Bond from Scheduled Bank for the amount equal to 110% of the amount of advance and valid for the contract period. The Bank Guarantee against Mobilization Advance shall be release upon Acceptance of Performance Test & Commissioning by the Engineer-In-Charge.

CLAUSE 10B: (iii) PLANT MACHINERY & SHUTTERING MATERIAL ADVANCE

- An advance for plant, machinery & shuttering material required for the work and brought to site by the Contractor may be given if requested by the contractor in writing within one month of bringing such plant and machinery to site. Such advance shall be given on such plant and machinery which in the opinion of the Engineer-in-charge will add to the expeditious execution of work and improve the quality of work. The amount of advance shall be restricted to 5% percent of the tender value. In the case of new plant and equipment to be purchased for the work, the advance shall be restricted to 90% of the price of such new plant and equipment paid by the contractor for which the contractor shall produce evidence satisfactory to the Engineer-in-Charge. In the case of second hand and used plants and equipment, the amount of such advance shall be limited to 50% of the depreciated value of plant and equipment as may be decided by the Engineer-in-Charge. The contractor shall, if so required by the Engineer-in-Charge, submit the statement of value of such old plant and equipment duly approved by a Registered Valuer recognized by the Central Board of Direct Taxes under the Income- Tax Act, 1961. No such advance shall be paid on any plant and equipment of perishable nature and on any plant and equipment of a value less than Rs. 50,000/- Seventy-five per cent of such amount of advance shall be paid after the plant &equipment is brought to site and balance twenty-five percent on successfully commissioning the same.
- Leasing of equipment shall be considered at par with purchase of equipment and shall be covered by tripartite agreement with the following:
  1. Leasing company which gives certificate of agreeing to lease equipment to the contractor.
  2. Engineer in Charge, and
  3. The contractor.
- This advance shall further be subject to the condition that such plant and equipment (a) are considered by the Engineer-in-Charge to be necessary for the works; (b) and are in working order and are maintained in working order; (c) hypothecated to the WAPCOS as specified by the Engineer-in-Charge before the payment of advance is released. The contractor shall not be permitted to remove from the site such hypothecated plant and equipment without the prior written permission of the Engineer-in-Charge. The contractor shall be responsible for maintaining such plant and equipment in good working order during the entire period of hypothecation failing which such advance shall be entirely recovered in lump sum. For this purpose, steel scaffolding and form work shall be treated as plant and equipment.

- The contractor shall insure the Plant and Machinery for which mobilization advance is sought and given, for a sum sufficient to provide for their replacement at site. Any amounts not recovered from the insurer will be borne by the contractor.

CLAUSE 10B: (iv) INTEREST & RECOVERY

- The mobilization advance and plant and machinery advance in (ii) & (iii) above bear simple interest at the rate of 10 per cent per annum and shall be calculated from the date of payment to the date of recovery, both days inclusive, on the outstanding amount of advance. Recovery of such sums advanced shall be made by the deduction from the contractor's bills commencing after first 10% of the gross value of the work is executed and paid, on pro-rata percentage basis to the gross value of the work billed beyond 10% in such a way that the entire advance is recovered by the time 80% of the gross value of the contract is executed and paid, together with interest due on the entire outstanding amount up to the date of recovery of the installment.

CLAUSE 10C : PAYMENT ON ACCOUNT OF INCREASE IN PRICE / WAGES DUE TO STATUTORY ORDER

- If after submission of the tender, the price of any material incorporated in the works (excluding the materials covered under Clause 10CA and not being a material supplied from the Engineer-in- Charge's stores in accordance with Clause 10 thereof) and/or wages of labour increases as a direct result of the coming into force of any fresh law, or statutory rule or order (but not due to any changes of rate in GST/CESS, Central/State Excise/Custom Duty) beyond the prices/wages prevailing at the time of the last stipulated date of receipt of tenders including extensions, if any, for the work during contract period including the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, then the amount of the contract shall accordingly be varied and provided further that any such increase shall be limited to the price/wages prevailing at the time of updated stipulated date of completion considering effect of extra work (extra time to be calculated on prorate basis only as cost of extra work x stipulated period/tendered amount).
- If after submission of the tender, the price of any material incorporated in the works (excluding the materials covered under Clause 10CA and not being a material supplied from the Engineer-in- Charge's stores in accordance with Clause 10 thereof) and/or wages of labour as prevailing at the time of last stipulated date of receipt of tender including extensions, if any, is decreased as a direct result of the coming into force of any fresh law or statutory rules or order (but not due to any changes of rate in GST/CESS, Central/State Excise/Custom Duty), WAPCOS shall in respect of materials incorporated in the works (excluding the materials covered under Clause 10CA and not being material supplied from the Engineer-in-Charge's stores in accordance with Clause 10 hereof) and/or labour engaged on the execution of the work after the date of coming into force of such law statutory rule or order be entitled to deduct from the dues of the contractor, such amount as shall be equivalent to the difference between the prices of

the materials and/or wages as prevailed at the time of the last stipulated date for receipt of tenders including extensions if any for the work and the prices of materials and/or wages of labour on the coming into force of such law, statutory rule or order. This will be applicable for the contract period including the justified period extended under the provisions of clause 5 of the contract without any action under clause 2.

- Engineer-in-Charge may call books of account and other relevant documents from the contractor to satisfy himself about reasonability of increase in prices of materials and wages. The contractor shall, within a reasonable time of his becoming aware of any alteration in the price of any such materials and/or wages of labour, give notice thereof to the Engineer-in-Charge stating that the same is given pursuant to this condition together with all information relating thereto which he may be in position to supply.
- For this purpose, the labour component of the work executed during period under consideration shall be the percentage as specified in Special Conditions of Contract, of the value of work done during that period and the increase/decrease in labour shall be considered on the minimum daily wages in rupees of any unskilled adult male mazdoor, fixed under any law, statutory rule or order.

CLAUSE 10 CA: PAYMENT DUE TO VARIATION IN PRICES OF MATERIALS AFTER RECEIPT OF TENDER

- If after submission of the tender, the price of materials specified in Special Conditions of Contract increases/ decreases beyond the base price(s) as indicated in Special Conditions of Contract for the work, then the amount of the contract shall accordingly be varied and provided further that any such variations shall be effected for stipulated period of Contract including the justified period extended under the provisions of Clause 5 of the Contract without any action under Clause 2.
- However, for work done/during the justified period extended as above, it will be limited to indices prevailing at the time of updated stipulated date of completion considering the effect of extra work (extra time to be calculated on pro-rata basis only as cost of extra work x stipulated period/tendered cost).
- The increase/decrease in prices of cement, steel reinforcement, structural steel and POL shall be determined by the Price Indices Economic Advisor to Government of India, Ministry of Commerce and Industry. For other items provided in the Special Conditions of Contract, this shall be determined by the All India Wholesale Price Indices of materials as published by Economic Advisor to Government of India, Ministry of Commerce and Industry. Base price for cement, steel reinforcement, structural steel and POL shall be as issued by the state / Central Govt. from time to time. In case, price index of a particular material is not issued by Ministry of Commerce and Industry, then the price index of nearest similar material as indicated in Special Conditions of Contract shall be followed.
- The amount of the contract shall accordingly be varied for all such materials and will be worked out as per the formula given Clause 10CA, Conditions of Contract of CPWD.

CLAUSE 10CC: PAYMENT DUE TO INCREASE/DECREASE IN PRICES/WAGES (EXCLUDING MATERALS COVERED UNDER CLAUSE 10 CA) AFTER RECEIPT OF TENDER FOR WORKS

- If the prices of materials (not being materials supplied or services rendered at fixed prices by the WAPCOS in accordance with clause 10 & 34 thereof) and/or wages of labour required for execution of the work increase, the contractor shall be compensated for such increase as per provisions detailed below and the amount of the contract shall accordingly be varied, subject to the condition that that such compensation for escalation in prices and wages shall be available only for the work done during the stipulated period of the contract including the justified period extended under the provisions of clause 5 of the contract without any action under clause 2. However, for the work done during the justified period extended as above, the compensation as detailed below will be limited to prices/wages prevailing at the time of updated stipulated date of completion considering the effect of extra work (extra time to be calculated on pro-rata basis only as cost of extra work x stipulated period/tendered cost). No such compensation shall be payable for a work for which the stipulated period of completion.
- is equal to or less than the time as specified in Special Conditions of Contract. Such compensation for escalation in the prices of materials and labour, when due, shall be worked out based on the provisions mentioned in the Clause 10CC of CPWD Conditions of Contract.

CLAUSE 10D : DISMANTLED MATERIAL WAPCOS PROPERTY

- The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work, etc. as WAPCOS's property and such materials shall be disposed off to the best advantage of WAPCOS according to the instructions in writing issued by the Engineer-in-Charge.

CLAUSE 11: WORKS TO BE EXECUTED IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS, ORDERS ETC.

- The contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer-in-Charge and the contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions as are not included in the standard specifications specified in Special Conditions of Contract or in any Bureau of Indian Standard or any other, published standard or code or, Schedule of Rates or any other printed publication referred to elsewhere in the contract.

- The contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.
- All the prescribed Tests as per Central Public Works Department Manual/IS Codes of construction materials shall be carried out from the Govt./ NABL recognized Laboratory as may be approved by WAPCOS without any extra expenditure to WAPCOS.

CLAUSE 12: DEVIATIONS / VARIATIONS EXTENT AND PRICING

The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided.

12.1 The time for completion of the works shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered, be extended, if requested by the contractor, as follows:

(i) In the proportion which the additional cost of the altered, additional or substituted work, bears to the original tendered value plus

(ii) 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge.

12.2(a) Deviations, Extra Items and Pricing

The In the case of extra item(s) (items that are completely new, and are in addition to the items contained in the contract), the contractor may within fifteen days of receipt of order or occurrence of the item(s) claim rates, supported by proper analysis, for the work and the engineer-in-charge shall within prescribed time limit of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

12.2(b) Deviations, Substituted Items and Pricing.

In the case of substituted items (items that are taken up with partial substitution or in lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the following para.

(a) If the market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

(b) If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

12.2(c) Deviations, Deviated Quantities, Pricing

In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in Special Conditions of Contract, the contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within prescribed time limit of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

a) Tendered value of work is up to Rs. 45 lac 30 days
b) If the Tendered value of work is more than Rs. 45 lacs and up to Rs. 2.5 Crore 45 days
c) If the Tendered value of work exceeds Rs. 2.5 Crore: 60 days

12.3 The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work in excess of the limits laid down in Special Conditions of Contract, and the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.

12.4 The contractor shall send to the Engineer-in-Charge once everyfortnight, an up to date account giving complete details of all claims for additional payments to which the contractor may consider himself entitled and of all additional work ordered by the Engineer-in-Charge

which he has executed during the preceding quarter failing which the contractor shall be deemed to have waived his right.

12.5 For the purpose of operation of Special Conditions of Contract, the following works shall be treated as works relating to foundation unless & otherwise defined in the contract:

(i) For Buildings: All works up to 1.2 meters above ground level or up to floor 1 level whichever is lower.

(ii) For abutments, piers and well staining: All works up to 1.2 m above the bed level.

(iii) For retaining walls, wing walls, compound walls, chimneys, overhead reservoirs/ tanks and other elevated structures: All works up to 1.2 meters above the ground level.

(iv) For reservoirs/tanks (other than overhead reservoirs/tanks): All works up to 1.2 meters above the ground level.

(v) For basement: All works up to 1.2 m above ground level or up to floor 1 level whichever is lower.

(vi) For Roads, all items of excavation and filling including treatment of sub base.

12.6 Any operation incidental to or necessarily has to be in contemplation of tenderer while filing. tender, or necessary for proper execution of the item included in the Schedule of quantities or in the schedule of rates mentioned above, whether or not, specifically indicated in the description of the item and the relevant specifications, shall be deemed to be included in the rates quoted by the tenderer or the rate given in the said schedule of rates, as the case may be. Nothing extra shall be admissible for such operations.

CLAUSE 13: FORECLOSURE OF CONTRACT DUE TO ABANDONMENT OR REDUCTION IN SCOPE OF WORK

- If at any time after acceptance of the tender, Engineer-in-charge shall decide to abandon or reduce the scope of the works for any reason whatsoever and hence not require the whole or any part of the works to be carried out, the Engineer-in-Charge shall give notice in writing to that effect to the contractor and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.
- The contractor shall be paid at contract rates, full amount for works executed at site.

CLAUSE 14 : CARRYING OUT PART WORK AT RISK & COST OF CONTRACTOR

- If contractor:

- At any time makes default during currency of work or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from the Engineer-in-Charge; or
- Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days even after a notice in writing is given in that behalf by the Engineer-in-Charge; or
- Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined, and does not complete them within the period specified in the notice given in writing in that behalf by the Engineer-in-Charge. The Engineer- in-Charge without invoking action under clause 3 may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to WAPCOS, by a notice in writing to take the part work / part incomplete work of any item(s) out of his hands and shall have powers to:

(a) Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or

(b) Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor.

- The Engineer-in-Charge shall determine the amount, if any, is recoverable from the contractor for completion of the part work/ part incomplete work of any item(s) taken out of his hands and execute at the risk and cost of the contractor, the liability of contractor on account of loss or damage suffered by WAPCOS because of action under this clause shall not exceed 10% of the tendered value of the work.
- In determining the amount, credit shall be given to the contractor with the value of work done in all respect in the same manner and at the same rate as if it had been carried out by the original contractor under the terms of his contract, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor. The certificate of the Engineer-in-Charge as to the value of work done shall be final and conclusive against the contractor provided always that action under this clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the WAPCOS are less than the amount payable to the contractor at his agreement rates, the difference shall not be payable to the contractor.
- Any excess expenditure incurred or to be incurred by WAPCOS in completing the part work/ part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by WAPCOS as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to WAPCOS in law or per as agreement be recovered from any money due to the contractor on any account, and if such money is insufficient, the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

- If the contractor fails to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractors' unused materials, constructional plant, implements, temporary building at site etc. and adjust the proceeds of sale thereof towards the dues recoverable from the contractor under the contract and if thereafter there remains any balance outstanding, it shall be recovered in accordance with the provisions of the contract.
- In the event of above course being adopted by the Engineer-in-Charge, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advance on any account or with a view to the execution of the work or the performance of the contract.

CLAUSE 15 : SUSPENSION OF WORK

- The contractor shall, on receipt of the order in writing of the Engineer-in-Charge, (whose decision shall be final and binding on the contractor) suspend the progress of the works or any part thereof for such time and in such manner as the Engineer-in-Charge may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof for any of the following reasons:
  (a) on account of any default on the part of the contractor or;
  (b) for proper execution of the works or part thereof for reasons other than the default of the contractor; or
  (c) for safety of the works or part thereof.
  The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-in- Charge.
- If the suspension is ordered for reasons (b) and (c) in sub-para (i) above:
  (a) The contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25%, for completion of the item or group of items of work for which a separate period of completion is specified in the contract and of which the suspended work forms a part, and;
  (b) If the total period of all such suspensions in respect of an item or group of items or work for which a separate period of completion is specified in the contract exceeds thirty days, the contractor shall, in addition, be entitled to such compensation as the Engineer-in-Charge may consider reasonable in respect of salaries and/or wages paid by the contractor to his employees and labour at site, remaining idle during the period of suspension, adding thereto 2% to cover indirect expenses of the contractor provided the contractor submits his claim supported by details to the Engineer-in-Charge within fifteen days of the expiry of the period of 30 days.
- If the works or part thereof is suspended on the orders of the Engineer-in-Charge for more than three months at a time, except when suspension is ordered for reason (a) in subpara (i) above, the contractor may after receipt of such order serve a written notice on the Engineer-in-Charge requiring permission within fifteen days from receipt by the Engineer-in-Charge of the said notice, to proceed with the work or part thereof in regard to which

progress has been suspended and if such permission is not granted within that time, the contractor, if he intends to treat the suspension, where it affects only a part of the works as an omission of such part by WAPCOS or where it affects whole of the works, as an abandonment of the works by WAPCOS, shall within ten days of expiry of such period of 15 days give notice in writing of his intention to the Engineer-in-Charge. In the event of the contractor treating the suspension as an abandonment of the contract by WAPCOS, he shall have no claim to payment of any compensation on account of any profit or advantage which he might have derived from the execution of the work in full but which he could not derive in consequence of the abandonment. He shall, however, be entitled to such compensation, as the Engineer-in-Charge may consider reasonable, in respect of salaries and/or wages paid by him to his employees and labour at site, remaining idle in consequence adding to the total thereof 2% to cover indirect expenses of the contractor provided the contractor submits his claim supported by details to the Engineer-in-Charge within 30 days of the expiry of the period of 3 months.

CLAUSE 15A: COMPENSATION IN CASE DELAY OF SUPPLY OF MATERIAL

- The contractor shall not be entitled to claim any compensation from WAPCOS for the loss suffered by him on account of delay by WAPCOS in the supply of materials in Special Conditions of Contract where such delay is covered by the difficulties relating to the supply of wagons, force majeure or any reasonable cause beyond the control of the WAPCOS. This clause 15 A will not be applicable for works where no material is stipulated.

CLAUSE 16: ACTION IN CASE WORK NOT DONE AS PER SPECIFICATIONS

- All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the Engineer-In-charge, his authorized subordinates in charge of the work and all the superior officers, officer of the Quality Assurance Unit of the WAPCOS or any organization engaged by the WAPCOS for Quality Assurance and of the Chief Technical Examiner's Office, and the contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.
- If it shall appear to the Engineer-in-charge or his authorized subordinates in charge of the work or to the Chief Engineer in charge of Quality Assurance or his subordinate officers or the officers of the organization engaged by the WAPCOS for Quality Assurance or to the Chief Technical Examiner or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract, the contractor shall, on demand in writing which shall be made within twelve months (six months in the case of work costing Rs. 10 Lac and below except road work) of the completion of the work from the Engineer-in-Charge specifying the work,

materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Engineer-in- Charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as under clause 2 of the contract (for non-completion of the work in time) for this default.

- In such case the Engineer-in-Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the authority specified in Special Conditions of Contract may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the contractor. Decision of the Engineer-in-Charge to be conveyed in writing in respect of the same will be final and binding on the contractor.

CLAUSE 17: CONTRACTOR LIABLE FOR DAMAGES, DEFECTS DURING DEFECT LIABILITY PERIOD

- If the contractor or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, road kerb, fence, enclosure, water pipe, cables, drains, electric or telephone post or wires, trees, grass or grassland, or cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within twelve months (six months in the case of work costing Rs. Ten lacs and below except road work) after a certificate final or otherwise of its completion shall have been given by the Engineer-in- Charge as aforesaid arising out of defect or improper materials or workmanship the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default the Engineer-in-Charge cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the contractor, or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof. The security deposit of the contractor shall not be refunded before the expiry of twelve months (six months in the case of work costing Rs. Ten lacs and below except road work) after the issue of the certificate final or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later.
- Provided that in the case of road work, if in the opinion of the Engineer-in-Charge, half of the security deposit is sufficient, to meet all liabilities of the contractor under this contract, half of the security deposit will be refundable after six months and the

remaining half after twelve months of the issue of the said certificate of completion or till the final bill has been prepared and passed whichever is later.

- The defects liability period will be two years from the date of completion of development and construction works. During this period the Contractor will get the defects rectified without any cost to WAPCOS. For the item of water proofing roof treatment, the Contractor will give guarantee bond for ten years. Similarly, for other items, like electrical/mechanical equipment which have guarantee/warranty period beyond one year, wherever applicable as per manufacturer recommendations, will also be given guarantee bond by the Contractor to WAPCOS.

CLAUSE 18 : CONTRACTOR SUPPLY TOOLS & PLANTS ETC.

- The contractor shall provide at his own cost all materials (except such special materials, if any, as may in accordance with the contract be supplied from the Engineer-in-Charge's stores), machinery, tools & plants as specified in Special Conditions of Contract. In addition to this, appliances, implements, other plants, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-Charge as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting, weighing and assisting the measurement for examination at any time and from time to time of the work or materials. Failing his so doing, the same may be provided by the Engineer-in-Charge at the expense of the contractor and the expenses may be deducted, from any money due to the contractor, under this contract or otherwise and/or from his security deposit or the proceeds of sale thereof, or of a sufficient portion thereof.

CLAUSE 18A : RECOVERY OF COMPENSATION PAID TO WORKMEN

- In every case in which by virtue of the provisions sub-section (1) of Section 12, of the Workmen's Compensation Act, 1923, WAPCOS is obliged to pay compensation to a workman employed by the contractor, in execution of the works, WAPCOS will recover from the contractor, the amount of the compensation so paid; and, without prejudice to the rights of the WAPCOS under sub-section (2) of Section 12, of the said Act, WAPCOS shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by WAPCOS to the contractor whether under this contract or otherwise. WAPCOS shall not be bound to contest any claim made against it under sub-section (1) of Section 12, of the said Act, except on the written request of the contractor and upon his giving to WAPCOS full security for all costs for which WAPCOS might become liable in consequence of contesting such claim.

CLAUSE 18B: ENSURING PAYMENT AND AMENITIES TO WORKERS, IF CONTRACTOR FAILS

- In every case in which by virtue of the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and of the Contract Labour (Regulation and Abolition) Central Rules, 1971, WAPCOS is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under Clause 19H or under the C.P.W.D. Contractor's Labour Regulations, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by C.P.W.D. Contractors, WAPCOS will recover from the contractor, the amount of wages so paid or the amount of expenditure so incurred; and without prejudice to the rights of the WAPCOS under sub- section(2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, WAPCOS shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by WAPCOS to the contractor whether under this contract or otherwise WAPCOS shall not be bound to contest any claim made against it under sub-section (1) of Section 20, sub-section (4) of Section 21, of the said Act, except on the written request of the contractor and upon his giving to the WAPCOS full security for all costs for which WAPCOS might become liable in contesting such claim.

CLAUSE 19: LABOUR LAWS TO BE COMPLIED BY CONTRACTOR

- The contractor shall obtain a valid license under the Contract Labour (R&A) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, before the commencement of the work, and continue to have a valid license until the completion of the work. The contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act, 1986.
- The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.
- Any failure to fulfil these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.

CLAUSE 19A

- No labour below the age of fourteen years shall be employed on the work.

CLAUSE 19B : PAYMENT OF WAGES

- The contractor shall pay to labour employed by him either directly or through subcontractors, wages not less than fair wages as defined in the C.P.W.D. Contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

- The contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work, including any labour engaged by his sub-contractors in connection with the said work, as if the labour had been immediately employed by him.
- In respect of all labour directly or indirectly employed in the works for performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied with the Contractor's Labour Regulations made by WAPCOS from time to time in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorized made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.
- The Engineer-in-Charge concerned shall have the right to deduct from the moneys due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfillment of the conditions of the contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the contract or non-observance of the Regulations.
- Under the provision of Minimum Wages (Central) Rules, 1950, the contractor is bound to allow to the labours directly or indirectly employed in the works one-day rest for 6 days' continuous work and pay wages at the same rate as for duty. In the event of default, the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labours and pay the same to the persons entitled thereto from any money due to the contractor by the Engineer-in-Charge concerned.
- In the case of Union Territory of Delhi, however, as the all-inclusive minimum daily wages fixed under Notification of the Delhi Administration No.F.12(162) MWO/DAB/ 43884-91, dated 31-12-1979 as amended from time to time are inclusive of wages for the weekly day of rest, the question of extra payment for weekly holiday would not arise.
- The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractor's Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made thereunder from time to time.
- The contractor shall indemnify and keep indemnified WAPCOS against payments to be made under and for the observance of the laws aforesaid and the C.P.W.D. Contractor's Labour Regulations without prejudice to his right to claim indemnity from his sub-contractors.
- The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.

- Whatever is the minimum wage for the time being, or if the wage payable is higher than such wage, such wage shall be paid by the contractor to the workmen directly without the intervention of Jamadar and that Jamadar shall not be entitled to deduct or recover any amount from the minimum wage payable to the workmen as and by way of commission or otherwise.
- The contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered by the Jamadar from the wage of workmen.

CLAUSE 19C

- In respect of all labour directly or indirectly employed in the work for the performance of the contractor's part of this contract, the contractor shall at his own expense arrange for the safety provisions as per C.P.W.D. Safety Code framed from time to time and shall at his own expense provide for all facilities in connection therewith. In case the contractor fails to make arrangement and provide necessary facilities as aforesaid, he shall be liable to pay a penalty of Rs.200/- for each default and in addition, the Engineer-in- Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

CLAUSE 19 D

- The contractor shall submit by the 4th and 19th of every month, to the Engineer-in-Charge, a true statement showing in respect of the second half of the preceding month and the first half of the current month respectively: -
  (1) the number of labourers employed by him on the work,
  (2) their working yours,
  (3) the wages paid to them,
  (4) the accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused by them, and
  (5) The number of female workers who have been allowed maternity benefit according to Clause 19F and the amount paid to them.
- Failing which the contractor shall be liable to pay to WAPCOS, a sum not exceeding Rs.200/- for each default or materially incorrect statement. The decision of the Engineer-In-Charge shall be final in deducting from any bill due to the contractor; the amount levied as fine and be binding on the contractor.

CLAUSE 19 E

- In respect of all labour directly or indirectly employed in the works for the performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied with all the rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by the WAPCOS and its contractors.

CLAUSE 19 F

Leave and pay during leave shall be regulated as follows: -

1. Leave:

(i) in the case of delivery - maternity leave not exceeding 8 weeks, 4 weeks up to and including the day of delivery and 4 weeks following that day,

(ii) in the case of miscarriage – up to 3 weeks from the date of miscarriage.

2. Pay:
(i) in the case of delivery - leave pay during maternity leave will be at the rate of the women's average daily earnings, calculated on total wages earned on the days when full time work was done during a period of three months immediately preceding the date on which she gives notice that she expects to be confined or at the rate of Rupee one only a day whichever is greater.

(ii) in the case of miscarriage - leave pay at the rate of average daily earning calculated on the total wages earned on the days when full time work was done during a period of three months immediately preceding the date of such miscarriage.

3. Conditions for the grant of Maternity Leave:

No maternity leave benefit shall be admissible to a woman unless she has been employed for a total period of not less than six months immediately preceding the date on which she proceeds on leave.

4. The contractor shall maintain a register of Maternity (Benefit) in the Prescribed Form and the same shall be kept at the place of work.

CLAUSE 19 G

- In the event of the contractor(s) committing a default or breach of any of the provisions of the WAPCOS, Contractor's Labour Regulations and Model Rules for the protection of health and sanitary arrangements for the workers as amended from time to time or furnishing any information or submitting or filing any statement under the provisions of the above Regulations and' Rules which is materially incorrect, he/they shall, without prejudice to any other liability, pay to the Government a sum not exceeding Rs.200/- for every default, breach or furnishing, making, submitting, filing such materially incorrect statements and in the event of the contractor(s) defaulting continuously in this respect, the penalty may be enhanced to Rs.200/- per day for each day of default subject to a maximum of 5 per cent of the estimated cost of the work put to tender. The decision of the Engineer-in-Charge shall be final and binding on the parties.
- Should it appear to the Engineer-in-Charge that the contractor(s) is/are not properly observing and complying with the provisions of the C.P.W.D. Contractor's Labour Regulations and Model Rules and the provisions of the Contract Labour (Regulation and

Abolition) Act 1970, and the Contract Labour (R& A) Central Rules 1971, for the protection of health and sanitary arrangements for work-people employed by the contractor(s) (hereinafter referred as "the said Rules") the Engineer-in-Charge shall have power to give notice in writing to the contractor(s) requiring that the said Rules be complied with and the amenities prescribed therein be provided to the work-people within a reasonable time to be specified in the notice. If the contractor(s) shall fail within the period specified in the notice to comply with and/observe the said Rules and to provide the amenities to the work-people as aforesaid, the Engineer-in-Charge shall have the power to provide the amenities hereinbefore mentioned at the cost of the contractor(s). The contractor(s) shall erect, make and maintain at his/their own expense and to approved standards all necessary huts and sanitary arrangements required for his/their work-people on the site in connection with the execution of the works, and if the same shall not have been erected or constructed, according to approved standards, the Engineer-in-Charge shall have power to give notice in writing to the contractor(s) requiring that the said huts and sanitary arrangements be remodeled and/or reconstructed according to approved standards, and if the contractor(s) shall fail to remodel or reconstruct such huts and sanitary arrangements according to approved standards within the period specified in the notice, the Engineer-in-Charge shall have the power to remodel or reconstruct such huts and sanitary arrangements according to approved standards at the cost of the contractor(s).

CLAUSE 19H

- The contractor(s) shall at his/their own cost provide his/their labour with a sufficient number of huts (hereinafter referred to as the camp) of the following specifications on a suitable plot of land to be approved by the Engineer-in-Charge.
  (a) The minimum height of each hut at the eaves level shall be 2.10m (7 ft.) and the floor area to be provided will be at the rate of 2.7 sq.m. (30 sq.ft.) for each member of the worker's family staying with the labourer.
  (b) The contractor(s) shall in addition construct suitable cooking places having a minimum area of 1.80m x 1.50m (6'x5') adjacent to the hut for each family.
  (c) The contractor(s) shall also construct temporary latrines and urinals for the use of the labourers each on the scale of not less than four per each one hundred of the total strength, separate latrines and urinals being provided for women.
  (d) The contractor(s) shall construct sufficient number of bathing and washing places, one unit for every 25 persons residing in the camp. These bathing and washing places shall be suitably screened.
- All the huts shall have walls of sun-dried or burnt-bricks laid in mud mortar or other suitable local materials as may be approved by the Engineer-in-Charge. In case of sun-dried bricks, the walls should be plastered with mud gobri on both sides. The floor may be kutcha but plastered with mud gobri and shall be at least 15 cm (6") above the surrounding ground. The roofs shall be laid with thatch or any other materials as may be approved by the

Engineer-in-Charge and the contractor shall ensure that throughout the period of their occupation, the roofs remain water-tight.

- The contractor(s) shall provide each hut with proper ventilation.
- All doors, windows, and ventilators shall be provided with suitable leaves for security purposes.
- There shall be kept an open space of at least 7.2m (8 yards) between the rows of huts which may be reduced to 6m (20 ft.) according to the availability of site with the approval of the Engineer-in-Charge. Back to back construction will be allowed.
- Water Supply - The contractor(s) shall provide adequate supply of water for the use of labourers. The provisions shall not be less than two gallons of pure and wholesome water per head per day for drinking purposes and three gallons of clean water per head per day for bathing and washing purposes. Where piped water supply is available, supply shall be at stand posts and where the supply is from wells or river, tanks which may be of metal or masonry, shall be provided. The contractor(s) shall also at his/ their own cost make arrangements for laying pipe lines for water supply to his/ their labour camp from the existing mains wherever available, and shall pay all fees and charges therefore.
- The site selected for the camp shall be high ground, removed from jungle.
- **Disposal of Excreta** - The contractor(s) shall make necessary arrangements for the disposal of excreta from the latrines by trenching or incineration which shall be according to the requirements laid down by the Local Health Authorities. If trenching or incineration is not allowed, the contractor(s) shall make arrangements for the removal of the excreta through the Municipal Committee/authority and inform it about the number of labourers employed so that arrangements may be made by such Committee/authority for the removal of the excreta. All charges on this account shall be borne by the contractor and paid direct by himto the Municipality/authority. The contractor shall provide one sweeper for every eight seats in case of dry system.

  Drainage - The contractor(s) shall provide efficient arrangements for draining away sullage water so as to keep the camp neat and tidy.

  The contractor(s) shall make necessary arrangements for keeping the camp area sufficiently lighted to avoid accidents to the workers.

  Sanitation - The contractor(s) shall make arrangements for conservancy and sanitation in the labour camps according to the rules of the Local Public Health and Medical Authorities.

CLAUSE 19I

- The Engineer-in-Charge may require the contractor to dismiss or remove from the site of the work any person or persons in the contractors' employ upon the work who may be incompetent or misconduct himself and the contractor shall forthwith comply with such requirements. In respect of maintenance/repair or renovation works etc. where the labour have an easy access to the individual houses, the contractor shall issue identity cards to the labourers, whether temporary or permanent and he shall be responsible for any untoward action on the part of such labour. AE/JE will display a list of contractors working in the

colony/Blocks on the notice board in the colony and also at the service Centre, to apprise the residents about the same.

CLAUSE 19J

- It shall be the responsibility of the contractor to see that the building under construction is not occupied by anybody unauthorized during construction, and is handed over to the Engineer-in-Charge with vacant possession of complete building. If such building though completed is occupied illegally, then the Engineer-in-Charge shall have the option to refuse to accept the said building/buildings in that position. Any delay in acceptance on this account will be treated as the delay in completion and for such delay, a levy up to 5% of tendered value of work may be imposed by the WAPCOS whose decision shall be final both with regard to the justification and quantum and be binding on the contractor.
- However, WAPCOS, through a notice, may require the contractor to remove the illegal occupation any time on or before construction and delivery.

CLAUSE 19K : Employment of Skilled / Semi Skilled Workers

- The contractor shall, at all stages of work, deploy skilled/semi-skilled tradesmen who are qualified and possess certificate in particular trade from Industrial Training Institute/National Institute of construction Management and Research (NICMAR)/ National Academy of Construction, CIDC or any similar reputed and recognized Institute managed/ certified by State/Central Government. The number of such qualified tradesmen shall not be less than 20% of total skilled/semi-skilled workers required in each trade at any stage of work. The contractor shall submit number of man days required in respect of each trade, its scheduling and the list of qualified tradesmen along with requisite certificate from recognized Institute to Engineer in charge for approval. Notwithstanding such approval, if the tradesmen are found to have inadequate skill to execute the work of respective trade, the contractor shall substitute such tradesmen within two days of written notice from Engineer-in-Charge. Failure on the part of contractor to obtain approval of Engineer-in-Charge or failure to deploy qualified tradesmen will attract a compensation to be paidby contractor at the rate of Rs. 100 per such tradesman per day. Decision of Engineer in Charge as to whether particular tradesman possesses requisite skill and amount of compensation in case of default shall be final and binding.
- Provided always, that the provisions of this clause, shall not be applicable for works with estimated cost put to tender being less than Rs. 5 crores.

CLAUSE 20: MINIMUM WAGES ACT TO BE COMPLIED WITH

- The contractor shall comply with all the provisions of the Minimum Wages Act, 1948, and Contract Labour (Regulation and Abolition) Act, 1970, amended from time to time and rules framed thereunder and other labour laws affecting contract labour that may be brought into force from time to time.

CLAUSE 21: WORK NOT TO BE SUBLET. ACTION IN CASE OF INSOLVENCY

- The contract shall not be assigned or sublet without the written approval of the Engineer-in Charge. And if the contractor shall assign or sublet his contract, or attempt to do so, or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the contractor, or any of his servants or agent to any public officer or person in the employ of WAPCOS in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Engineer-in-Charge on behalf of the WAPCOS shall have power to adopt the course specified in Clause 3 hereof in the interest of WAPCOS and in the event of such course being adopted, the consequences specified in the said Clause 3 shall ensue.

CLAUSE 22 COMPENSATION

- All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of WAPCOS without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

CLAUSE 23 : CHANGES IN FIRM'S CONSTITUTION TO BE INTIMATED

- Where the contractor is a partnership firm, the previous approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu undivided family business concern, such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the works hereby undertaken by the contractor. If previous approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention of Clause 21 hereof and the same action may be taken, and the same consequences shall ensue as provided in the said Clause 21.

CLAUSE 24

- All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of the Engineer-in-Charge who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on.

CLAUSE 25 : SETTLEMENT OF DISPUTES & ARBITRATION

"Any dispute, controversy or claims arising out of or relating to this Agreement or the breach, termination or invalidity thereof, shall be settled through following mechanism:

a) Firstly, the aggrieved party shall write a letter to the other party detailing its grievances and calling upon the other party to amicably resolve the dispute by convening a joint meeting. Accordingly, the parties as per their convenience shall jointly convene the said meeting(s). Where in minutes of the said meeting(s) shall be prepared and countersigned by all the parties. It is mandatory to prepare minutes of meeting(s)

and to be countersigned by all the parties, irrespective of the outcome of the said meeting(s).

b) In the event the parties are unable to reach on any settlement in the said meeting(s), then the aggrieved party shall mandatory resort to pre-litigation mediation mechanism with Delhi High Court Mediation Cell, New Delhi.

c) It is only upon failure of the pre-litigation mediation mechanism with Delhi High Court Mediation Cell, and then the aggrieved party shall resort to resolution of disputes through arbitration of a Sole Arbitrator. The appointing authority of Sole Arbitrator is CMD, WAPCOS Limited, to which neither of the parties have any objection nor they shall ever object.

d) Subject to the parties agreeing otherwise, the Arbitration proceedings shall be conducted in accordance with the provisions of the Indian Arbitration and Conciliation Act, 1996 (amended as on date).

e) It is also acknowledged and accepted that WAPCOS is only working as Intermediary between the Associate/Sub-Consultant/Sub-Contractor and the Principal Employer/Client, thus in the event, any dispute arises under the present agreement and referred to Arbitration for adjudication, then subject to corresponding clause in the Contract/Agreement/Work Order/Arrangement between Principal Employer/Client & WAPCOS, Principal Employer/Client shall also be made party to the said Arbitration proceedings. Also, the award including costs if any passed against WAPCOS and costs incurred in the proceedings shall be the sole responsibility of Principal Employer/Client. The said clause if found in applicable, even then the other terms of the Arbitration Clause shall survive and shall be acted upon.

f) The place/seat of arbitration shall be Delhi and any award whether interim or final, shall be made, and shall be deemed for all purposes between the parties to be made, in Delhi. The arbitral procedure shall be conducted in English language and any award or awards shall be rendered in English. The procedural law of the arbitration shall be Indian Law. The award of the arbitrator shall be final and conclusive and binding upon the Parties.

g) The Contract and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims) shall be governed by and construed in accordance with the laws of India and the Parties submit to sole & exclusive jurisdiction of courts at Delhi."

CLAUSE 26: CONTRACTOR INDEMNIFY WAPCOS AGAINST PATENT RIGHTS

- The contractor shall fully indemnify and keep indemnified the WAPCOS against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claims made under or action brought against WAPCOS in respect of any such matters as aforesaid, the contractor shall be immediately notified thereof and the contractor shall

be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise therefrom, provided that the contractor shall not be liable to indemnify the WAPCOS if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Engineer-in-Charge in this behalf.

CLAUSE 27: LUMPSUM PROVISIONS IN TENDER

- When the estimate on which a tender is made includes lump sum in respect of parts of the work, the contractor shall be entitled to payment in respect of the items of work involved or the part of the work in question at the same rates as are payable under this contract for such items, or if the part of the work in question is not, in the opinion of the Engineer-in-Charge payable of measurement, the Engineer-in-Charge may at his discretion pay the lump-sum amount entered in the estimate, and the certificate in writing of the Engineer-in-Charge shall be final and conclusive against the contractor with regard to any sum or sums payable to him under the provisions of the clause.

CLAUSE 28: ACTION WHERE NO SPECIFICATIONS ARE SPECIFIED

- In the case of any class of work for which there is no such specifications as referred to in Clause 11, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturers' specifications, if not available then as per District Specifications. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-Charge.

CLAUSE 29 : WITHOLDING AND LIEN IN RESPECT OF SUM DUE FROM CONTRACTOR

a) Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, the Engineer-in-Charge or the WAPCOS shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the contractor and for the purpose aforesaid, the Engineer-in-Charge or the WAPCOS shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, the Engineer-in-Charge or the WAPCOS shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract with the Engineer-in-Charge of the WAPCOS or any contracting person through the Engineer-in-Charge pending finalization of adjudication of any such claim.

   It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or WAPCOS will be kept withheld or retained as such by the Engineer-in-Charge or WAPCOS till the claim

arising out of or under the contract is determined by the arbitrator(if the contract is governed by the arbitration clause) by the competent court, as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the Engineer-in-Charge or the WAPCOS shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company as the case may be, whether in his individual capacity or otherwise.

b) WAPCOS shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract, etc., to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for WAPCOS to recover the same from him in the manner prescribed in sub-clause (i) of this clause or in any other manner legally permissible; and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by WAPCOS to the contractor, without any interest thereon whatsoever.

Provided that the Government shall not be entitled to recover any sum overpaid, nor the contractor shall be entitled to payment of any sum paid short where such payment has been agreed upon between the WAPCOS on the one hand and the contractor on the other under any term of the contract permitting payment for work after assessment by WAPCOS.

CLAUSE 29A : LIEN IN RESPECT OF CLAIMS IN OTHER CONTRACTS

- Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or the WAPCOS or any other contracting person or persons through Engineer-in-Charge against any claim of the Engineer-in-Charge or WAPCOS or such other person or persons in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Engineer- in-Charge or the WAPCOS or with such other person or persons.
- It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Engineer-in-Charge or the WAPCOS will be kept withheld or retained as such by the Engineer-in-Charge or the WAPCOS or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the arbitration clause or by the competent court, as the case may be and that the contractor shall have no claim for interest or damages whatsoever on this account or on any other

ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

CLAUSE 30: EMPLOYMENT OF COAL MINING OR CONTROLLED AREA LABOUR NOT PERMISSIBLE

- The contractor shall not employ coal mining or controlled area labour falling under any category whatsoever on or in connection with the work or recruit labour from area within a radius of 32 km (20 miles) of the controlled area. Subject as above the contractor shall employ imported labour only i.e., deposit imported labour or labour imported by contractors from area, from which import is permitted.
- Where ceiling price for imported labour has been fixed by State or Regional Labour Committees not more than that ceiling price shall be paid to the labour by the contractor.
- The contractor shall immediately remove any labourer who may be pointed out by the Engineer-in-Charge as being a coal mining or controlled area labourer. Failure to do so shall render the contractor liable to pay to WAPCOS a sum calculated at the rate of Rs.10/- per day per labourer. The certificate of the Engineer-in-Charge about the number of coal mining or controlled area labourer and the number of days for which they worked shall be final and binding upon all parties to this contract.
- It is declared and agreed between the parties that the aforesaid stipulation in this clause is one in which the public are interested within the meaning of the exception in Section 74 of Indian Contract Act, 1872.
- **Explanation: -** Controlled Area means the following areas:
- Districts of Dhanbad, Hazaribagh, Jamtara - a Sub-Division under Santhal Pargana Commissionery, Districts of Bankuara, Birbhum, Burdwan, District of Bilaspur.
- Any other area which may be declared a Controlled Area by or with the approval of the Central Government.

CLAUSE 31: UNFILTERED WATER SUPPLY

- The contractor(s) shall make his/their own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following conditions.
    - That the water used by the contractor(s) shall be fit for construction purposes to the satisfaction of the Engineer-in-Charge.
    - The Engineer-in-Charge shall make alternative arrangements for supply of water at the risk and cost of contractor(s) if the arrangements made by the contractor(s) for procurement of water are in the opinion of the Engineer-in-Charge, unsatisfactory.

CLAUSE 31A: WATER SUPPLY, IF AVAILABLE

Water if available may be supplied to the contractor by the WAPCOS subject to the following conditions: -

- The water charges @ 1 % shall be recovered on gross amount of the work done.
- The contractor(s) shall make his/their own arrangement of water connection and laying of pipelines from existing main of source of supply.
- The WAPCOS do not guarantee to maintain uninterrupted supply of water and it will be incumbent on the contractor(s) to make alternative arrangements for water at his/ their own cost in the event of any temporary break down in the water main so that the progress of his/their work is not held up for want of water. No claim of damage or refund of water charges will be entertained on account of such break down.

CLAUSE 32 : ALTERNATE WATER ARRANGEMENTS

- Where there is no piped water supply arrangement and the water is taken by the contractor from the wells or hand pump constructed by the Government, no charge shall be recovered from the contractor on that account. The contractor shall, however, draw water at such hours of the day that it does not interfere with the normal use for which the hand pumps and wells are intended. He will also be responsible for all damage and abnormal repairs arising out of his use, the cost of which shall be recoverable from him. The Engineer-in-Charge shall be the final authority to determine the cost recoverable from the contractor on this account and his decision shall be binding on the contractor.
- The contractor shall be allowed to construct temporary wells in the proposed land for Construction for taking water for construction purposes only after he has got permission of the Engineer-in- Charge in writing. No charges shall be recovered from the contractor on this account, but the contractor shall be required to provide necessary safety arrangements to avoid any accidents or damage to adjacent buildings, roads and service lines. He shall be responsible for any accidents or damage caused due to construction and subsequent maintenance of the wells and shall restore the ground to its original condition after the wells are dismantled on completion of the work.

CLAUSE 33 : RETURN OF SURPLUS MATERIALS

- Notwithstanding anything contained to the contrary in this contract, where any materials for the execution of the contract are procured with the assistance of WAPCOS either by issue from WAPCOS stocks or purchase made under orders or permits or licenses issued by WAPCOS, the contractor shall hold the said materials economically and solely for the purpose of the contract and not dispose of them without the written permission of the WAPCOS and return, if required by the Engineer-in-Charge, all surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination for any reason whatsoever on being paid or credited such price as the Engineer-in-Charge shall determine having due regard to the condition of the materials. The price allowed to the contractor however shall not exceed the amount charged to him excluding the element of storage charges. The decision of the Engineer-in-Charge shall be final and conclusive. In the event of breach of the aforesaid condition,

the contractor shall in addition to throwing himself open to action for contravention of the terms of the license or permit and/or for criminal breach of trust, be liable to WAPCOS for all moneys, advantages or profits resulting or which in the usual course would have resulted to him by reason of such breach.

CLAUSE 34: HIRE OF PLANT & MACHINERY

i. The contractor shall arrange at his own expense all tools, plant, machinery and equipment (hereinafter referred to as T&P) required for execution of the work except for the Plant & Machinery listed in Schedule 'C' and stipulated for issue to the contractor. If the contractor requires any item of T&P on hire from the T&P available with the WAPCOS over and above the T&P stipulated for issue, the WAPCOS will, if such item is available, hire it to the contractor at rates to be agreed upon between him and the Engineer-in-Charge. In such a case, all the conditions hereunder for issue of T&P shall also be applicable to such T&P as is agreed to be issued.

ii. Plant and Machinery when supplied on hire charges shown in Schedule 'C' shall be made over and taken back at the WAPCOS equipment yard/shed shown in Schedule 'C' and the contractor shall bear the cost of carriage from the place of issue to the site of work and back. The contractor shall be responsible to return the plant and machinery with condition in which it was handed over to him, and he shall be responsible for all damage caused to the said plant and machinery at the site of work or elsewhere in operation and otherwise during transit including damage to or loss of plant and for all losses due to his failure to return the same soon after the completion of the work for which it was issued. The Engineer-In-Charge shall be the sole judge to determine the liability of the contractor and its extent in this regard and his decision shall be final and binding on the contractor.

iii. The plant and machinery as stipulated above will be issued as and when available and if required by the contractor. The contractor shall arrange his programme of work according to the availability of the plant and machinery and no claim, whatsoever, will be entertained from him for any delay in supply by the WAPCOS.

iv. The hire charges shall be recovered at the prescribed rates from and inclusive of the date the plant and machinery made over up to and inclusive of the date of the return in good order even though the same may not have been working for any cause except major breakdown due to no fault of the contractor or faulty use requiring more than three working days continuously (excluding intervening holidays and Sundays) for bringing the plant in order. The contractor shall immediately intimate in writing to the Engineer-in- Charge when any plant or machinery gets out of order requiring major repairs as aforesaid. The Engineer-in-Charge shall record the date and time of receipt of such intimation in the log sheet of the plant or machinery. Based on this if the breakdown before lunch period or major breakdown will be computed considering half a day's breakdown on the day of complaint. If the breakdown occurs in the post lunch

period of major breakdown will be computed starting from the next working day. In case of any dispute under this clause, the decision of the WAPCOS shall be final and binding on the contractor.

v. The hire charges shown above are for each day of 8 hours (inclusive of the one-hour lunch break) or part thereof.

vi. Hire charges will include service of operating staff as required and also supply of lubricating oil and stores for cleaning purposes. Power fuel of approved type, firewood, kerosene oil etc. for running the plant and machinery and also the full time chowkidar for guarding the plant and machinery against any loss or damage shall be arranged by the contractor who shall be fully responsible for the safeguard and security of plant and machinery. The contractor shall on or before the supply of plant and machinery sign an agreement indemnifying the WAPCOS against any loss or damage caused to the plant and machinery either during transit or at site of work.

vii. Ordinarily, no plant and machinery shall work for more than 8 hours a day inclusive of one hour lunch break. In case of an urgent work however, the Engineer-in-Charge may, at his discretion, allow the plant and machinery to be worked for more than normal period of 8 hours a day. In that case, the hourly hire charges for overtime to be borne by the contractor shall be 50% more than the normal proportionate hourly charges (1/8th of the daily charges) subject to a minimum of half day's normal charges on any particular day. For working out hire charges for over time, a period of half an hour and above will be charged as one hour and a period of less than half an hour will be ignored.

viii. The contractor shall release the plant and machinery every seventh day for periodical servicing and/or wash out which may take about three to four hours or more. Hire charges for full day shall be recovered from the contractor for the day of servicing/ wash out irrespective of the period employed in servicing.

ix. The plant and machinery once issued to the contractor shall not be returned by him on account of lack of arrangements of labour and materials, etc. on his part, the same will be returned only when they are required for major repairs or when in the opinion of the Engineer-in-Charge, the work or a portion of work for which the same was issued is completed.

x. Log Book for recording the hours of daily work for each of the plant and machinery supplied to the contractor will be maintained by the WAPCOS and will be countersigned by the contractor or his authorized agent daily. In case the contractor contests the correctness of the entries and/or fails to sign the Log Book, the decision of the Engineer-in-Charge shall be final and binding on him. Hire charges will be calculated according to the entries in the Log Book and will be binding on the contractor. Recovery on account of hire charges for road rollers shall be made for the minimum number of days worked out on the assumption that a roller can consolidate per day and maximum quantity of materials or area surfacing as noted against each in the annexed statement (see attached annexure).

xi. In the case of concrete mixers, the contractors shall arrange to get the hopper cleaned and the drum washed at the close of the work each day or each occasion.

In case rollers for consolidation are employed by the contractor himself, log book for such rollers shall be maintained in the same manner as is done in case of WAPCOS's rollers, maximum quantity of any items to be consolidated for each roller-day shall also be same as

in Annexure to Clause 34(x). For less use of rollers, recovery for the less roller days shall be made at the stipulated issue rate.

xii. The contractor shall be responsible to return the plant and machinery in the condition in which it was handed over to him and he shall be responsible for all damage caused to the said plant and machinery at the site of work or elsewhere in operation or otherwise or during transit including damage to or loss of parts, and for all losses due to his failure to return the same soon after the completion of the work for which it was issued. The Engineer-In-Charge shall be the sole judge to determine the liability of the contractor and its extent in this regard and his decision shall be final and binding on the contractor.

xiii. The contractor will be exempted from levy of any hire charges for the number of days he is called upon in writing by the Engineer-in-Charge to suspend execution of the work, provided WAPCOS plant and machinery in question have, in fact, remained idle with the contractor because of the suspension

xiv. In the event of the contractor not requiring any item of plant and machinery issued by WAPCOS though not stipulated for issue in Schedule 'C' any time after taking delivery at the place of issue, he may return it after two days' written notice or at any time without notice if he agrees to pay hire charges for two additional days without, in any way, affectingthe right of the Engineer-in-Charge to use the said plant and machinery during the said period of two days as he likes including hiring out to a third party.

CLAUSE 35: CONDITION RELATING TO USE OF ASPHALTIC MATERIALS

- The contractor undertakes to make arrangement for the supervision of the work by the firm supplying the tar or bitumen used.
- The contractor shall collect the total quantity of tar or bitumen required for the work as per standard formula, before the process of painting is started and shall hypothecate it to the Engineer-in-Charge. If any bitumen or tar remains unused on completion of the work on account of lesser use of materials in actual execution for reasons other than authorized changes of specifications and abandonment of portion of work, a corresponding deduction equivalent to the cost of unused materials as determined by the Engineer-in-Charge shall be made and the material return to the contractors. Although the materials are hypothecated to WAPCOS, the contractor undertakes the responsibility for their proper watch, safe custody and protection against all risks. The materials shall not be removed from site of work without the consent of the Engineer-in- Charge in writing.
- The contractor shall be responsible for rectifying defects noticed within a year from the date of completion of the work and the portion of the security deposit relating to asphaltic work shall be refunded after the expiry of this period.

CLAUSE 36 : EMPLOYMENT OF TECHNICAL STAFF AND EMPLOYEES

- Contractors Superintendence, Supervision, Technical Staff & Employees
    - The contractor shall provide all necessary superintendence during execution of the work and all along thereafter as may be necessary for proper fulfilling of the obligations under the contract.

- The contractor shall immediately after receiving letter of acceptance of the tender and before commencement of the work, intimate in writing to the Engineer-in-Charge, the name(s), qualifications, experience, age, address(s) and other particulars along with certificates, of the principal technical representative to be in charge of the work and other technical representative(s) who will be supervising the work. Minimum requirement of such technical representative(s) and their qualifications and experience shall not be lower than specified in Special Conditions of Contract. The Engineer-in-Charge shall within 3 days of receipt of such communication intimate in writing his approval or otherwise of such a representative(s) to the contractor. Any such approval may at any time be withdrawn and in case of such withdrawal, the contractor shall appoint another such representative(s) according to the provisions of this clause. Decision of the tender accepting authority shall be final and binding on the contractor in this respect. Such a principal technical representative and other technical representative(s) shall be appointed by the contractor soon after receipt of the approval from Engineer-in-charge and shall be available at site before start of work.
- All the provisions applicable to the principal technical representative under the Clause will also be applicable to other technical representative(s) The principal technical representative and other technical representative(s) shall be present at the site of work for supervision at all times when any construction activity is in progress and also present himself/themselves, as required, to the Engineer-in-Charge and/or his designated representative to take instructions. Instructions given to the principal technical representative or other technical representative(s) shall be deemed to have the same force as if these have been given to the contractor. The principal technical representative and other technical representative(s) shall be actually available at site fully during all stages of execution of work, during recording/checking/test checking of measurements of works and whenever so required by the Engineer-in-Charge and shall also note down instructions conveyed by the Engineer-in- Charge or his designated representative(s) in the site order book and shall affix his/their signature in token of noting down the instructions and in token of acceptance of measurements/ checked measurements/ test checked measurements. The representative(s) shall not look after any other work. Substitutes, duly approved by Engineer-in-Charge of the work in similar manner as aforesaid shall be provided in event of absence of any of the representative(s) by more than two days.
- If the Engineer-in-Charge, whose decision in this respect is final and binding on the contractor, is convinced that no such technical representative(s) is/are effectively appointed or is/are effectively attending or fulfilling the provision of this clause, a recovery (nonrefundable) shall be effected from the contractor as specified in Special Conditions of Contract and the decision of the Engineer-In-Charge as recorded in the site order book and measurement recorded checked/test checked in Measurement Books shall be final and binding on the contractor. Further if the contractor fails to

appoint suitable technical Principal technical representative and/or other technical representative(s) and if such appointed persons are not effectively present or are absent by more than two days without duly approved substitute or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the execution of the work until such date as suitable other technical representative(s) is/are appointed and the contractor shall be held responsible for the delay so caused to the work. The contractor shall submit a certificate of employment of the technical representative(s) (in the form of copy of Form-16 or CPF deduction issued to the Engineers employed by him) along with every on account bill final bill and shall produce evidence if at any time so required by the Engineer-in-Charge.

- The contractor shall provide and employ on the site only such technical assistants as are skilled and experienced in their respective fields and such foremen and supervisory staff as are competent to give proper supervision to the work. The contractor shall provide and employ skilled, semiskilled and unskilled labour as is necessary for proper and timely execution of the work.
- The Engineer-in-Charge shall be at liberty to object to and require the contractor to remove from the works any person who in his opinion misconducts himself, or is incompetent or negligent in the performance of his duties or whose employment is otherwise considered by the Engineer-in-Charge to be undesirable. Such person shall not be employed again at works site without the written permission of the Engineer-in-Charge and the persons so removed shall be replaced as soon as possible by competent substitutes.

CLAUSE 37: LEVY / TAXES PAYABLE BY CONTRACTOR

- GST/CESS, Building and other Construction Workers Welfare Cess or any other tax or Cess in respect of this contract shall be payable by the contractor and WAPCOS shall not entertain any claim whatsoever in this respect.
- In view of implementation of GST w.e.f. 01.07.17 by Govt. of India, bidders are advised to quote their rates considering the positive (+ve) / negative (-ve) cost impact on their rates in present scenario.
- However, in respect of Goods and Services Tax, same shall be paid by the contractor to the concerned department on demand and it will only be paid/reimbursed to him by the Engineer-in-Charge after satisfying that it has been actually and genuinely paid by the contractor.
- The contractor shall deposit royalty and obtain necessary permit for supply of the red bajri, stone, kankar, etc. from local authorities.
- If pursuant to or under any law, notification or order any royalty, cess or the like becomes payable by the WAPCOS and does not any time become payable by the contractor to the State Government, Local authorities in respect of any material used by the contractor in the works, then in such a case, it shall be lawful to the WAPCOS and it will have the right and be

entitled to recover the amount paid in the circumstances as aforesaid from dues of the contractor

CLAUSE 38 : CONDITIONS FOR REIMBURSEMENT OF LEVY/TAXES IF LEVIED AFTER RECIEPT OF TENDERS

- All tendered rates shall be inclusive of all taxes and levies (except Goods & Service Tax) payable under respective statutes. However, if any further tax or levy or cess is imposed by Statute, after the last stipulated date for the receipt of tender including extensions if any and the contractor thereupon necessarily and properly pays such taxes/levies/cess, the contractor shall be reimbursed the amount so paid, provided such payments, if any, is not, in the opinion of the WAPCOS attributable to delay in execution of work within the control of the contractor.
- The contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorized representative of the WAPCOS and/or the Engineer-in-Charge and shall also furnish such other information/document as the Engineer-in-Charge may require from time to time.
- The contractor shall, within a period of 30 days of the imposition of any such further tax or levy or cess, give a written notice thereof to the Engineer-in-charge that the same is given pursuant to this condition, together with all necessary information relating thereto.

CLAUSE 39 : TERMINATION OF CONTRACT

- Subject to the other provisions of the Contract, WAPCOS Limited shall have the right to serve a notice of termination of the Contract on the Contractor and forthwith terminate the Contract without prejudice to any of its other rights and remedies against the Contractor and without being liable to pay any loss or compensation if:
    - the Contractor fails to pay any amount due and payable under the Contract within [21 (twenty-one)] days of receipt of notice given by WAPCOS Limited of such non-payment;
    - if any distress or execution is levied upon any of the assets of the Contractor;
    - at any time during the currency of the Contract there is a change in the effective control of the Contractor as at the date of the Contract;
    - (iv) the Contractor fails to complete, test and commission the Contractor's Works/Project Facility within the Time for Completion or commits any other violation/breach of the terms and conditions of the Contract which is not rectified within [14 (fourteen)] days of the date of receipt of notice from WAPCOS Limited in this regard.
    - any of the following events occurs:
      a. the passing of a resolution by the shareholders of the Contractor for the winding up of the Contractor;

b) the appointment of a liquidator in a proceeding for the winding up of the Contractor or the Contractor entering into a compromise with its creditors; or

c) the making by the court of an order winding up the Contractor,

d) The Contractor either:

Appoints a subcontractor without the prior approval of WAPCOS Limited, or terminates any of the Subcontractor; or

having terminated any of the Subcontracts with the consent of WAPCOS Limited, appoints a replacement Sub-Contractor without the prior approval of WAPCOS Limited.

e) the Contractor without the consent of WAPCOS Limited assigns or transfers all or any of its rights or obligations under the Contract;

f) the Contractor repudiates the Contract or otherwise evidences an intention not to be bound by the Contract; or

g) the expropriation, confiscation or compulsory acquisition of the Project Facility;

h) as a result of Force Majeure, the Contractor is unable to proceed with the Works for a period of [90(ninety)] consecutive days or [180(One Hundred and Eighty)] days in a year (whichever is less);

i) if the Contractor or any of its servants or agents commit or suffer to be committed or omit or suffer to be omitted any act, deed, matter or thing which in the opinion of WAPCOS Limited Representative whose decision (without an obligation to give reasons therefor) in this regard will be final, is prejudicial to the interests or reputation of WAPCOS Limited.

j) the Contractor offers, gives or promises any payment directly or indirectly to any government, political party, or official thereof, or any candidate for political office, or to WAPCOS Limited in order to influence any substantive decision of, or induce any party or person to use its influence to offset any substantive decision of any Relevant Authority or Statutory Authority or WAPCOS Limited in regard to any aspect of the Contract;

k) the Contractor makes any warranty or representation in or in accordance with the Contract which was materially incorrect when made so as to materially affect WAPCOS Limited interests; or

l) in the event that the Contractor's liability for Liquidated Damages reaches the cap on such damages as set out in Special Conditions of Contract and the Completion Certificate for the whole of the Works has not been issued; or

m) fails to provide, maintain or renew and/or comply with its obligations in relation to the Performance Security; or

- the Contractor has, without valid reason and WAPCOS Limited consent, failed to commence the Works promptly, or fails to progress the Works regularly and/or diligently, or has suspended the progress of the Works for more than [7 (seven) days;] or

- the Contractor has failed to adhere to the Technical Specifications and Drawings and in the reasonable estimation of the WAPCOS Limited Representative, such failure is likely to mean that Completion of the Works is likely to be delayed beyond the relevant Time for Completion; or
- the Contractor's personnel is/are incompetent, have acted in a manner prejudicial to WAPCOS Limited best interest or have failed to comply with WAPCOS Limited health, safety, environment or other rules or regulations and procedures; or
- he Contractor has failed to achieve two Milestones consecutively.

Termination Procedure

- A notice of termination given pursuant to this Clause 39 [Termination] (each a "Preliminary Termination Notice") shall specify in reasonable detail the circumstances giving rise to the Preliminary Termination Notice. If, within [21 (twenty one)] days following the service by WAPCOS Limited of a Preliminary Termination Notice, the Contractor pays all sums which are due and payable to WAPCOS Limited or remedies the breach to the satisfaction of WAPCOS Limited
- existing as at the date of the Preliminary Termination Notice then: -
    - such Preliminary Termination Notice shall be revoked and all existing rights of termination in favour of WAPCOS Limited under the Contract shall terminate (but without prejudice to any rights of WAPCOS Limited in respect of any future breach of the Contract); and
    - The Contractor shall continue to perform its obligations under the Contract in a diligent and proper manner. Within the period of [21 (twenty one)] days following the receipt of the Preliminary Termination Notice by the Contractor and unless the Parties shall have otherwise agreed or the circumstances giving rise to the Preliminary Termination Notice shall have ceased to exist or shall have not been remedied, WAPCOS Limited may terminate the Contract by giving written notice (a "Termination Notice") to the Contractor and the Contract shall terminate on the date mentioned in the Termination Notice ("Termination Date"). The termination of the Contract by WAPCOS Limited for reasons other than breach can be made by a written notice to the Contractor and nothing herein will obligate WAPCOS Limited to terminate the Contract or be liable for any exercising its right of termination and WAPCOS Limited may pursue all remedies available in law instead of termination.

Upon Termination

Upon Termination for any reason whatsoever, the Contractor shall to the extent instructed by the WAPCOS Limited Representative:

(i) cease all further work as instructed by the WAPCOS Limited 's Representative in the Termination Notice and the Contractor shall carry out works for the sole purpose of securing,

preserving and protecting that part of the Works already Executed and any work required to leave the Project Site and the Works in a clean and safe condition;

(ii) remove all the Contractor's Equipment and Temporary Works;

(iii) repatriate the Contractor's and Subcontractor's personnel from any part of

(iv) the Project Site and the Works;

(v) deliver to WAPCOS Limited the Works Executed by the Contractor as at the Termination Date;

(vi) ensure that it and those it is contractually or otherwise responsible for, vacate the Project Site;
(vii) deliver to WAPCOS Limited "as built drawings" showing all work carried out since commencement of the Works; and
(viii) promptly and in an orderly manner deliver to WAPCOS Limited all documents relating to the Works which are for the time being under the control of the Contractor;
Without prejudice to Clause [Upon Termination] upon Termination:
(i) WAPCOS Limited may enter the Project Site and the Works thereof and expel the Contractor there from and WAPCOS Limited may complete the Works itself or by employing any third party;
(ii) WAPCOS Limited may, to the exclusion of any right of the Contractor over the same, take over and have free use, without payment to the Contractor, of any Contractor's Equipment and Temporary Works of which have been delivered to the Project Site for such period as the WAPCOS Limited Representative considers necessary for the Execution of the Works, without
(iii) being responsible to the Contractor for fair wear and tear thereof and to the exclusion of any right of the Contractor over the same.
(iv) WAPCOS Limited may at any time sell any of the said Contractor's Equipment, Temporary Works and any unused materials and apply the proceeds of sale in or towards for satisfaction of any sums due or which may become due to it from the Contractor under the Contract; and
(v) WAPCOS Limited shall have the power and authority to prohibit the Contractor and any person claiming through or under the Contractor from entering the Project Site.
(vi) In the event of termination of the contract WAPCOS Limited shall be entitled to recover Liquidated Damages up to ten percent (10%) of the contract value and forfeit the Performance Guarantee and Security Deposit made by the Contractor besides getting the work completed by other means at the risk and cost of the Contractor.

TERMINATION OF CONTRACT ON DEATH OF CONTRACTOR

Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the Engineer-In-Charge on behalf of the WAPCOS shall have the option of terminating the contract without compensation to the contractor.

CLAUSE 40: IF RELATIVE WORKING IN WAPCOS THEN THE CONTRACTOR NOT ALLOWED TO TENDER

- The contractor shall not be permitted to tender for works in the WAPCOS responsible for award and execution of contracts in which his near relative is posted in WAPCOS. He shall also intimate the names of persons who are working with him in any capacity or are

subsequently employed by him and who are near relatives to any Officer in the WAPCOS. Any breach of this condition by the contractor would render him liable to be debarred from tendering in WAPCOS any breach of this condition.

- NOTE: By the term "near relatives" is meant wife, husband, parents and grandparents, children and grandchildren, brothers and sisters, uncles, aunts and cousins and their corresponding in-laws.

CLAUSE 41: NO GAZETTED ENGINEER TO WORK AS CONTRACTOR WITHIN ONE YEAR OF RETIREMENT

- No engineer of gazette rank or other gazette officer employed in engineering or administrative duties in an engineering department of the Government of India shall work as a contractor or employee of a contractor for a period of one year after his retirement from government service without the previous permission of Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of Government of India as aforesaid, before submission of the tender or engagement in the contractor's service, as the case may be.

CLAUSE 42: RETURN OF MATERIALS & RECOVERY FOR MATERIAL ISSUED

(i) After completion of the work and also at any intermediate stage in the event of non-reconciliation of materials issued, consumed and in balance - (see Clause 10), theoretical quantity of materials issued by the WAPCOS for use in the work shall be calculated on the basis and method given hereunder: -

(a) Quantity of cement & bitumen shall be calculated on the basis of quantity of cement & bitumen required for different items of work as shown in the Schedule of Rates mentioned in Special Conditions of Contract. In case any item is executed for which standard constants for the consumption of cement or bitumen are not available in the above mentioned schedule/statement or cannot be derived from the same shall be calculated on the basis of standard formula to be laid down by the Engineer-in-Charge.

(b) Theoretical quantity of steel reinforcement or structural steel sections shall be taken as the quantity required as per design or as authorized by Engineer-in-Charge, including authorized lap pages, chairs etc. plus 3% wastage due to cutting into pieces, such theoretical quantity being determined and compared with the actual issues each diameter wise, section wise and category wise separately.

(c) Theoretical quantity of G.I. & C.I. or other pipes, conduits, wires and cables, pig lead and G.I./M.S. sheets shall be taken as quantity actually required and measured plus 5% for wastage due to cutting into pieces (except in the case of G.I./M.S. sheets it shall be 10%), such determination & comparison being made diameter wise & category wise.

(d) For any other material as per actual requirements.

(ii) Over the theoretical quantities of materials so computed a variation shall be allowed as specified in Special Conditions of Contract. The difference in the net quantities of material actually issued to the contractor and the theoretical quantities including such authorized variation, if not returned by the contractor or if not fully reconciled to the satisfaction of the Engineer-in-Charge within fifteen days of the issue of written notice by the Engineer-in-charge to this effect shall be recovered at the rates specified in Special Conditions of Contract, without prejudice to the provision of the relevant conditions regarding return of materials governing the contract. Decision of Engineer-in-Charge in regard to theoretical quantities of materials, which should have been actually used as per the Annexure of the standard schedule of rates and recovery at rates specified in Special Conditions of Contract, shall be final & binding on the contractor.

For nonscheduled items, the decision of the Engineer-In-Charge regarding theoretical Quantities of materials which should have been actually used, shall be final and binding on the contractor.

(iii) The said action under this clause is without prejudice to the right of the WAPCOS to take action against the contractor under any other conditions of contract for not doing the work according to the prescribed specifications.

CLAUSE 43: COMPENSATION DURING WARLIKE SITUATION

- The work (whether fully constructed or not) and all materials, machines, tools and plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the contractor until the work has been delivered to the Engineer-in-Charge and a certificate from him to that effect obtained. In the event of the work or any materials properly brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike operation, the contractor shall when ordered (in writing) by the Engineer-in-Charge to remove any debris from the site, collect and properly stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking or removal of serviceable material and for the works ordered by the Engineer-in-Charge, such payments being in addition to compensation up to the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed but not already measured and paid for, the compensation shall be assessed by the Engineer-In-Charge up to Rs. 5,000/- and by the WAPCOS for a higher amount. The contractor shall be paid for the damages/destruction suffered and for restoring the material at the rate based on analysis of rates tendered for in accordance with the provision of the contract. The certificate of the Engineer-in-Charge regarding the quality and quantity of materials and the purpose for which they were collected shall be final and binding on all parties to this contract.

- Provided always that no compensation shall be payable for any loss in consequence of hostilities or warlike operations (a) unless the contractor had taken all such precautions against air raid as are deemed necessary by the A.R.P. Officers or the Engineer-in-Charge (b) for any material etc. not on the site of the work or for any tools, plant, machinery, scaffolding, temporary building and other things not intended for the work.
- In the event of the contractor having to carry out reconstruction as aforesaid, he shall be allowed such extension of time for its completion as is considered reasonable by the Engineer-In-Charge.

CLAUSE 44: APPRENTICES ACT PROVISIONS TO BE COMPLIED WITH

- The contractor shall comply with the provisions of the Apprentices Act, 1961 and the rules and orders issued thereunder from time to time. If he fails to do so, his failure will be a breach of the contract and the WAPCOS may, in his discretion, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

CLAUSE 45: RELEASE OF SECURITY DEPOSIT AFTER LABOUR CLEARANCE

- Release of Security Deposit of the work shall not be refunded till the contractor produces a clearance deposit after labour certificate from the Labour Officer. As soon as the work is virtually complete, the contractor shall apply for the clearance certificate to the Labour Officer under intimation to the Engineer-in-Charge. The Engineer-in-Charge, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the contractor in respect of the work. If no complaint is pending, on record till after 3 months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate and the Security Deposit will be released if otherwise due.

CLAUSE46: INSURANCE

1. Requirements

Before commencing execution of works, unless stated otherwise in the special conditions of contract, it shall be obligatory for the contractor to obtain at his own cost stipulated insurance cover under the following requirements:

a) Contractor's all risk and Third Party Cover.

b) Liability under the workmen's compensation Act, 1923, Minimum Wages Act, 1948 and Contract Labour (Regulation and Abolition) Act, 1970.

c) Accidents to staff, Engineers, Supervisors and others who are not governed by workmen's compensation Act.

d) Damage to material, machinery and works due to fire theft etc.

e) Any other risk to be covered by insurance as may be specified by the employer in the special conditions of contract.

2. Policy in Joint Names of Contractor and Employer

The policy referred to under sub-clause 46(1) above shall be obtained in the joint names of the contractor and the employer and shall inter-alia provide coverage against the following, arising out of or in connection with execution of works, their maintenance and performance of the contract.

a) Loss of life or injury involving public, employee of the contractor, or that of employer and Engineer, labour etc.

b) Injury, loss or damage to the works or property belonging to public, government bodies, local authorities, utility organizations, contractors, employer or others.

3. Currency of Policy

The policies shall remain in force throughout the period of execution of the works and till the expiry of the defect liability period. The contractor shall, whenever called upon, produce to the engineer or his representative the various insurance policies obtained by him as also the rates of premia and the premia paid by him to ensure that the polices indeed continue to be in force. If the contractor fails to effect or keep in force or provide adequate cover in the insurance policies mentioned in the sub clause 46(1) or any other insurance he might be required to effect under the contract, then in such cases, the employer may effect and keep in force any such insurance or further insurance and the cost and expenses incurred by him in this regard shall be deductible from payments due to the contractor or from the contractor's performance security.

CLAUSE 47: CONDITIONS SPECIFIC TO GREEN BUILDINGS PRACTICES CLAUSE

The contractor shall strictly adhere to the following conditions as part of his contractual obligations:

1. SITE

1.1 The contractor shall ensure that adequate measures are taken for the prevention of erosion of the top soil during the construction phase. The contractor shall implement the Erosion and Sedimentation Control Plan (ESCP) provided to him by the Engineer-in-charge as part of the larger Construction Management Plan (CMP). The contractor shall obtain the Erosion and Sedimentation Control Plan (ESCP) Guidelines from the Engineer-in-charge and then prepare "working plan" for the following month's activities as a CAD drawing showing the construction management, staging & ESCP. At no time soil should be allowed to erode away from the site and sediments should be trapped where necessary.

1.2 The contractor shall ensure that all the top soil excavated during construction works is neatly stacked and is not mixed with other excavated earth. The contractors shall take the clearance of the architects / Engineer-in-charge before any excavation. Top soil should be

stripped to a depth of 20 cm (centimetres) from the areas to be disturbed, for example proposed area for buildings, roads, paved areas, external services and area required for construction activities etc. It shall be stockpiled to a maximum height of 40 cm in designated areas, covered or stabilised with temporary seeding for erosion prevention and shall be reapplied to site during plantation of the proposed vegetation. Top soil shall be separated from subsoil, debris and stones larger than 50 mm (millimeter) diameter. The stored top soil may be used as finished grade for planting areas.

1.3 The contractor shall carry out the recommendations of the soil test report for improving the soil under the guidance of the Engineer-in-charge who would also advise on the timing of application of fertilizers and warn about excessive nutrient levels.

1.4 The contactor shall carry out post-construction placement of topsoil or other suitable plant material over disturbed lands to provide suitable soil medium for vegetative growth. Prior to spreading the topsoil, the sub-grade shall be loosened to a depth of 50mm to permit bonding. Topsoil shall be spread uniformly at a minimum compacted depth of 50mm on grade 1:3 or steeper slopes, a minimum depth of 100mm on shallower slopes. A depth of 300mm is preferred on relatively flatter land.

1.5 The Contractor should follow the construction plan as proposed by the Engineer-in-charge to minimize the site disturbance such as soil pollution due to spilling. Use staging and spill prevention and control plan to restrict the spilling of the contaminating material on site. Protect top soil from erosion by collection storage and reapplication of top soil, constructing sediment basin, contour trenching, mulching etc.

1.6 No excavated earth shall be removed from the campus unless suggested otherwise by Engineer-in-charge. All subsoil shall be reused in backfilling/landscape, etc as per the instructions of the Engineer-in-charge

1.7 The contractor shall not change the natural gradient of the ground unless specifically instructed by the architect's / landscape consultant. This shall cover all natural features like water bodies, drainage gullies, slopes, mounds, depressions, rocky outcrops, etc. Existing drainage patterns through or into any preservation area shall not be modified unless specifically directed by the Engineer-in-charge.

1.8 The contractor shall not carry out any work which results in the blockage of natural drainage.

1.9 The contractor shall ensure that existing grades of soil shall be maintained around existing vegetation and lowering or raising the levels around the vegetation is not allowed unless specifically directed by the Engineer-in-charge

1.10 Contractor shall reduce pollution and land development impacts from automobiles use during construction.

1.11 Overloading of trucks is unlawful and creates and erosion and sedimentation problems, especially when loose materials like stone dust, excavated earth, sand etc. are moved. Proper covering must take place. No overloading shall be permitted.

2. CONSTRUCTION PHASE AND WORKER FACILITIES

2.1 The contractor shall specify and limit construction activity in preplanned/ designated areas and shall start construction work after securing the approval for the same from the Engineer-in-charge. This shall include areas of construction, storage of materials, and material and personnel movement.

2.2 Preserve and Protect Landscape during Construction

a) The contractor shall ensure that no trees, existing or otherwise, shall be harmed and damage to roots should be prevented during trenching, placing backfill, driving or parking heavy equipment, dumping of trash, oil, paint, and other materials detrimental to plant health. These activities should be restricted to the areas outside of the canopy of the tree, or, from a safe distance from the tree/plant by means of barricading. Trees will not be used for support; their trunks shall not be damaged by cutting and carving or by nailing posters, advertisements or other material. Lighting of fires or carrying out heat or gas emitting construction activity within the ground, covered by canopy of the tree is not to be permitted.

b) The contractor shall take steps to protect trees or saplings identified for preservation within the construction site using tree guards of approved specification.

c) The contractor shall conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity. Contractor should limit all construction activity within the specified area as per the Construction Management Plan (CMP) proposed by the Engineer-in-charge. All the existing trees should be preserved, if not possible than compensate the loss by re-planting trees in the proportion of 1:3.

d) The contractor shall avoid cut and fill in the root zones, through delineating and fencing the drip line (the spread limit of a canopy projected on the ground) of all the trees or group of trees. Separate the zones of movement of heavy equipment, parking, or excessive foot traffic from the fenced plant protection zones.

e) The contractor shall ensure that maintenance activities shall be performed as needed to ensure that the vegetation remains healthy. The preserved vegetated area shall be inspected by the Engineer-in-charge at regular intervals so that they remain undisturbed. The date of inspection, type of maintenance or restorative action followed shall be recorded in the logbook.

2.3 Contractor shall be required to develop and implement a waste management plan, quantifying material diversion goals. He shall establish goals for diversion from disposal in landfills and incinerators and adopt a construction waste management plan to achieve these goals. A project-vide policy of “Nothing leaves the Site” should be followed. In such a case when

strictly followed, care would automatically be taken in ordering and timing of materials such that excess doesn't become "waste". The Contractor's ingenuity is especially called towards meeting this prerequisite/ credit (GRIHA). Consider recycling cardboard, metal, brick, acoustical tile, concrete, plastic, clean wood, glass, gypsum wallboard, carpet and insulation. Designate a specific area(s) on the construction site for segregated or commingled collection of recyclable material, and track recycling efforts throughout the construction process. Identify construction haulers and recyclers to handle the designated materials. Note that diversion may include donation of materials to charitable organizations and salvage of materials on-site.

2.4 Contractor shall collect all construction waste generated on site. Segregate these wastes based on their utility and examine means of sending such waste to manufacturing units which use them as raw material or other site which require it for specific purpose. Typical construction debris could be broken bricks, steel bars, broken tiles, spilled concrete and mortar etc.

2.5 The contractor shall provide clean drinking water for all workers

2.6 The contractor shall provide the minimum level of sanitation and safety facilities for the workers at site. The contractor shall ensure cleanliness of workplace with regard to the disposal of waste and effluent; provide clean drinking water and latrines and urinals as per applicable standard. Adequate toilet facilities shall be provided for the workman within easy access of their place of work. The total no. to be provided shall not be less than 1 per 30 employs in any one shift. Toilet facilities shall be provided from the start of building operations, connection to a sewer shall be made as soon as practicable. Every toilet shall be so constructed that the occupant is sheltered from view and protected from the weather and falling objects. Toilet facilities shall be maintained in a sanitary condition. A sufficient quantity of disinfectant shall be provided. Natural or artificial illumination shall be provided.

2.7 The contractor shall ensure that air pollution due to dust/generators is kept to a minimum, preventing any adverse effects on the workers and other people in and around the site. The contractor shall ensure proper screening, covering stockpiles, covering brick and loads of dusty materials, wheel-washing facility, gravel pit, and water spraying. Contractor shall ensure the following activities to prevent air pollution during construction:

a) Clear vegetation only from areas where work will start right away

b) Vegetate / mulch areas where vehicles do not ply.

c) Apply gravel / landscaping rock to the areas where mulching / paving is impractical

d) Identify roads on-site that would be used for vehicular traffic. Upgrade vehicular roads (if these are unpaved) by increasing the surface strength by improving particle size, shape and mineral types that make up the surface & base. Add surface gravel to reduce source of dust emission. Limit amount of fine particles (smaller than 0.075mm) to 10 – 20%

e) Water spray, through a simple hose for small projects, to keep dust under control. Fine mists should be used to control fine particulate. However, this should be done with care so as not to waste water. Heavy watering can also create mud, which when tracked onto paved public roadways, must be promptly removed. Also, there must be an adequate supply of clean water nearby to ensure that spray nozzles don't get plugged. Water spraying can be done on:

i) Any dusty materials before transferring, loading and unloading

ii) Area where demolition work is being carried out

iii) Any un-paved main haul road

iv) Areas where excavation or earth moving activities are to be carried out

f) The contractor shall ensure that the speed of vehicles within the site is limited to 10 km/hr.

g) All material storages should be adequately covered and contained so that they are not exposed to situations where winds on site could lead to dust / particulate emissions.

h) Spills of dirt or dusty materials will be cleaned up promptly so the spilled material does not become a source of fugitive dust and also to prevent of seepage of pollutant laden water into the ground aquifers. When cleaning up the spill, ensure that the clean-up process does not generate additional dust. Similarly, spilled concrete slurries or liquid wastes should be contained / cleaned up immediately before they can infiltrate into the soil / ground or runoff in nearby areas

i) Provide hoardings of not less than 3m high along the site boundary, next to a road or other public area

j) Provide dust screens, sheeting or netting to scaffold along the perimeter of the building Cover stockpiles of dusty material with impervious sheeting

k) Cover dusty load on vehicles by impervious sheeting before they leave the site

2.8 Contractor shall be required to provide an easily accessible area that serves the entire building and is dedicated to the separation, collection and storage of materials for recycling including (at a minimum) paper, corrugated cardboard, glass, plastics, and metals. He shall coordinate the size and functionality of the recycling areas with the anticipated collections services for glass, plastic, office paper, newspaper, cardboard, and organic wastes to maximize the effectiveness of the dedicated areas. Consider employing cardboard balers, aluminum can crushers, recycling chutes, and collection bins at individual workstations to further enhance the recycling program.

2.9 The contractor shall ensure that no construction leach ate (Ex: cement slurry), is allowed to percolate into the ground. Adequate precautions are to be taken to safeguard against this including, reduction of wasteful curing processes, collection, basic filtering and reuse. The

contractor shall follow requisite measures for collecting drainage water run-off from construction areas and material storage sites and diverting water flow away from such polluted areas. Temporary drainage channels, perimeter dike/swale, etc. shall be constructed to carry the pollutant-laden water directly to the treatment device or facility (municipal sewer line).

2.10 Staging (dividing a construction area into two or more areas to minimize the area of soil that will be exposed at any given time) should be done to separate undisturbed land from land disturbed by construction activity and material storage.

2.11 The contractor shall Comply with the safety procedures, norms and guidelines (as applicable) as outlined in the document Part 7 _Constructional practices and safety, 2005, National Building code of India, Bureau of Indian Standards. A copy of all pertinent regulations and notices concerning accidents, injury and first-aid shall be prominently exhibited at the work site. Depending upon the scope & nature of work, a person qualified in first-aid shall be available at work site to render and direct first-aid to causalities. A telephone may be provided to first-aid assistant with telephone numbers of the hospitals displayed. Complete reports of all accidents and action taken thereon shall be forwarded to the competent authorities.

2.12 The contractor shall ensure the following activities for construction workers safety, among other measures:

a) Guarding all parts of dangerous machinery.

b) Precautionary signs for working on machinery

c) Maintaining hoists and lifts, lifting machines, chains, ropes, and other lifting tackles in good condition.

d) Durable and reusable formwork systems to replace timber formwork and ensure that formwork where used is properly maintained.

e) Ensuring that walking surfaces or boards at height are of sound construction and are provided with safety rails or belts.

f) Provide protective equipment; helmets etc.

g) Provide measures to prevent fires. Fire extinguishers and buckets of sand to be provided in the fire-prone area and elsewhere.

h) Provide sufficient and suitable light for working during night time.

2.13 Adopt additional best practices, prescribed norms in construction industry.

2.14 The storage of material shall be as per standard good practices as specified in Part 7, Section 2 – Storage, Stacking and Handling practices, NBC 2005 and shall be to the satisfaction of the Engineer-in-charge to ensure minimum wastage and to prevent any misuse, damage, inconvenience or accident. Watch and ward of the Contractor's materials shall be his own

responsibility. There should be a proper planning of the layout for stacking and storage of different materials, components and equipment's with proper access and proper maneuverability of the vehicles carrying the materials. While planning the layout, the requirements of various materials, components and equipment's at different stages of construction shall be considered. The Owner shall not take any responsibility on any account.

2.15 The contractor shall provide for adequate number of garbage bins around the construction site and the workers facilities and will be responsible for the proper utilization of these bins for any solid waste generated during the construction. The contractor shall ensure that the site and the workers facilities are kept litter free. Separate bins should be provided for plastic, glass, metal, biological and paper waste and labelled in both Hindi and English.

2.16 The contractor shall prepare and submit 'Spill prevention and control plans' before the start of construction, clearly stating measures to stop the source of the spill, to contain the spill, to dispose the contaminated material and hazardous wastes, and stating designation of personnel trained to prevent and control spills. Hazardous wastes include pesticides, paints, cleaners, and petroleum products.

2.17 Contractor shall collect the relevant material certificates for materials with high recycled (both post-industrial and post-consumer) content, including materials for structural use like TMT steel rolled with high percentage of recycled steel, and RMC mix with fly-ash etc.

2.18 Contractor shall collect the relevant material certificates for rapidly renewable materials such as bamboo, wool, cotton insulation, agrifiber, linoleum, wheat board, strawboard and cork.

2.19 Contractor shall adopt an IAQ (Indoor Air Quality) management plan to protect the system during construction, control pollutant sources, and interrupt pathways for contamination. He shall sequence installation of materials to avoid contamination of absorptive materials such as insulation, carpeting, ceiling tile, and gypsum wallboard. He shall also protect stored on-site or installed absorptive materials from moisture damage.

2.20 The contractor shall ensure that a flush out of all internal spaces is conducted prior to and over. This shall comprise an opening of all doors and windows for 14 days to vent out any toxic fumes due to paints, varnishes, polishes, etc.

2.21 Contractor shall make efforts to reduce the quantity of indoor air contaminants that are dorous or potentially irritating harmful to the comfort and well-being of installer and building occupants. Contractor shall ensure that the VOC (Volatile Organic Compounds) content of paints, coatings and primers used must not exceed the VOC content limits mentioned below:

Paints
Non-flat - 150 g/L
Flat (Mat) - 50 g/L
Anti corrosive/ anti rust - 250 g/L

Coatings
Clear wood finishes
Varnish - 350 g/L
Lacquer - 550 g/L
Floor coatings - 100 g/L
Stains - 250 g/L
Sealers
Waterproofing sealer - 250 g/L
Sanding sealer - 275 g/L
Other sealers - 200 g/L
The VOC (Volatile Organic Compounds) content of adhesives and sealants used must be less than **VOC content limits mentioned:**
Architectural Applications VOC Limit (g/l less water)
Indoor Carpet adhesives - 50
Carpet Pad Adhesives - 50
Wood Flooring Adhesive - 100
Rubber Floor Adhesives - 60
Sub Floor Adhesives - 50
Ceramic Tile Adhesives - 65
VCT and Asphalt Tile adhesives - 50
Dry Wall and Panel Adhesives - 50
Structural Glazing Adhesives - 100
Multipurpose Construction Adhesives - 70
Substrate Specific Application VOC Limit (g/l less water)
Metal to Metal - 30
Plastic Foams - 50
Porous material (except wood) - 50
Wood - 30
Fiber Glass – 80
2.22 Wherever required, Contractor shall meet and carry out documentation of all activities on site, supplementation of information, and submittals in accordance with GRIHA program standards and guidelines. Towards meeting the aforementioned building environmental rating standard(s) expert assistance shall be provided to him up on request.

2.23 Water Use during Construction

Contractor should spray curing water on concrete structure and shall not allow free flow of water. After liberal curing on the first day, all the verticals surfaces of concrete structures should be painted with curing chemical to save water nothing extra shall be paid. Concrete structures should be kept covered with thick cloth/gunny bags and water should be sprayed on them. Contractor shall do water ponding on all sunken slabs using cement and sand mortar.

2.24 The Contractor shall remove from site all rubbish and debris generated by the Works and keep Works clean and tidy throughout the Contract Period. All the serviceable and nonservice able (malba) material shall be segregated and stored separately. The malba obtained during construction shall be collected in well-formed heaps at properly selected places, keeping in a view safe condition for workmen in the area. Materials which are likely to cause dust nuisance or undue environmental pollution in any other way, shall be removed from the site at the earliest and till then they shall be suitable covered. Glass & steel should be dumped or buried separately to prevent injury. The work of removal of debris should be carried out during day. In case of poor visibility artificial light may be provided.

2.25 MATERIALS & FIXTURES FOR THE PROJECT

2.26 The contractor shall endeavor to source most of the materials for construction at this project within a distance of 800 km radius from the project site. Contractor shall collect the relevant material certificates to prove the same

a) Any material that is to be sourced from outside the prescribed radius shall be done after securing the necessary approval from the Engineer-in-charge.

b) All cement used at site for reinforced concrete, precast members, mortar, plaster, building blocks, etc shall be OPC (Ordinary Portland Cement). The OPC must meet the requirements of IS IS : 8112.

c) As a measure to reduce wastage and water consumption during construction, the contractor shall source or set up the infrastructure for a small scale ready mix concrete, all concreting works at site shall utilise only batch mix concrete.

d) The contractor has to comply as per MoEF issued notification 8.0.763(E) dated 14th Sept.1999 containing directive for greater fly ash utilization, where it stipulates that ii. Every construction agency engaged in the construction of buildings within a radius of 50 km radius of a Thermal Power Plant, have to use of 100% fly ash based bricks/blocks in their construction. Any brick/block containing more than 25% fly ash is designated as fly ash brick/block. As per GRIHA credits, bricks / blocks should contain more than 40% fly ash.

e) The contractor shall ensure that sand from approved source is used in place of sand in an all concreting works unless specifically instructed otherwise by the Engineer-in-charge.

f) Timber and aluminum use should be minimized in the project. If used, timber shall constitute of reclaimed timber and aluminum shall constitute recycled content. The source of such reclaimed timber shall be approved by the Engineer-in-charge.

g) The contractor shall ensure that nontoxic anti-termite and other pest control is strictly used.

h) The contractor shall ensure that all paints, polishes, adhesives and sealants used both internally and externally, on any surface, shall be Low VOC products. The contractor shall get prior approval from the Engineer-in-charge before the application of any such material.

i) All plumbing and sanitary fixtures installed shall be as per the requirement of the of the GRIHA and shall adhere to the minimum LPM and LPF mentioned.

j) The contractor shall employ 100% zero ODP (ozone depletion potential) insulation; HCFC hydro-chlorofluorocarbon)/ and CFC (chlorofluorocarbon) free HVAC and refrigeration equipment's and/halon-free fire suppression and fire extinguishing systems.

k) The contractor shall ensure that all composite wood products/agro-fiber products used for cabinet work, etc do not contain any added urea formaldehyde resin.

2.28 CONSTRUCTION WASTE

a) Contractor shall ensure that wastage of construction material is kept to a maximum of 3%.

b) All construction debris generated during construction shall be carefully segregated and stored in a demarcated waste yard. Clear, identifiable areas shall be provided for each waste type. Employ measures to segregate the waste on site into inert, chemical, or hazardous wastes.

c) All construction debris shall be used for road preparation, back filling, etc, as per the instructions of the Engineer-in-charge, with necessary activities of sorting, crushing, etc.

d) No construction debris shall be taken away from the site, without the prior approval of the Engineer-in-charge.

e) The contractor shall recycle the unused chemical/hazardous wastes such as oil, paint, batteries, and asbestos

f) If and when construction debris is taken out of the site, after prior permissions from the Project Manager, then the contractor shall ensure the safe disposal of all wastes and will only dispose of any such construction waste in approved dumping sites.

g) Inert waste to be disposed off by Municipal Corporation/ local bodies at landfill sites.

2.29 Documentation

a) The contractor shall, during the entire tenure of the construction phase, submit the following records to the Engineer-in-charge on a monthly basis:

i) Water consumption in liters

ii) Electricity consumption in 'kwh' units

iii) Diesel consumption in liters

iv) Quantum of waste generated at site and the segregated waste types divided into inert, chemical and hazardous wastes.

v) Digital photo documentation to demonstrate compliance of safety guidelines as specified here.

b) The contractor shall, during the entire tenure of the construction phase, submit the following records to the Engineer-in-charge on a weekly basis:

i) Quantities of material brought into the site, including the material issued to the contractor by the client.

ii) Quantities of construction debris (if at all) taken out of the site

iii) Digital photographs of the works at site, the worker's facilities, the waste and other material storage yards, pre-fabrication and block making works, etc as guided by the Engineer-in-charge.

c) The contractor shall submit one document after construction of the buildings, a brief description along with photographic records to show that other areas have not been disrupted during construction. The document should also include brief explanation and photographic records to show erosion and sedimentation control measures adopted. (Document CAD drawing showing site plan details of existing vegetation, existing buildings, existing slopes and site drainage pattern, staging and spill prevention measures, erosion and sedimentation control measures and measures adopted for top soil preservation during construction

d) The contractor shall submit to the Engineer-in-charge after construction of the buildings, a detailed as built quantification of the following:

i) Total materials used,

ii) Total top soil stacked and total reused

iii) Total earth excavated,

iv) Total waste generated,

v) Total waste reused,

vi) Total water used,

vii) Total electricity, and

viii) Total diesel consumed.

e) The contractor shall submit to the Engineer-in-charge, before the start of construction, a site plan along with a narrative to demarcate areas on site from which top soil has to be gathered, designate area where it will be stored, measures adopted for top soil preservation and indicate areas where it will be reapplied after construction is complete.

f) The contractor shall submit to the Engineer-in-charge, a detailed narrative (not more than 250 words) on provision for safe drinking water and sanitation facility for construction workers and site personnel.

g) Provide supporting document from the manufacturer of the cement specifying the fly-ash content in PPC used in reinforced concrete.

h) Provide supporting document from the manufacturer of the pre-cast building blocks specifying the fly ash content of the blocks used in an infill wall system.

i) The contractor shall, at the end of construction of the buildings, submit to the Engineer-incharge, submit following information, for all material brought to site for construction purposes, including manufacturer's certifications, verifying information, and test data, where Specifications sections require data relating to environmental issues including but not limited to:

i) Source of products: Supplier details and location of the supplier and brand name.

ii) Project Recyclability: Submit information to assist Owner and Contractor in recycling materials involved in shipping, handling, and delivery, and for temporary materials necessary for installation of products.

iii) Recycled Content: Submit information regarding product postindustrial recycled and post-consumer recycled content. Use the "Recycled Content Certification Form", to be provided by the Commissioning Authority appointed for the Project.

iv) Product Recyclability: Submit information regarding product and product's component's recyclability including potential sources accepting recyclable materials.

v) Clean tech: Provide pollution clearance certificates from all manufacturers of materials

vi) Indoor Air quality and Environmental Issues: Submit following certificates:

a. Certifications from manufacturers of Low VOC paints, adhesives, sealant and polishes used at this particular project site.

b. Certification from manufacturers of composite wood products/agro fibre products on the absence of added urea formaldehyde resin in the products supplied to them to this particular site.

c. Submit environmental and pollution clearance certificates for all diesel generators installed as part of this project.

j) Provide total support to the Engineer-in-charge appointed by the owner in completing all Green Building Rating related formalities, including signing of forms, providing signed letters in the contractor's letterhead.

2.30 EQUIPMENT

a) To ensure energy efficiency during and post construction all pumps, motors and engines used during construction or installed, shall be subject to approval and as per the specifications of the architects.

b) All lighting installed by the contractor around the site and at the labour quarters during construction shall be CFL/LED bulbs of the appropriate illumination levels. This condition is a must, unless specifically prescribed.

The contractor is expected to go through all other conditions of the GRIHA rating stipulations, which can be provided to him by the architects.

Failure to adhere to any of the above mentioned items, without necessary clearances from the architects and the Engineer-in-charge, shall be deemed as a violation of contract and the contractor shall be held liable for penalty as determined by the architects.

CLAUSE 48: PAYMENT

1. Payment Schedule

The Payment Schedule includes a schedule setting out each Milestone Event to be achieved in a month for the Works.

2. Contractor's Application for Payment

From the date of issue of the Notice to Proceed, on the 5th (fifth) Business Day of any month, the Contractor may submit a Request for Payment, to WAPCOS Limited Representative in respect of the preceding month.

Within each Request for Payment the Contractor shall show separately:

(i) the amounts which the Contractor claims to be payable as the cost of the Works completed during that month; and

(ii) the cumulative amount of all prior payments made by WAPCOS Limited; and

(iii) any amounts to which the Contractor considers are due and payable to it in accordance with the provisions of the Contract.

The Contractor's Request for Payment shall:

(i) be prepared on forms in the form and in a number advised by WAPCOS Limited Representative; and

(ii) contain confirmation of the relevant Milestone Events which, in the opinion of the Contractor have been achieved in that month which applies to each such Milestone Event; and

(iii) be accompanied by:

(a) Copy of relevant records of measurement of works, jointly taken and signed by both the parties;

(b) A status report describing in such detail as may reasonably request, the percentage of any uncompleted Milestone Event for the month in question and the work to be undertaken by the Contractor prior to the next Request for Payment;

(c) Certification by WAPCOS Limited Representative confirming that the Milestone Events referred to in the Request for Payment have been achieved.

(d) Confirmation by the Contractor of any amounts due and owing from the Contractor to WAPCOS Limited pursuant to the Contract;

(e) The Contractor's certification that the quality of all completed Works accords with the requirements of the Contract;

(f) The Contractor's certification that each obligation, item of cost or expense mentioned in that Request for Payment has not been the basis of any previous payment.

(g) The Contractor's certification that it has reviewed all financial and budget data contained in the Request for Payment;

(h) The Contractor's certification that the quality of all completed Works accords with the requirements of the Contract;

(i) The Contractor's certification that each obligation, item of cost or expense mentioned in that Request for Payment has not been the basis of any previous payment; and

(j) The Contractor's certification that each Subcontractor who performed part of the Works which was included in the immediately preceding Certificates of Payment was paid all amounts then due to it for such Works

(k) The Contractor providing evidence of the validity of the Contractor’s Insurances.

3. Certificates of Payment

Within [21 (Twenty One)] Business Days of receipt of the Contractor's Request for Payment under Clause 48(2) [Contractor's Application for Payment], WAPCOS Limited and WAPCOS Limited Representative shall review such request and, shall issue to the Contractor, a Certificate of Payment certifying what amounts WAPCOS Limited shall pay. Each Certificate of Payment shall be for an amount which in the opinion of WAPCOS Limited, is the basis of the Request for Payment and pursuant to the Contract, is properly due to the Contractor (the “Gross Certifiable Amount”) less (i) the cumulative amounts of payments previously certified as due to the Contractor, (ii) any deduction on account of recovery of Advance Payment, and (iii) Retention Amount.

In the event that the Contractor fails to achieve any Milestone Event specified in the Payment Schedule, the Contractor shall not be entitled to the payment value attributable to that Milestone Event until the relevant Milestone Event has been achieved. When the relevant Milestone Event is achieved, the Contractor may include the payment value attributable to the Milestone Event in the next Request for Payment.

No sum shall be included in the Certificate of Payment in respect of Materials yet to be incorporated into the Permanent Works unless the WAPCOS Limited Representative is satisfied that:

(i) such Materials have been properly acquired and properly and not prematurely delivered to the Project Site;

(ii) such Materials have been properly stored on the Project Site and fully protected against loss, damage or deterioration;

(iii) the Contractor's records of the requisitions, orders, receipts and use of any Materials are kept in a form approved by the WAPCOS Limited Representative, and such records are available for inspection by the WAPCOS Limited Representative; and

(iv) The Contractor has submitted a proper statement of the cost of acquiring the Materials together with such documents as may be required for evidencing such cost.

Without prejudice to any other rights of WAPCOS Limited to withhold payment to the Contractor, WAPCOS Limited may withhold from any payment due to the Contractor such amount as WAPCOS Limited deems reasonably necessary or appropriate:

(i) if in the opinion of the WAPCOS Limited Representative the progress of the Works at the time of the Request for Payment is behind the progress of the Works as set out in the Programme; and/or

(ii) to protect it from any losses, expenses, costs or liability because of any one or more of the following reasons:

(a) defects and deficiencies in any Works, whether or not payment has been made;

(b) unsatisfactory performance of the Contract;

(c) the filing of third party claims relating to the Works or any of its commitment parts for which the Contractor is liable;

(d) the Contractor's failure to make payments to Subcontractors;

(e) failure by the Contractor to provide or procure replacement Performance Security in accordance with the Contract;

(f) failure by the Contract to provide evidence of insurance coverage in accordance with the Contract;

(g) reasonable evidence that Completion will not occur by the Time for Completion;

(h) any overpayments made by WAPCOS Limited with respect to a previous payment;

(i) failure by the Contractor to submit a properly updated monthly Programme and

(j) failure by the Contractor to provide satisfactory evidence that the costs of all labour and Materials and other obligations arising out of the Contract have been fully satisfied and discharged by the Contractor and/or to otherwise fail to submit adequate supporting documentation for any Request for Payment.

Any Provisional Sum Works shall only be executed in whole or part upon the WAPCOS Limited Representative's instruction. If the WAPCOS Limited Representative issues no such instruction, the Provisional Sum Works shall not form part of the Works and the Contractor shall not be entitled to payment for it. The Contractor shall be deemed to have allowed the necessary time and resources to enable design and Execution of the Provisional Sum Works in so far as the scope and nature of the Provisional Sum Works was reasonably foreseeable.

The Contractor shall be entitled only to such amount in respect of the Provisional Sum Works as the WAPCOS Limited Representative determines in accordance with this Clause 48(3). The WAPCOS Limited Representative shall notify the Contractor of any such determination. The WAPCOS Limited Representative shall have the authority to issue instructions to the Contractor for every Provisional Sum Works for which the Contractor shall be entitled to a part of the Provisional Sum as determined by the WAPCOS Limited Representative.

The Contractor shall produce to the WAPCOS Limited Representative all quotations, vouchers, invoices, accounts or receipts in connection with the expenditure in respect of the Provisional Sum Works, except where the Provisional Sum Works is valued in accordance with the item wise rates quoted by the Contractor in its bid submitted to the Employer.

In respect of every Provisional Sum the WAPCOS Limited Representative shall have authority to issue instructions for the execution of work or for the supply of goods, materials, Plant Sums or services by the Contractor, in which case the Contractor shall be entitled to an amount equal to the value thereof determined in accordance with Clause 48(3).

4. Payment

WAPCOS Limited shall pay the amount certified in a Certificate of Payment less the amount paid earlier in accordance with Clause 48(3) [Certificate of Payment], no later than [21 (Twenty One)] Business Days from the date of such Certificate of Payment.

For & on behalf of Tenderer

SECTION– IV: SPECIAL CONDITIONS OF CONTRACT

1.0 SPECIAL CONDITIONS OF CONTRACT

The Special Condition of Contract (SCC) shall be followed by the contractor in addition to the General Condition of Contract (GCC) of tender Document. The following General Condition of Contract of this tender are modified as detailed below. In case of any discrepancy between GCC and SCC, the SCC will succeed over GCC.

Clause No.	Description	Applicability/Modified/ Added
GENERAL RULES AND DIRECTIONS		
4	Any Person-------- Process of the work	Not Applicable
8	Schedule of Materials to be issued to the Contractor	Not Applicable
10	In the case-------- executed accordingly	Applicable
11	In the case-------- disqualified and rejected	Applicable
19	List of works form	Not Applicable
DEFINITIONS		
Add2(ii)(a)	**Owner shall mean Registrar, GNLU**	
2(iii)	**Work Means:**	
	Repair / Renovation of toilet blocks in boys hostel at GNLU	
2(iv)	**Site Means**	
	Gujarat National Law University	
2 (vi)	**Engineer-In-Charge**	
	Will be intimated to the successful bidder at the time of issue of Notice to Proceed the works.	
2 (x)	**Market Rate**	15 %
	Percentage on cost of materials and labour to cover all overheads and profits	
2(xi)	**Standard Schedule of Rates**	R&B (SOR), GWSSB (SOR), CPWD

	Schedule of Rates (Electrical)	
	Schedule of Rates (Civil)	
2(xvi)	**Date of Commencement of work**	Within 7 days after Award of Work
9	**Signing of Contract**	The Successful tenderer will have to execute an agreement in stamp paper worth 0.1% of contract agreed amount in prescribed form.

CLAUSES OF CONTRACT

Clause 1	**Performance Guarantee**	Applicable
	i. Performance Guarantee	5% of Contract Value (This guarantee shall be in the form of Deposit at call receipt of any Nationalized Bank/Banker's cheque of any Nationalized Bank/Demand Draft of any Nationalized Bank /Pay order of any Nationalized Bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Nationalized Bank or the State Bank of India in accordance with the prescribed form
	ii. Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance	14 days
	iii. Validity of Performance Guarantee	The Performance Guarantee shall be valid up to the 90

		days beyond the stipulated date of completion of Work. The Performance Bank Guarantee shall be valid up to 90 days beyond the duration of the work.After the completion period, the Bank Guarantee will be returned and the final 2.5% of the Contract Value will be reserved as a Security Deposit
	iv. Return of Performance Guarantee	Successful completion of Work, Taking over of Work by the Engineer-In-Charge and Start of DLP period.
Clause 1A	**Security Deposit**	Applicable 2.5% of Gross amount of each RA Bill deducted from each Running Bill and Final Bill.
	Release of security Deposit	After Successful completion of Defect Liability Period and issuance of certificate by Engineer-In-Charge.
Clause 2	Compensation for Delay	Applicable
Clause 2A	INCENTIVE FOR EARLY COMPLETION	Not Applicable
Clause 3A	Start of Work	Applicable and modified as Time period mentioned in Letter of Commencement.
Clause 5	Time and Extension for Delay	Applicable
	Number of days from the date of issue of letter of acceptance for reckoning date of	As per date mentioned in Letter of Commencement.

	start	As Mentioned in NIT
	Stipulated time of completion of project	
Clause 6	Measurements of Work Done	Applicable
Clause 6A	Computerized Measurement Book	Applicable
Clause 7	Payment on Intermediate Certificate to be Regarded as advance	Not Applicable Modified As It is clearly agreed and understood bythe Contractor that notwithstandinganything to the contrary that may bestated in the agreement between WAPCOS and the Contractor; the contractor shall become entitled to payment only after WAPCOS has received the corresponding payment(s) from the Owner for the work done by the contractor. Any delay in the release of payment by the Owner to WAPCOS leading to a delay in the release the corresponding payment by WAPCOS to the contractor shall not entitle the contractor to any compensation/ interest from WAPCOS. All payments shall be released by way of e-transfer through RTGS in India directly to their Bank account by WAPCOS. The Security Deposit (2.5% of Total amount of Bill Paid)

		shall be release after Successful completion of Defect Liability Period and issuance of certificate by Engineer-In-Charge
Clause 9	Payment of final bill	Interest clause is not applicable
Clause 10	Materials Supplied by WAPCOS	Not Applicable
Clause 10 B(i)	Secured Advance On Non-Perishable Materials	Not Applicable
Clause 10 B(ii)	Mobilization Advance	Applicable 5% of the tendered value on submission of Bank Guarantee Bond from Scheduled Bank.
Clause 10 B(iii)	Plant Machinery & Shuttering Material Advance	Not Applicable
Clause 10 B(iv)	Recovery of Mobilization advance	Not Applicable
Clause 10 C	Payment on Account of Increase in Price / Wages due to Statutory Order	Not Applicable
Clause 10 CA	Payment due to Variation in Prices of Materials after Receipt of Tender	Not Applicable
Clause 10 CC	Payment due to Increase/Decrease in Prices/Wages (Excluding Materials covered under Clause 10 CA) after Receipt of Tender for Works	Not Applicable
Clause 11	Works to be Executed in Accordance with Specifications, Drawings, Orders Etc. Specifications to be followed for execution of work	Applicable All works are to be executed in accordance with the specifications, BIS Standards and Codes, Indian Electricity Rules 1956, Indian Electricity Act 2003 and Fire Safety Regulations pertaining to

		Electric applications. Specification with up to date correction on the last date of submission of tender for work. In case specification of any item is not clear, CPWD Specifications , Indian Standards(IS), NBPDCL Specifications with up to date correction slips issued on the last date of submission of tender for work is applicable
Clause 12	Deviations / Variations Extent and Pricing	Only first paragraph "The Engineer in charge----- work except as hereafter provided" will be applicable.
	Clause 12.1	Not Applicable
	Clause 12.2(a)	Modified as "In the case of extra item(s) (items that are completely new), the contractor may within fifteen days of receipt of order or occurrence of the item(s) claim rates, supported by proper analysis on the basis of the market rates and the contractor shall be paid in accordance with rate approved by WAPCOS. In case the extra item being the Scheduled Item (R&B SOR & GWSSB SOR, Gujarat), these shall be paid as per the schedule rate.
	Clause 12.2(b)	Modified as "The specification mentioned in

	Tender may be substituted as per the requirement of Owner/ WAPCOS. In this case of substituted item(s) being R&B & GWSSB SOR item, these shall be paid as per the R&B & GWSSB SORrate plus applicable cost index (at the time of tender) as issued by CPWD. In this case of substituted item(s) being Non R&B & GWSSB SOR item, the contractor may within fifteen days of receipt of order or occurrence of the item(s) assess the rates supported by proper analysis on the basis of the market rates. The rate of tendered item to be substituted will also be assessed by same above manner. The plus/minus difference of rates of mutually substituted items will be submitted by Contractor and approved by WAPCOS.
Clause 12.2(c) Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for all items other than foundation work (except earthwork) as mentioned in clause 12.5	Not Applicable
Clause 12.5 (i) Deviation limit beyond which clause	Not Applicable

	12.2 & 12.3 shall apply for foundation work (except earth work) Deviation limit for items in 100% earth work sub head of R&B & GWSSB SOR or related items.	
	Clause 12.4, 12.6	Not Applicable
Clause 15A	Compensation in case delay supply of material	Not Applicable
Clause 17	Contractor liable for Damages, Defects during Defect Liability Period	Applicable Added/Modified: One from the date of successful completion and commissioning of the project in all respect and handing over of the work with full satisfaction of Client. As WAPCOS is liable to the Client, the contractor is liable to WAPCOS till the Defect Liability Period.
Clause 27	Lumpsum Provisions in Tender	Not Applicable
Clause 30	Employment of coal mining or controlled area labour not permissible	Not Applicable
Clause 31 A	Water supply	Applicable
Clause 32	Alternate water arrangements	Applicable
Clause 33	Return of surplus material	Not Applicable
Clause 34	Hire of plant and Machinery	Not Applicable
Clause 36(i)	Requirement of Technical Representative(s)	

Sr. No.	Requirement of Technical Staff	Minimum Experience (years)	Designation of Technical Staff

		Minimum Qualification	Nos.		
	1	B.Tech (Civil, Mechanical & Electrical)	1	7	Project Manager (Civil)
	2	Diploma (Civil, Electrical & Mechanical)	2	3	Engineer/ Billing Engineer/ Quality Control

Clause 42	Return of Material & Recovery for Material Issued	Not Applicable
Clause 46	Insurance	**Applicable**

2.0 ADDITIONAL CONDITIONS

1. The Contractor shall be responsible for consequential effects arising out during the inspection done by the Chief Technical Examiner Cell, Central Vigilance Commission or by the Building Works Committee or third party authorized by WAPCOS or any statuary committee or by any duly authorized representative of WAPCOS, during the progress or any time after the construction and development of project up to the defect liability period, and will take appropriate action for rectification of defective work. Rectification of defective works or replacement of sub-standard materials or articles, as pointed out by the Chief Technical Cell, Central Vigilance Commission, Building Works Committee or authorized representative of WAPCOS or third party authorized by WAPCOS or any statuary committee, will be carried out or replaced by the Contractor at his own risk and cost. WAPCOS will not pay any extra amount for such rectification or replacement.

2. Handing Over of the Project: Contractor will hand over the project to Owner /Client after successful completion of each component of the project in all respect and complete satisfaction of Engineer-In-charge. The partial handing over of building components shall not be considered. Contractor shall also provide necessary Completion Certificate/NOC from all local Government/ Statuary Authorities including Fire, Forest, Electrical, Environment, Lift, DG Set, required before handing over the project to the client. The defect liability period will be one year after such handing over.

3. The contractor shall provide fully equipped office for Contractor's Staff, Engineers along with facility of 24 hours electric and drinking water supply, sanitary facilities, furniture and desktop computer of latest version along with printer and internet connection at construction site for finalizing immediate technical solutions/decisions on the site in consultation with Engineer In-Charge so that the work progress may not be hampered."

4. The Contractor shall render all help and assistance in documenting the total sequence of this project by way of photography, slides, audio-video recording etc. nothing extra shall be payable to the agency on this account.

5. Contractor should provide R.O. Plant sufficient for workers employed at site, his technical staff and site staff.

6. The work will be commenced by the Contractor only after the approval of drawings from the concerned local authorities including fire fighting's department or any other department as per statuary requirement.

7. The Contractor shall be solely responsible to follow the general clauses of the contract including labour regulations, registration of contractor, obtaining labour license from labour department, safety precautions, etc. and all other statutory provisions related to labor/works as per the prevailing General Clauses of Contract amended from time to time. The Contractor shall stick to the schedule of all activities and carry out it with mutually agreed time frame.

8. Rates and amount Quoted by contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works. No escalation shall be applicable on this contract.

9. Unless otherwise provided in the schedule of quantities the rates tendered by the contractor shall be all inclusive and shall apply to all heights lifts, leads and depths of the structure and nothing extra shall be payable on this account.

10. The contractor shall make his own arrangements for obtaining electric connection and water Connection/arrangement (if required) and make necessary payments directly to the department concerned. No dispute in this regard shall be entertained.

11. Other agencies doing works related to this project will also simultaneously execute the work and the contractor shall provide necessary facilities for the same. The contractor shall leave such necessary holes opening etc. for burying in the work pipes, cables, conduits, clamps, boxes and hooks for fan clamps etc. as may be required for other agencies. Conduits for electrical wiring / cables will be laid in a way that they leave enough space for concreting and do not adversely effect the structural members. Nothing extra over the agreement rates shall be paid for the same.

12. Some restrictions may be imposed by the security staff etc. on the working and for movement for labour materials etc. The contractor shall be bound to follow all such restrictions / instructions and nothing extra shall be payable on this account.

13. (a) The Project work will be carried out in the manner complying in all respects with the requirements of relevant bye laws of the local body under the jurisdiction of which the work is to be executed or as directed by the Engineer in charge and nothing extra will be paid on this account.

(b) The contractor shall comply with proper and legal orders and directions of the local or public authority or municipality and abide by their rule and regulations and pay all fees and charges which he may be liable.

14. The contractor shall give a performance test of the entire installation (s) as per standing specification before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.

15. Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been in-built in the items and nothing extra shall be payable (or) extra cement considered in consumption on this account.

16. Samples of various materials required for testing shall be provided free of charges by the contractor. Testing charges, if any, unless otherwise provided shall be borne by the Contractor. All other expenditure required to be incurred for taking the samples, conveyance, packing etc. shall be borne by the contractor himself.

17. The work shall be carried out in accordance with the Architectural drawings and structural drawings, to be issued from time to time, by the Engineer-in-Charge. Before commencement of any item of work the contractor shall correlate all the relevant architectural and structural drawings, nomenclature of items and specifications etc. issued for the work and satisfy himself that the information available there from is complete and unambiguous. The figure and written dimension of the drawings shall be superseding the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-in-charge before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and/ or incomplete information and no claim whatsoever shall be entertained on this account.

18. The contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by WAPCOS.

19. In the case of items of which abbreviated nomenclature is not available in the above cited publication and also in case of extra and substituted items of works for which abbreviated nomenclature is not provided in the agreement, the full nomenclature of items shall be reproduced in the measurements books and bill forms for running account bill.

The full nomenclature of the items shall be adopted in preparing abstract of final bill in the measurement book and also in the bill form for final bill.

20. The contractor shall have to make approaches to the site, if so required and keep them in good condition for transportation of labour and materials as well as inspection of works by the Engineer in charge. Nothing extra shall be paid on this account.

21. No payment will be made to the contractor for damage caused by rains, or other natural calamities during the execution of the works and no such claim on this account will be entertained.

22. Various factory made materials shall be procured from reputed and approved manufacturers or their authorized dealers. List of such approved manufacturers is available at Annexure IX. For the items / materials not appearing in the list the decision of Engineer in charge shall be final and binding.

23. Contractor shall have to execute a Guarantee Bond in respect of Water Proofing works as per Performa attached in this N.I.T. at Annexure II. He shall also have to execute guarantee bonds for water supply and sanitary installations work on the proforma available at Annexure I.

24. The terms machine batched, machine mixed and machine vibrated concrete used elsewhere in agreement shall mean the concrete produced in concrete batching and mixing plant and if necessary transported by transit concrete mixers, placed in position by the concrete pumps, tower crane and vibrated by surface vibrator /needle vibrator / plate vibrator, as the case may be to achieve required strength and durability.

25. Wherever work is specified to be done or material procured through specialized agencies, their names shall be got approved well in advance from Engineer in charge. Failure to do so shall not justify delay in execution of work. It is suggested that immediately after award of work, contractor should negotiate with concerned specialist agencies and send their names for approval to Engineer in charge. Any material procured without prior approval of Engineer in charge in writing is liable to be rejected. Engineer in charge reserves right to get the materials tested in laboratories of his choice before final acceptance. Nonstandard materials shall not be accepted.

26. Doors and frames shall be procured from specialist firms and name of such agencies shall be got approved from the Engineer in charge well in advance.

27. The construction joints shall be provided in predetermined locations only as decided by Engineer in charge. The cost of shuttering for these construction joints shall be included in item of Concrete work / RCC work and nothing extra shall be payable on this account to the contractor.

28. The gradation of fine sand to be used in plaster work, shall be strictly as per Table 3.1 (clause 3.1.3) of CPWD Specification 2009 Vol. - I conforming to IS 1542-1977. The plastered surface shall be fairly smooth without any undulation of any kind for applying paint/white wash.

29. No chase cutting/dismantling of plaster/RCC/CC shall be allowed, so contractor has to execute the electrical work accordingly.

30. The contractor shall invariably prepare the samples of finishing items as per direction of Engineer-in-charge. The contractor shall proceed with further finishing items only after getting the samples of these items approved in writing from Engineer-in-charge. No extra claim whatsoever beyond the payments due at agreement rates will be entertained from the contractor on this account.

31. The contractor shall take instruction from the Engineer in charge for stacking of materials at any place. No excavated earth or Project material shall be stacked on areas where other buildings, roads, services or compound walls are to be constructed.

32. If as per municipal rules, the huts for labour are not be created at the site of work by the contractors, the contractor are required to provide such accommodation as is acceptable to local bodies and nothing extra shall be paid on this account.

33. Royalty at the prevalent rates shall be payable by the contractor on all the boulders, metals, shingle, sand and bajri etc. collected by him for the execution of the work, direct to the Revenue authority or authorized agent of the state Government concerned or Central Government. No such claim of Contractor on royalty shall be entertained by the WAPCOS.

34. All relevant tests for BMC / RMC as per prescribed IS codes in order to enable the Engineer in charge to conduct field tests to ensure that the quality is consistent with the prescribed specifications and nothing extra shall be paid on this account.

35. The contractor or his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case, he or his authorized representative is not present or does not associate himself, the results or such tests and consequences thereon shall be binding on the contractor.

36. The contractor shall get the water tested with regard to its suitability of use in the works and get written approval from the Engineer in charge before he proceeds with the use of same of execution of works. If the tubewell water is not suitable, the contractor shall arrange Municipal water or from any other sources at his own cost and nothing extra shall be paid to the contractor on this account. The water shall be got tested at frequency specified in latest CPWD specifications/BIS code.

37. The material shall conform to the quality and make as per attached list in Annexure IX. However, for the items not appearing in the list preference shall be given to those articles which bear ISI certification marks. In case articles bearing ISI certification marks are not available the quality of sample brought by the Contractor shall be judged by the standard laid down in the relevant ISI specification/CPWD specification. All materials and articles brought by the contractor to the site for use shall conform to the samples approved, which shall be preserved till the completion of the work. However, such articles which bear ISI mark but stand banned by CPWD will not be used. Notwithstanding the case of materials of "Preferred Make"

as given in Annexure IX, provisions of Clause 10A of the General Conditions of Contract for Central PWD works shall be applicable on the materials of "Preferred Make" also.

38. It must be ensuring that all materials to be used in work bear BIS certification mark. In cases where BIS certification system is available for a particular material/product but not even a single producer has so far approached BIS for certification the material can be used subject to the condition that it should confirm to CPWD specification and relevant BIS codes. In such case written approval of the Engineer-In-Charge may be obtained before use of such material in the work.

39. The final approval of the brand to be used shall be as per the direction of Engineer-in-Charge. The brand used shall be one of the brands in case specified in the list of preferred make / materials annexure-IX.

40. In case of non-availability of material of the brands specified in the list of approved materials an equivalent brand may be used after getting written approval of WAPCOS giving details to indicate that the brand proposed to be used is equivalent to the brands mentioned in the agreement.

41. Special conditions for Cement

The contractor shall procure 53 grade Ordinary Portland Cement (conforming to IS: 8112), Portland pozzolona cement (confirming to IS : 1489 : Part –I) as required in the work, from reputed manufacturers of cement such as ACC, Ultratech, Ambuja, Jaypee Cement, and or from any other reputed cement manufacturer, having a production capacity not less than one million tons per annum as approved by WAPCOS. The tenderers may also submit a list of names of cement manufacturers which they propose to use in the work. The tender accepting authority reserves right to accept or reject name(s) of cement manufacture(s) which the tenderer proposes to use in the work. No change in the tendered rates will be accepted if the tender accepting authority does not accept the list of cement manufactures, given by the tenderer, fully or partially. The cement brought to the site for execution of work shall be in bags bearing manufacturer's name & ISI marking. Weight of cement in each bag shall be 50 kg. Samples of cement arranged by the contactor shall be taken by the Engineer- in-Charge and got tested in accordance with provisions of relevant BIS codes. In case the test results indicate that the cement arranged by the contractor does not conform to the relevant BIS codes, the same shall stand rejected and it shall be removed from the site by the contractor at his own cost within 7 days of written order from the Engineer-in-Charge to do so.

42. Special Conditions for Steel: -

The contractor shall procure TMT bars of Fe500/Fe500D/Fe550/Fe550D grade (the grade to procured is to be specified) from primary steel producers such as SAIL, Tata Steel Ltd., RINL, Jindal Steel & Power Ltd. and JSW Steel Ltd. or any other producer as approved by WAPCOS

who are using iron ore as the basic raw material / input and having crude steel capacity of 2.0 Million tonnes per annum and above.

43. Removal of rejected/sub-standard materials.

The following procedure shall be followed for the removal of rejected/sub-standard materials from the site of work:

(i) Whenever any material brought by the contractor to the site of work is rejected, entry thereof should invariably be made in the Site Order Book under the signature of the Engineer-In-Charge, giving the approximate quantity of such materials.

(ii) As soon as the material is removed, a certificate to that effect shall be recorded by the Engineer-In-Charge against the original entry, giving, the date of removal and mode of removal, i.e., whether by truck, carts, or by manual labour. If the removal is by truck, the registration number of the truck should be recorded.

(iii) When it is not possible for the Engineer-In-Charge to be present at the site of work at the time of actual removal of the rejected/sub-standard materials from the site, the required certificate should be recorded by the Authorized Representative of WAPCOS, and the Engineer-In-Charge should countersign the certificate recorded by the Authorized Representative.

44. If the work is carried out in more than one shift or during night, no claim on this account shall be entertained. The contractor has to take permission from the police & local authorities etc. if required for work during night hours. No claim / hindrance on this account shall be considered if work is not allowed during night time. The requisite supervision shall be made available by the WAPCOS along with necessary issue of material under joint custody.

45. Contractor should provide R.O. Plant sufficient for workers employed at site, his technical staff and site staff of WAPCOS free of charge.

46. The contractor shall provide & maintain (1 No.) desktop Computer of latest version along with printer, operator and internet connection at site of work as per direction of Engineer-in-charge.

47. Once the Project is completed and the contractor shall be responsible to attend defect pointed out by WAPCOS and then hand over the Project to the client.

48. Contractor should hand over the warranty of the specialized items to the WAPCOS.

49. The contractor is required to deploy resources as per availability of site. However, no claim will be entertained for idle labour, idle machinery, idle technical/no-technical staff, idle T&P etc.

50. Contractor shall not divert any advance payments or part thereof for any work other than that needed for completion of the contracted work. All advance payments received as per

terms of the contract (i.e. mobilization advance, secured advance against materials brought at site, secured advance against plant & machinery and/or for work done during interim stages, etc) are required to be re-invested in the contracted work to ensure advance availability of resources in terms of materials, Labour, plant & machinery needed for required pace of progress for timely completion of work.

51. All running account bills preferred by the contractor for advance payments shall be processed only if Engineer-in-charge is satisfied that upto date investments (excluding security deposit & performance guarantee, which are not considered as investments) made by the contractor against contracted work are more than the payments received. Accordingly, all running account bills shall be supported with an account of up-to-date payments received vis-a-vis upto date investments made on the work to enable engineer-in-charge to check to his satisfaction that the payments made by engineer-in-charge are properly utilized only on the work and nowhere else.

3.0 Arbitration:

"Any dispute, controversy or claims arising out of or relating to this Agreement orthe breach, termination or invalidity thereof, shall be settled through following mechanism:

a) Firstly, the aggrieved party shall write a letter to the other party detailing its grievances and calling upon the other party to amicably resolve the dispute by convening a joint meeting. Accordingly, the parties as per their convenience shall jointly convene the said meeting(s). wherein minutes of the said meeting(s) shall be prepared and countersigned by all the parties. It is mandatory to prepare minutes of meeting(s) and to be countersigned by all the parties, irrespective of the outcome of the said meeting(s).

b) In the event the parties are unable to reach on any settlement in the said meeting(s), then the aggrieved party shall mandatory resort to pre-litigation mediation mechanism with Delhi High Court Mediation Cell, New Delhi.

c) It is only upon failure of the pre-litigation mediation mechanism with Delhi High Court Mediation Cell, then the aggrieved party shall resort to resolution of disputes through arbitration of a Sole Arbitrator. The appointing authority of Sole Arbitrator is CMD, WAPCOS Limited, to which neither of the parties have any objection nor they shall ever object.

d) Subject to the parties agreeing otherwise, the Arbitration proceedings shall be conducted in accordance with the provisions of the Indian Arbitration and Conciliation Act, 1996 (amended as on date).

e) It is also acknowledged and accepted that WAPCOS is only working as Intermediary between the Associate/Sub-Consultant/Sub-Contractor and the Principal Employer/Client, thus in the event, any dispute arises under the present agreement and referred to Arbitration for adjudication, then subject to corresponding clause in the Contract/Agreement/Work Order/Arrangement between Principal Employer/Client & WAPCOS, Principal Employer/Client

shall also be made party to the said Arbitration proceedings. Also, the award including costs if any passed against WAPCOS and costs incurred in the proceedings shall be the sole responsibility of Principal Employer/Client. The said clause if found inapplicable, even then the other terms of the Arbitration Clause shall survive and shall be acted upon.

f) The place/seat of arbitration shall be Delhi and any award whether interim or final, shall be made, and shall be deemed for all purposes between the parties to be made, in Delhi. The arbitral procedure shall be conducted in English language and any award or awards shall be rendered in English. The procedural law of the arbitration shall be Indian Law. The award of the arbitrator shall be final and conclusive and binding upon the Parties.

g) The Contract and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims) shall be governed by and construed in accordance with the laws of India and the Parties submit to sole & exclusive jurisdiction of courts at Delhi."

4.0 Variation in Quantities

The quantities for ancillary works given in the schedule and / or in drawings are for the guidance of the tenderer. The contractor shall be paid on the basis of actual quantities of works carried out. However, the contractor shall check these quantities before quoting and will bring to the notice of Consultants / Engineer-In charge for any major variation. Drawings issued with the tender are diagrammatic only and indicate the general arrangement only. The data given in the drawings and specifications is as exact as could be secured, but its accuracy is not guaranteed. Contractor shall carry out his own computations and provide all such equipment, as required to achieve the specified conditions. Employer reserves the right to add / delete any items of work during the currency of contract.

5.0 Performance Bound Contract

The contract will be a performance bound contract and therefore the Bidder shall make their independent check for selection of equipment’s etc. The drawings enclosed with the tender documents shall be only tentative layout plans and for guidance purpose only. The detailed working / shop drawings shall be prepared and submitted for approval to the Department /Engineer-in-Charge / Consultant.
The contractor shall guarantee that the capacity of various equipment’s as well as the whole system shall be in line with the required capacity.

For & on behalf of Tenderer

SECTION– V: ANNEXURES

Annexure –I: GUARANTEE TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER SUPPLY AND SANITARY INSTALLATIONS

The agreement made this _____ day of _____ two thousand and _____ between _____ S/o _____ (hereinafter called the GUARANTOR of the one part) and the WAPCOS LIMITED (hereinafter called the WAPCOS of the other part).

WHEREAS THIS agreement is supplementary to a contract. (Herein after called the Contract) dated _____ and made between the GUARANTOR OF THE ONE PART AND the WAPCOS of the other part, whereby the contractor interalia, under look to render the work in the said contract recited structurally stable workmanship and use of sound materials.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said work will remain structurally stable and guarantee against faulty workmanship, finishing, manufacturing defects of materials and leakages etc.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable, after the expiry of maintenance period prescribed in the contract for the minimum life of ten years, to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

The decision of the Engineer-in-charge with regard to nature and cause of defects shall be final. During the period of guarantee the guarantor shall make good all defects to the satisfaction of the Engineer in charge calling upon him to rectify the defects, failing which the work shall be got done by the WAPCOS by some other contractor at the guarantor's cost and risk. The decision of the Engineer in charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to make good all the defects, commits breach thereunder then the guarantor will indemnify the Principal and his successor against all loss, damage cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and / or damage and / or cost incurred by the WAPCOS the decision of the Engineer-in-charge will be final and binding on the parties.

IN WITHNES WHEREOF those presents have been executed by the obligator _____ and _____ by for and on behalf of the WAPCOS LIMITED on the day, month and year first above written.

Signed sealed and delivered by OBLIGATOR in presence of:

1. _____

2. _____

SIGNED FOR AND ON BEHALF OF THE WAPCOS LIMITED BY_____ _____ in the presence of:

1. _____

2. _____

Annexure –II: GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR WATER PROOFING TREATMENT FOR TOILETS

The agreement made this _____ day of _____ two thousand and _____ between _____ S/o _____ (hereinafter called the GUARANTOR of the one part) and the WAPCOS Limited (hereinafter called the WAPCOS of the other part).

WHEREAS THIS agreement is supplementary to a contract. (Herein after called the Contract) dated _____ and made between the GUARANTOR OF THE ONE PART AND the WAPCOS of the other part, whereby the contractor interalia, undertook to render the structures in the said contract the work in the said contract recited completely water and leak proof.

THE GUARANTOR hereby guarantee that the water proofing treatment given by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be ten years to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

Provided that the guarantor will not be responsible for leakage caused by earthquake or structural defects.

The decision of the Engineer in charge with regard to cause of leakage shall be final.

During the period of guarantee the guarantor shall make good all defects and in case of any defects being found render the structure water proof to the satisfaction of the Engineer in charge at his cost and shall commence the work for such rectification within seven days from the date of issue of notice from the Engineer in charge calling upon him to rectify the defects, failing which the work shall be got done by the WAPCOS through some other contractor at the guarantor's cost and risk. The decision of the Engineer in charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to execute the water proofing, or commits breach thereunder then the guarantor will indemnify the Principal and his successor against all loss, damage, cost of expenses or otherwise which may be incurred by him by reason of any of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and / or cost incurred by the WAPCOS on the decision of the Engineer-in-charge will be final and binding on the parties.

IN WITHNES WHEREOF those presents have been executed by the obligator _____ and _____ by for and on behalf of the WAPCOS LIMITED on the day, month and year first above written.

Signed sealed and delivered by OBLIGATOR in presence of:

1. _____

2. _____

SIGNED FOR AND ON BEHALF OF THE WAPCOS LIMITED BY_____ in the presence of :

1. _____

2. _____

Annexure –III: BANK GUARANTEE FORMAT FOR EMD (Not Applicable)

WHEREAS, M/s ……. having their Registered/Head Office at ……. (hereinafter called "the Bidder") has submitted his Bid dated …… for the …… [hereinafter called "the Bid"] to M/s WAPCOS Limited (hereinafter called the Employer)

KNOW ALL PEOPLE by these presents that we …… (name of the Bank) having our head office at …… (hereinafter called "the Bank") are bound unto Employer in the sum of …… for which payment well and truly to be made to the Employer, the Bank binds itself, its successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this …… day of …… 2019.

THE CONDITIONS of this obligation are:

(1) If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified;OR
(2) If the Bidder having been notified of the acceptance of his bid by …… during the period of Bid Validity:
We undertake to pay to the …… up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Bidder will note that the amount claimed by him is due to him owing to the occurrence of one or any of the above mentioned two conditions and specify the occurred condition or conditions.

This Guarantee will remain in force up to and including the date …… after the deadline for submission of Bids as is stated in the instructions to Bidders or as it may be extended by the …… notice of which extension(s) to the Bank is hereby waived and notice to the bidder would constitute sufficient notice to the Bank. Any demand in respect of this guarantee should reach the Bank not later than the above date.

Notwithstanding anything contained herein

i) Liability under this guarantee shall not exceed ……
ii) This bank guarantee shall be valid upto ……and;
iii) Our liability to make payment shall arise and we are liable to pay the guaranteed amount or any part thereof under this guarantee only and only if you serve upon us a written claim or demand in terms of the guarantee on or before …… (indicate a period twelve months after the date of issue of Bank Guranttee).

DATE: **SIGNATURE:**
(Signature of Witness) SEAL

Annexure –IV: FORM OF PERFORMANCE SECURITY

WAPCOS Limited,
515, 5th Floor, Shree UGATI Corporate Park
Opp. Pratik Mall, Koba-Gandhinagar Road,
Kudasan, Dist: Gandhinagar, Gujarat-382421

In consideration of _____ (Employer's name) (hereinafter referred to as "the Employer") which expression shall, unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to _____ (Contractor's name & address) (hereinafter referred to as "the Contractor " which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) a contract, by issue of Employer's Notification of Award No. _____ dt. _____ and the same having been unequivocally accepted by the Contractor, resulting into a contract valued at Rs. _____(Rupees _____only) for _____(name of work) (hereinafter called " the contract") and the Contractor having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire contract equivalent to Rs. _____ (Rupees _____only) (10 % of the said value of the Contract to the Employer.

We, _____(name & address of bank) (hereinafter referred to as "the Bank" which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Employer, on demand any or, all monies payable by the Contractor to the extent of Rs. _____(Rupees _____only) as aforesaid at any time upto _____without any demur, reservation, contest , recourse or protest and/or without any reference to the Contractor. Any such demand made by the Employer on the bank shall be conclusive and binding notwithstanding any difference between the Employer and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Employer and further agrees that the guarantee herein contained shall continue to be enforceable till the Employer discharges this guarantee.

We the said Bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said contract have been fully paid and its claims satisfied or discharged or till the Employer certifies that the terms and conditions of the said Contract have been fully and properly carried out by the said Contractor and accordingly discharges the guarantee.

The Employer shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee, from, time to time to extend the time for performance of the Contract by the Contractor. The Employer shall have the fullest liberty without affecting this guarantee, to

postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor and to exercise the same at any time in any manner and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Employer and the Contractor or any other course or remedy or security available to the Employer. The bank shall not be released of its obligations under these presents by any exercise by the Employer of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would but for this provision, have the effect of relieving the Bank. The guarantee shall not be affected by a change in the constitution of the bank or of the employer.

The bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance, without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

We The Said Bank do hereby declare that we have absolute and unconditional power to issue this guarantee in your favour under the Memorandum and Articles of Association or such other constitutional documents of the Bank and the undersigned have full power to execute this guarantee under the Power of Attorney/ Post Approval Authorization dated_____ of the bank granted to him / us by the Bank. We the said bank do hereby declare and undertake that your claim under the guarantee shall not be affected by any deficiency or other defect in the powers of the bank or its officials and the guarantee shall be deemed to have been issued as if the bank and its officials have all the powers and authorization to give this guarantee on behalf of the bank.

We the said bank do hereby certify the genuineness and appropriateness of the Stamp paper and stamp value used for issuing the guarantee. We the said bank do hereby declare and undertake that your claim under the guarantee shall not be affected by any deficiency or other defect in the stamp paper or its stamp value.

We the said bank do hereby declare that our payments hereunder shall be made to you , free and clear of and without and deduction, reduction on account of any reasons including any and all present and future taxes, levies, charges of withholding whatsoever imposed or collected with respect thereto.

Notwithstanding anything contained hereinabove our liability under this guarantee is restricted to Rs. _____(Rupees _____ only) and it shall remain in force upto and including _____ and shall be extended from time to time for such period as may be desired by M/S WAPCOS Limited on whose behalf this bank guarantee has been given.

Notwithstanding anything contained herein

i) Our liability under this guarantee shall not exceed Rs. _____ (Rupees _____ only);

ii) This bank guarantee shall be valid upto _____; and

iii) our liability to make payment shall arise and we are liable to pay the guaranteed amount or any part thereof under this guarantee, only and only if you serve upon us a written claim or demand in terms of the guarantee on or before _____(**indicate a date twelve months after validity of guarantee**).

Dated this _____day of _____ at Gandhinagar.

For & on behalf of Tenderer

Annexure – V : FORMAT FOR AFFIDAVIT

I / We have submitted a bank guarantee for the work (Name of work) Agreement No. _____Dated _____from _____ (Name of the Bank with full address) to the WAPCOS Limited, New Delhi with a view to seek exemption from payment of performance guarantee in cash. This Bank guarantee expires on _____ I / We undertake to keep the validity of the bank guarantee intact by getting it extended from time to time at my / our own initiative upto a period of _____ months after the recorded date of completion of the work or as directed by the WAPCOS.

I / We also indemnify the WAPCOS against any losses arising out of non-encasement of the bank guarantee if any.

(Deponent)

Signature of Contractor

Note: The affidavit is to be given by the Executants before a first class Magistrate.

Annexure –VI: FORM OF ADVANCE PAYMENT GUARANTEE

M/s WAPCOS Limited,

…….

…….

In consideration of WAPCOS LTD. (hereinafter referred to as "the Employer") which expression shall, unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to _____(Contractor's name) with its Registered /Head Office at _____(hereinafter referred to as "the Contractor " which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) a contract, by issue of Employer's Notification of Award No. _____dt. _____and the same having been unequivocally accepted by the Contractor, resulting into a contract valued at Rs._____(Rupees_____only) for _____ (hereinafter called " the contract") and the Employer having agreed to make an advance payment to the Contractor for performance of the above Contract amounting to Rs. _____(Rupees _____only) as an advance against bank guarantee to be furnished by the Contractor.

We, _____(name & address of bank) having its Head Office at _____(hereinafter referred to as "the Bank" which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Employer immediately on demand any or, all monies payable by the Contractor to the extent of Rs. _____ (Rupees _____only) as aforesaid at any time upto _____without any demur, reservation, contest, recourse or protest and/or without any reference to the Contractor. Any such demand made by the Employer on the bank shall be conclusive and binding notwithstanding any difference between the Employer and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. We agree that the Guarantee herein contained shall be irrevocable and shall continue to be enforceable till the Employer discharges this guarantee. We further agree that no change in the constitution of the Bank or of the Employer shall affect this guarantee.

The Employer shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee, from time to time, to vary the advance or to extend the time for performance of the Contract by the Contractor. The Employer shall have the fullest liberty without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Employer and the Contractor or any other course or remedy or security available to the Employer. The bank shall not be released of its

obligations under these presents by any exercise by the Employer of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would but for this provision, have the effect of relieving the Bank.

The bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

We The Said Bank do hereby declare that we have absolute and unconditional power to issue this guarantee in your favour under the Memorandum and Articles of Association or such other constitutional documents of the Bank and the undersigned have full power to execute this guarantee under the Power of Attorney/ Post Approval Authorization dated_____ of the bank granted to him / us by the Bank. We the said bank do hereby declare and undertake that your claim under the guarantee shall not be affected by any deficiency or other defect in the powers of the bank or its officials and the guarantee shall be deemed to have been issued as if the bank and its officials have all the powers and authorization to give this guarantee on behalf of the bank.

We the said bank does hereby certify the genuineness and appropriateness of the Stamp paper and stamp value used for issuing the guarantee. We the said bank does hereby declare and undertake that your claim under the guarantee shall not be affected by any deficiency or other defect in the stamp paper or its stamp value.

We the said bank do hereby declare that our payments hereunder shall be made to you , free and clear of and without and deduction, reduction on account of any reasons including any and all present and future taxes, levies, charges of withholding whatsoever imposed or collected with respect thereto.

Notwithstanding anything contained hereinabove our liability under this guarantee is limited to Rs._____(Rupees _____only) and it shall remain in force upto and including _____and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/S _____on whose behalf this bank guarantee has been given.

Notwithstanding anything contained herein

ii) Our liability under this guarantee shall not exceed Rs._____(Rupees _____only);

iii) This bank guarantee shall be valid up to _____ and

iv) our liability to make payment shall arise and we are liable to pay the guaranteed amount or any part thereof under this guarantee, only and only if you serve upon us a written claim or demand in terms of the guarantee on or before **_____(indicate a date twelve months after the validity of the guarantee).**

Dated this _____day of _____at Gandhinagar.

WITNESS

_____ _____

(Signature) (Signature)

_____ _____

(Name) (Name)

_____ _____

(Official address) (Designation with bank stamp)

_____ Attorney as Power of Attorney

(Signature) No._____ dt._____

_____

(Name)

_____

ANNEXURE – VII: FORM OF INTEGRITY PACT

To

The Regional Project Director (Western Region)
WAPCOS Limited
515, 5th Floor, Shree UGATI Corporate Park
Opp. Pratik Mall, Koba-Gandhinagar Road,
Kudasan, Dist: Gandhinagar, Gujarat-382421

Sub: Submission of Tender for the work of "Various Infrastructure construction works under Gujarat National Law University"

Dear Sir,

I/We acknowledge that WAPCOS is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process. I/We acknowledge that the Making of the Bid shall be regarded as an Unconditional and absolute Acceptance of this condition of the NIT.

I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by WAPCOS. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, WAPCOS shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid is accordance with terms and conditions of the tender/bid.

Yours faithfully

(Duly authorized signatory of the Bidder)

To be signed by the bidder and same signatory competent / authorized to sign the relevant contract on behalf of WAPCOS

FORMAT FOR INTEGRITY PACT

This Integrity Agreement is made at ..... on this ..... day of ..... 20.....

BETWEEN

WAPCOS Limited, New Delhi (Hereinafter referred as the **'Principal/Owner',** which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

.....

(Name and Address of the Individual/firm/Company)

through ..... (Hereinafter referred to as the

(Details of duly authorized signatory)

"Bidder/Contractor" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

Preamble

WHEREAS the Principal / Owner has floated the Tender (NIT No. .....) (Hereinafter referred to as "Tender/Bid") and intends to award, under laid down organizational procedure, contract for..... (Name of work) hereinafter referred to as the "Contract".

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "Integrity Pact" or "Pact"), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under:

Article 1: Commitment of the Principal/Owner

(1) The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:

(a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

(b) The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

(c) The Principal/Owner shall endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

(2) If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/Contractor(s)

(1) It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the WAPCOS all suspected acts of fraud or corruption or Coercion or Collusion of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.

(2) The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:

(a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.

(b) The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

(c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/ Contract(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

(d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/ representatives in India, if any. Similarly, Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

(e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

(3) The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

(4) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice means a wilful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the WAPCOS interests.

(5) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/her reputation or property to influence their participation in the tendering process).

Article 3: Consequences of Breach

Without prejudice to any rights that may be available to the Principal/Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/ Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

(1) If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as

to put his reliability or credibility in question, the Principal/Owner after giving 14 days' notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. Such exclusion may be forever or for a limited period as decided by the Principal/Owner.

(2) Forfeiture of EMD/Performance Guarantee/Security Deposit: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.

(3) Criminal Liability: If the Principal/Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of IPC Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

(1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/ Owner.

(3) If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

Article 5: Equal Treatment of all Bidders/Contractors/Subcontractors

(1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Subcontractors/sub-vendors.

(2) The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.

(3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6- Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.

If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority, WAPCOS

Article 7- Other Provisions

(1) This Pact is subject to Indian Law, place of performance and jurisdiction is the Headquarters of the Principal/Owner, who has floated the Tender.

(2) Changes and supplements need to be made in writing. Side agreements have not been made.

(3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.

(4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intensions.

(5) It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

Article 8- LEGAL AND PRIOR RIGHTS

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For

the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:

.....

(For and on behalf of Principal/Owner)

.....

(For and on behalf of Bidder/Contractor)

WITNESSES:

1. .....

(signature, name and address)

2. .....

(signature, name and address)

Place:

Dated:

ANNEXURE – VIII: FORMAT OF RESUME OF PROPOSED PERSONNEL

The bidder shall provide all the information requested below:

Position		
Personnel information	Name	Date of birth
	Professional qualifications	
Present employment	Name of Employer	
	Address of Employer	
	Telephone	Contact (manager / personnel officer)
	Fax	E-mail
	Job title	Years with present Employer

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

From	To	Company, Project , Position, and Relevant Technical and Management Experience

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Name of Personnel **Signature** **Date** {day/month/year}

Name of authorized Representative of the Contractor **Signature** **Date**

ANNEXURE – IX: ACCEPTABLE MAKES OF MATERIALS

Acceptable makes of materials to be used in the work are enclosed. In case of non-availability of these makes, after the approval of WAPCOS, the Contractor can use the alternative makes only BIS marked materials. Non BIS marked materials may be permitted by the WAPCOS only when BIS marked materials are not manufactured.

List of acceptable makes for civil works I/C water supply and sanitary works

Details of Materials	Manufacturers Name
Reinforcement Steel (TMT – Fe500)	SAIL, Tata Steel, Rashtriya Ispat Nigam Ltd. (RINL), Jindal Steel & Power Ltd. And JSW Steel Ltd.
White Cement	Birla White, J.K. White
53 Grade Ordinary Portland Cement /Portland Pozzolona Cement.	ACC, Ultratech, Vikram, Ambuja, Jaypee Cement, J.K. Cement ,
Tubular truss /Structural Steel	SAIL, Tata Steel, Rashtriya Ispat Nigam Ltd. (RINL), Jindal Steel & Power Ltd. And JSW Steel Ltd.
Polycarbonate sheet	GE Platic, LEXAM
Decking steel sheet	Ezydec of TATA /Lloyed Superdeck / Multi Color
Vitrified tiles	RAK / Sunheart / Kajaria / Mobito/ OrientBell
Ceramic/Glazed tiles	Somany / Mobito / Sunheart / Kajaria / OrientBell
Heat resistant tiles	Thermatek / Orient
Chemical emulsion for anti-termite treatment (Chloropyriphos emulsifiable concentrate)	Dursban 50 TC / Terrashield 50 TC or equivalent
Distemper/Paints Plastic Emulsion Synthetic Enamel Oil Bound Distemper Steel Primer Wood Primer	SKK/Asian/ICI Asian/Berger/Nerolac ---do-- ICI, Nerolac, Berger, Asian Paints, Fibrex ICI, Nerolac, Berger, Asian Paints
Exterior waterproofing paint Wood finish (Melamine & PU Polish)	Fibrex / Polydeck / SKK Jivanjor / Jivanjor (PU) / Asian
Curing compound	Fosroc, Sika, Cico
Anti-Corrosive epoxy paint (For Concrete surface)	Fibrex / BASF
Anti-Corrosive epoxy paint (For steel surface)	Fibrex / BASF
Wood Work Ply board/ Plywood Laminate Laminated Particle Board Veneer Ply Flush Door (Pine Filled) Locks Anodised Aluminium fittings for door & windows Door closer Floor springs	Merino / Green / Century / Prima Kanchan Merino / Green Lam / Century Merino / Green / Prima Kanchan Merino / Green / Century Merino / Green / Kutty / Century / Prima Kanchan Godrej / Golden / Indo brass / Harrison or equivalent Nu-lite /Argent / Classic (heavy duty) or equivalent Everite / Prabhat / Door King / Hardwin Sandhu / Prabhat / Door King / Hardwin

Factory pressed Laminated doors	Merino / Green / Century
Factory pressed Laminated doors	Merino / Green / Century
Inherent Fire Retardant Fabric	Trevira CS fabric of RSWM Ltd. or equivalent
Fire retardant paint	Nullifier / Signum / Godrej
Steel Fire rated doors	Navair / Godrej / Promat
Wooden Fire rated Doors	Navair / Signum / Abacus
Fire rated vision Panels	Pilkington, Schott, Ferilite, Saint Gobain
Fire rated hardware	Dorma / Becker F S / Assaabloy
Skylight – Thermoform	Mccoy Architectural System, Vergola, Abucob
G.I. Steel door frame	Kutty Doors, Shakti Metdoor, Navair, Romat, Synergy Thrislington.
Friction Stay Hinges	Earl-Bihari, Ebco, Rotto, Cotswold, GU, Dorset.
Steel Windows/ Pressed Steel frames	San Harvic, Steelman Industries, PD Industries, Metal Windows, Bhawani / Ganpati Udyog (Rajpura) / JMD Steel
Paver block & Kerb Stone	Nitco, Unitile, NTC, Ultra
Glass Mosaic Tiles	Italia / Opio / Mridul
Wood Adhesive	Jivanjor / Fevicol / 3M
Tile Adhesive	ARDEX Endura / Fibrex / Pidilite / BASF
Grouting Compound	ARDEX Endura / Pidilite / Laticrete / BASF / Fibrex
Mosaic tiles	NITCO / Modern / NTC / GICO
Dash/Anchoring FASTENERS	HILTI / Fischer / Excel
High performance Epoxy based resin anchor system	BASF / Fosroc / Fibrex
Nuts/Bolts & Screws	GKW / Atul
Dholpur / red sand stone	Gang saw cut from Bansi Paharpur Quarry
Aluminium sections for doors & windows etc.	Jindal / Hindalco
Hardware fittings for Aluminium windows & doors	Powder coated fittings of Pulse make (LGF SYSMAC INDIA) / ALUTEC
Polyster Powder Coating Shades	Nerolac, Berger, J & N
Metal ceiling	Hunter Douglas / Aura (ASIPL) / CKM /
Mineral Fiber Ceiling	Armstrong / OWA / CKM
Extruded Polystyrene sheet (XPS)	Dow Corning / Supreme
Aluminium Composite Panel	ALUCOBOND / REYNOBOND / ALPOLIC
Specialised agencies for Aluminium glazing / Structural glazing / Aluminium door & windows / ACP work.	Bharat Archimetal / Green Façade Solution / AGV Alfab
Silicon sealant	GE / Dow corning
solvent based silicone repellent coating	PIDILITE / Fibrex / BASF
PVC Continuous fillet for periphery packing of Glazing	Roop / Anand / Forex
Backer Rod	Supreme Industries Ltd. Or Equivalent
Anti – static vinyl flooring	ARMSTRONG / TARKETT / FORBO
Anti – static homogeneous PU flooring	BASF / Fibrex
PU flooring	BASF / Fibrex
Float Glass	Modi Glass / Saint Gobain Glass

Reflective Glass	Saint Gobain / Asahi (India)
Hermitically sealed performance glass & Toughened Glass	Saint Gobain, Asahi
Glass processor for making DGU/ Toughening (with Uniglass European Furnance)	AIS (Roorkee) / Sheesh Mahal Tuff Glasses Pvt. Ltd. (Rohtak) / Bala ji safety glass (Bangalore) / Fishwa Glass (Mumbai)
Looking glass / mirror	Saint Gobain / HNG / Modi Guard
Textured paint	Unitile products / Heritage (Bakelite Hylam Ltd) / Spectrum / SKK
Vertical / Venetian Blinds	Mac Décor / Vista Levealor / Neha's Touch / Cape Decor
Approved agency for Stainless steel railing	Jindal Stainless Ltd. / Kich / Khurana Fab / Kenz
Stainless Steel Railing, Accessories etc.	Jindal / Dorma / Geze
Gypsum Board	India Gypsum / Lafarge Boral
Precoated Galvanised sheets	Multicolor / Interarch
Wall Putty	JK / Birla
Floor hardener	PIDILITE / Fosroc / Sika / BASF / Fibrex
Polysulphide Sealant	PIDILITE / Fosroc / Sika / BASF / Fibrex
Specialised agency for expansion joint treatment	M/s Technocrats / M/s Tuff waterproofing Co. / BASF / Fibrex
Admixtures	Fosroc / Fibrex / BASF
HCI pipes	RIF (Raj Iron Foundary)
Centrifugally Cast (spun) Iron Pipes (Class LA)	Electro Steel / Kesoram
Centrifugally Cast (spun) Iron Pipes & Fittings	NECO / HEPCO (BINAY UDYOG) / Electro Steel
CPVC Pipes	SPERRY / ASTRAL / PRINCE / AJAY
G. I. Pipes	TATA / Jindal Hisar (as per class specified in the BOQ)
G. I. Fittings	Unik, AVR, Zoloto
HDPE Pipes	Reliance, jain Pipes, Oriplast
DI Pipes	Electro steel, Jindal, TATA Ductura
DI Fittings	Kartar, Electro steel
CI Fittings	Neel, Lartar, Sarkar
UPVC Pipe and Fitting	Astral, Supereme, Finolex
C.I. Manhole Covers, Frames & GI Gratings	NECO, Raj Iron Foundary Agra, BIC, SKF
Composite Pipe	Kitec
Stone ware pipes	Perfect Potteries / Anand / Hind or ISI marked S.W. Pipes, Parryware, Priyaclay
Hot water insulation (Rubberised sleeve)	Vidoflex / Armaflex / CareFlex
Insulation for external /exposed hot water pipes	KAIFLEX, ARMAFLEX, CAREFLEX
External Pipe coating 4 mm thick – 7 layered	Makpolycote / Pypcote
SFRC Manhole covers & Gratings	Kk, jain, Pargati
Brass Stop & Bib Cock	Zoloto, sant, L&K, Leader
Gratings & Rain water outlet fittings	Neer / Camry
Vibration eliminators	Resistoflex
Float Valve	IVC / Leader / Prayag
Cockroach trap	Chilly / Camry

Hot water insulation (Mineral wool insulation)	Rocklloyd / UP Twiga
Pressure gauge	Fiebig / H Guru
Manhole covers & G.T. covers	BIC
Chinaware	Hindustan / Cera / Kohler / Parryware / Hind Ware / Kohler
PVC Flushing cistern	Commander / Coral / Hindware (Simline) / Hindustan
Bakelite seat & Lid	Commander / Hindware / Parryware
R.C.C. Pipes	Pragati
C. P. Brass fittings	Jaquar / Kohler / Marc / Parryware
Brass Ferrules	Dhawan Sanitary Udyog (Prima), Kalsi, Annapurna
Copper pipes & PVC connections	Camry
C.P. bottle traps	Camry
Extension nipples	Camry
C.P. bathroom accessories like robe hook, towel ring, towel rail, soap dish, tumbler holder, toilet paper holder, towel rack etc.	Camry / Parko / Sieko / ESS ESS
Spreader, Waste Coupling	Gem / Ess Ess / Camry
Stainless steel kitchen sinks	Nirali / Kingston / Neelkanth
Glazed Fire Clay Kitchen Sink	PAMINI, SANFIRE, RKCP
Non – return valves & fully-way valves	Heavy quality Leader / Zolotto
Gun Metal Peet Valve	Heavy quality Sant / Zolotto
Butterfly valves	Audco
PVC water storage tanks	Sintex / Target
Water meters	Capstan Meters India Ltd. / Kranti
For Structural Glazing	
Aluminium	Hindalco/ Indal /Jindal
Masking Tapes	Sun Control/ Wonder Polymer
S. S. Screws/ Bolts	Kundan /Puja / Atul
Dash Fasteners	Hilti /Fischer
S.S. Friction Stay	Alu Alpha/ Securistyle
E.P.D.M. Gaskets	Hanu Industries / Roop
Standards for Tempering	DIN – 1249 – Part – 12 (1990)
Weather Silicon	GE / Dow Corning
Structural Sealant	GE / Dow Corning

ACCEPTABLE MAKES OF MATERIALS

Acceptable makes of materials to be used in the work are enclosed. In case of non-availability of these makes, after the approval of WAPCOS, the Contractor can use the alternative makes only BIS marked materials. Non BIS marked materials may be permitted by the WAPCOS only when BIS marked materials are not manufactured.

List of acceptable makes for electrical works

Details of Materials	**Manufacturers Name**

ELECTRICAL HIGH SIDE & DG EQUIPMENTS	
Alternator	Stamford / Caterpillar / Kirloskar
Engine	Cummins / Caterpillar / Kirloskar
Packaged / Unitised Sub station	Schneider / ABB
11/33kv HT Panels	L&T-SPC Electrotech / Schneider-Authorised Integrator / ABB
Transformer	Voltamp / Kirloskar / Esennar
Fuses & Switch Fuse Unit	ABB / Schneider / L&T
M V Switchgear (ACB, MCCB, Contactor)	L & T/Schneider/ABB
Scraped earth metal clad socket and top	Siemens/Legrand/Crompton/BCH
Isolators for Motors	Legrand/Siemens/Schneider/L&T/ABB
Timer, SPPR, Overload relay	L&T/ ABB/ Siemens / Schneider
Digital Meters	AE / L&T / Rishab / El measure
Protective & APFC relays	Alstom / L&T / Schneider
CT / PT	AE / KAPPA / Matrix
Indicating Lamps (LED type)	Vaishno / Kaycee / L&T
Rotary Switches	L&T / KayCee / BCH
Terminal Blocks	Elmex / Wago / Connectwell
MV panels / Synchronizing Panels / All sub Panels	MV panels / Synchronizing Panels / All sub Panels
CABLE TERMINATION & ACCERORIES	
Cable Lugs	Dowells crimping type / Commet
Cable Glands	Chromium plated Brass heavy duty glands, weatherproof with rubber washers and gaskets of Comet make / Beliga
P.V.C. insulated copper conductor cables (All wires shall be multistranded)	Finolex / Polycab / GM
PVC insulated Aluminium conductor armoured cables of 1100 V/11000 V grade	Nicco/Skytone/INCAB
Co-axial cables	Delton
Telephone wires	Delton/National/Mazda/RR Kabel
HT Cable end terminations	Birla 3M / Reychem / Frontec
CONDUTING & WIRING ACCESORIES	
M.S. Conduits / G.I. Conduits and accessories	BEC / AKG
P.V.C. conduits and accessories	BEC(Grey) / AKG / Polypack
Switches, plugs, telephone outlets & wiring accessories (Piano type)	Anchor (Piano type)/GM/Havelles
Switches, plugs, telephone outlets & wiring accessories (Modular)	MK / Siemens / GM
PVC Insulation Tape	Steel Grip / Anchor
Phenol Laminated Sheet	Hylum / Formica
Race way / Cable Trays	CTM Engineering / Slotco / OBO / Profab
LIGHTING DBS & MCBs	
Miniature circuit breakers & Distribution Boards	L&T/Legrand/Schneider/GM
Earth Leakage Circuit Breaker	L&T/Legrand/Schneider/GM
Enclosures (Standard size only)	Makes as per MCBs

LIGHTING FIXTURES & FANS	
Bulk Head Fittings	Philips / EON Luxtra / Wipro / Polycab
Exhaust fans, ceiling Fans & Wall mounted Fans	Havells / Crompton / EON / Orient
Fluorescent light fixtures	Wipro/Philips
CFL light fixtures	Wipro/Philips
LED lights	Philips/Osram/Avni/Wipro
ELV- TELEPHONE/ CCTV/ DOOR ACCESS/ FIRE ALARM/ PUBLIC ADDRESS & MISC. SYSTEMS	
SMOKE DETECTORS	NOTIFIER/ HONEYWELL(XLS)
HEAT DETECTORS	NOTIFIER/ HONEYWELL(XLS)
MANUAL CALL BOX	NOTIFIER/ HONEYWELL(XLS)
HOOTER/ SOUNDER	NOTIFIER/ HONEYWELL(XLS)
RESPONSE INDICATOR	NOTIFIER/ HONEYWELL(XLS)
FIRE PANEL	NOTIFIER/ HONEYWELL(XLS)
PA AMPLIFIER	BOSE/ PHILIPS
PA SPEAKERS	BOSE/ PHILIPS
LINE MATCHING TRANSFORMER	BOSE/ PHILIPS
GOOSE NECK MIKE	BOSE/ PHILIPS
INVERTER	LUMINOUS / EXIDE / MICROTECH
CAMERA WITH ALL ACCESSORIES	INGRESS / SPARSH /PANASONIC / SIEMENS/ HONEYWELL / PELCO / HKVISION
ROAD BARRIER	NICE/ MAGNETICS/ GODREJ/ GE
CARD READER	SENSORMATIC-USA/ MOTOROLA /HONEYWELL(XLS)
MONITOR	ALBA/ LG/ SAMSUNG
VCR	BPL/ PANASONIC
MULTIPLEXER	SENSORMATIC OR EQUIVALENT
SEQUENCER	ALBA/ VANTAGE
PROXIMITY CARD	MOTOROLA/ HUGHES/ HONEYWELL/GE/SIEMENS
TELEPHONE TAG BLOCK	KRONE/ TVS R&M / SYSTIMAX / SCHNEIDER / PANDUIT
TELEPHONE CABLES	DELTON / SKYTONE/ CLIPSAL
CO-AXIAL CABLES	FINOLEX/ DELTON/SKYTONE
EPABX	ALCATEL/ SIEMENS/ NORTEL
CCTV SYSTEM	INGRESS / SPARSH /PANASONIC / SIEMENS/ HONEYWELL / PELCO
IT & TELECOM SYSTEM	SCHNEIDER/ SYSTIMAX/ PANDUIT
FIRE ALARM SYSTEM	NOTIFIER/ HONEYWELL(XLS)/ SIEMENS
MISCELLANEOUS SYSTEMS	
Batteries	Exide / Standard
Battery charger	Keltron / Nelco / Exide / Mahamai
Cable Management systems (Wall / Floor)	MK / Legrand
G.I. Pipe	Jindal (Hisar)
Street light poles	Data systems/Master Craft/K-lite/Hi-lite
Energy meter	Jaipur/Havells
Telephone Tag Block	Krone

Computer sockets & plugs	Lucent/IBM/AMP/Legrand
Data Cables	Lucent/IBM/AMP/Legrand
Signages	MK / Thorn
Lifts	KONE/OTIS/SCHINDLER

ANNEXURE –X : SAFETY CODES

1. Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used, an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and hand-hold shall be provided on the ladder and the ladder shall be given an inclination not steeper than ¼ to 1(¼ horizontal and 1 vertical).

2. Scaffolding of staging more than 3.6 m (12ft.) above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm. (3ft.) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

3. Working platforms, gangways and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6 m (12ft.) above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in (2) above.

4. Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of person or materials by providing suitable fencing or railing whose minimum height shall be 90 cm. (3ft.).

5. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m. (30ft.) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. (11½") for ladder up to and including 3 m. (10 ft.) in length. For longer ladders, this width should be increased at least ¼” for each additional 30 cm. (1 foot) of length. Uniform step spacing of not more than 30 cm shall be kept. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites or work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defense of every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit; action or proceedings to any such person or which may, with the consent of the contractor, be paid to compensate any claim by any such person

6. (a) Excavation and Trenching - All trenches 1.2 m. (4ft.) or more in depth, shall at all times be supplied with at least one ladder for each 30 m. (100 ft.) in length or fraction thereof, Ladder shall extend from bottom of the trench to at least 90 cm. (3ft.) above the surface of the ground. The side of the trenches which are 1.5 m. (5ft.) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing.

The excavated materials shall not be placed within 1.5 m. (5ft.) of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances, undermining or undercutting shall be done.

(b) Safety Measures for digging bore holes: -

i. If the bore well is successful, it should be safely capped to avoid caving and collapse of the bore well. The failed and the abandoned ones should be completely refilled to avoid caving and collapse;

ii. During drilling, sign boards should be erected near the site with the address of the drilling contractor and the Engineer in-charge of the work;

iii. Suitable fencing should be erected around the well during the drilling and after the installation of the rig on the point of drilling, flags shall be put 50m all-round the point of drilling to avoid entry of people;

iv. After drilling the bore well, a cement platform (0.50m x 0.50m x 1.20m) 0.60m above ground level and 0.60m below ground level should be constructed around the well casing;

v. After the completion of the bore well, the contractor should cap the bore well properly by welding steel plate, cover the bore well with the drilled wet soil and fix thorny shrubs over the soil. This should be done even while repairing the pump;

vi. After the bore well is drilled the entire site should be brought to the ground level.

7. Demolition - Before any demolition work is commenced and also during the progress of the work,

(i) All roads and open areas adjacent to the work site shall either be closed or suitably protected.

(ii) No electric cable or apparatus which is liable to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged.

(iii) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.

8. All necessary personal safety equipment as considered adequate by the Engineer-in-Charge should be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned. The following safety equipment shall invariably be provided.

(i) Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.

(ii) Those engaged in white washing and mixing or stacking of cement bags or any material which is injurious to the eyes, shall be provided with protective goggles.

(iii) Those engaged in welding works shall be provided with welder's protective eye shields.

(iv) Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.

(v) When workers are employed in sewers and manholes, which are in active use, the contractors shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public. In addition, the contractor shall ensure that the following safety measure are adhered to:-

(a) Entry for workers into the line shall not be allowed except under supervision of the JE or any other higher officer.

(b) At least 5 to 6 manholes upstream and downstream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manhole for working inside.

(c) Before entry, presence of Toxic gases should be tested by inserting wet lead acetate paper which changes colour in the presence of such gases and gives indication of their presence.

(d) Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen kit.

(e) Safety belt with rope should be provided to the workers. While working inside the manholes, such rope should be handled by two men standing outside to enable him to be pulled out during emergency.

(f) The area should be barricaded or cordoned off by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.

(g) No smoking or open flames shall be allowed near the blocked manhole being cleaned.

(h) The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.

(i) Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer-in-Charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.

(j) Gas masks with Oxygen Cylinder should be kept at site for use in emergency.

(k) Air-blowers should be used for flow of fresh air through the manholes. Whenever called for, portable air blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non sparking gas engines also could be used but they should be placed at least 2 metres away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present.

(l) The workers engaged for cleaning the manholes/sewers should be properly trained before allowing to work in the manhole.

(m) The workers shall be provided with Gumboots or non-sparking shoes bump helmets and gloves non sparking tools safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.

(n) Workmen descending a manhole shall try each ladder stop or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.

(o) If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.

(p) The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer-in-Charge regarding the steps to be taken in this regard in an individual case will be final.

(vi) The Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precaution should be taken: -

(a) No paint containing lead or lead products shall be used except in the form of paste or readymade paint.

(b) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scrapped.

(c) Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during and on the cessation of work.

9. The Contractor shall not employ women and men below the age of 18 on the work of painting with product containing lead in any form, wherever men above the age of 18 are employed on the work of lead painting, the following principles must be observed for such use:

(i) White lead, sulphate of lead or product containing these pigment, shall not be used in painting operation except in the form of pastes or paint ready for use.

(ii) Measures shall be taken, wherever required in order to prevent danger arising from the application of a paint in the form of spray.

(iii) Measures shall be taken, wherever practicable, to prevent danger arising out of from dust caused by dry rubbing down and scraping.

(iv) Adequate facilities shall be provided to enable working painters to wash during and on cessation of work.

(v) Overall shall be worn by working painters during the whole of working period.

(vi) Suitable arrangement shall be made to prevent clothing put off during working hours being spoiled by painting materials.

(vii) Cases of lead poisoning and suspected lead poisoning shall be notified and shall be subsequently verified by medical man.

(viii) WAPCOS may require, when necessary medical examination of workers.

(ix) Instructions with regard to special hygienic precautions to be taken in the painting trade shall be distributed to working painters.

10. When the work is done near any place where there is risk of drowning, all necessary equipment's should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision, should be made for prompt first aid treatment of all injuries likely to be obtained during the course of the work.

11. Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions: -

(i) (a) These shall be of good mechanical construction, sound materials and adequate strength and free from patent defects and shall be kept repaired and in good working order.

(b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.

(ii) Every crane driver or hoisting appliance operator, shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding winch or give signals to operator.

(iii) In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load each safe working load and the condition under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

(iv) In case of departmental machines, the safe working load shall be notified by the Electrical Engineer-in-Charge. As regards contractor's machines the contractors shall notify the safe working load of the machine to the Engineer-in-Charge whenever he brings any machinery to site of work and get it verified by the Electrical Engineer concerned.

12. Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves, sleeves and boots as may be necessary should be provided. The worker should not wear any rings, watches and carry keys or other materials which are good conductors of electricity.

13. All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.

14. These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the contractor.

15. To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the contractor shall be open to inspection by the Labour Officer or Engineer-in-Charge of the department or their representatives.

16. Notwithstanding the above clauses from (1) to (15), there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force in the Republic of India.

For & on behalf of Tenderer

ANNEXURE – XI: MODEL RULES FOR THE PROTECTION OF HEALTH AND SANITARY ARRANGEMENTS FOR WORKERS EMPLOYED BY CONTRACTORS

1. APPLICATION

These rules shall apply to all buildings and construction works in which twenty or more workers are ordinarily employed or are proposed to be employed in any day during the period during which the contract work is in progress.

2. DEFINITION

Work place means a place where twenty or more workers are ordinarily employed in connection with construction work on any day during the period during which the contract work is in progress.

3. FIRST-AID FACILITIES

(i) At every work place, there shall be provided and maintained, so as to be easily accessible during working hours, first-aid boxes at the rate of not less than one box for 150 contract labour or part thereof ordinarily employed.

(ii) The first-aid box shall be distinctly marked with a red cross on white back ground and shall contain the following equipment: -

(a) For work places in which the number of contract labour employed does not exceed 50- Each first-aid box shall contain the following equipment's: -

1. 6 small sterilized dressings.
2. 3 medium size sterilized dressings.
3. 3 large size sterilized dressings.
4. 3 large sterilized burn dressings.
5. 1 (30 ml.) bottle containing a two per cent alcoholic solution of iodine.
6. 1 (30 ml.) bottle containing Sal volatile having the dose and mode of administration indicated on the label.
7. 1 snakebite lancet.
8. 1 (30 gms.) bottle of potassium permanganate crystals.
9. 1 pair scissors.
10. 1 copy of the first-aid leaflet issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.
11. 1 bottle containing 100 tablets (each of 5 gms.) of aspirin.
12. Ointment for burns.
13. A bottle of suitable surgical antiseptic solution

(b) For work places in which the number of contract labour exceed 50. Each first-aid box shall contain the following equipment's.

1. 12 small sterilized dressings.

2. 6 medium size sterilized dressings.

3. 6 large size sterilized dressings.

4. 6 large size sterilized burn dressings.

5. 6 (15 gms.) packets sterilized cotton wool.

6. 6. 1 (60 ml.) bottle containing a two per cent alcoholic solution iodine.

7. 1 (60 ml.) bottle containing Sal volatile having the dose and mode of administration indicated on the label

8. 1 roll of adhesive plaster.

9. 1 snake bite lancet.

10. 1 (30 gms.) bottle of potassium permanganate crystals.

11. 1 pair scissors.

12. 1 copy of the first-aid leaflet issued by the Director General Factory Advice Service and Labour Institutes /Government of India.

13. A bottle containing 100 tablets (each of 5 gms.) of aspirin.

14. Ointment for burns.

15. A bottle of suitable surgical antiseptic solution.

(iii) Adequate arrangements shall be made for immediate recoupment of the equipment when necessary

(iv) Nothing except the prescribed contents shall be kept in the First-aid box.

(v) The first-aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.

(vi) A person in charge of the First-aid box shall be a person trained in First-aid treatment in the work places where the number of contract labour employed is 150 or more.

(vii) In work places where the number of contract labour employed is 500 or more and hospital facilities are not available within easy distance from the works. First-aid posts shall be established and run by a trained compounder. The compounder shall be on duty and shall be available at all hours when the workers are at work.

(viii) Where work places are situated in places which are not towns or cities, a suitable motor transport shall be kept readily available to carry injured person or person suddenly taken ill to the nearest hospital.

4. DRINKING WATER

(i) In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.

(ii) Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.

(iii) Every water supply or storage shall be at a distance of not less than 50 feet from any latrine drain or other source of pollution. Where water has to be drawn from an existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap door which shall be dust and waterproof.

(iv) A reliable pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

5. WASHING FACILITIES

(i) In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of contract labour employed therein.

(ii) Separate and adequate cleaning facilities shall be provided for the use of male and female workers.

(iii) Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

6. LATRINES AND URINALS

(i) Latrines shall be provided in every work place on the following scale namely: -

(a) Where female is employed, there shall be at least one latrine for every 25 females.

(b) Where males are employed, there shall be at least one latrine for every 25 males.

Provided that, where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females as the case may be upto the first 100, and one for every 50 thereafter.

(ii) Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.

(iii) The inside walls shall be constructed of masonry or some suitable heat-resisting non-absorbent materials and shall be cement washed inside and outside at least once a year, Latrines shall not be of a standard lower than borehole system.

(iv) (a) Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers "For Men only" or "For Women Only" as the case may be.

(b) The notice shall also bear the figure of a man or of a woman, as the case may be.

(v) There shall be at least one urinal for male workers up to 50 and one for female workers up to fifty employed at a time, provided that where the number of male or female workmen, as the case may be exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females up to the first 500 and one for every 100 or part thereafter.

(vi) (a) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.

(b) Latrines and urinals other than those connected with a flush sewage system shall comply with the requirements of the Public Health Authorities.

(vii) Water shall be provided by means of tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.

(viii) Disposal of excreta: - Unless otherwise arranged for by the local sanitary authority, arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator. Alternately, excreta may be disposed off by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm. layer of waste or refuse and then covering it with a layer of earth for a fortnight (when it will turn to manure).

(ix) The contractor shall at his own expense, carry out all instructions issued to him by the Engineer-in-Charge to effect proper disposal of night soil and other conservancy work in respect of the contractor's workmen or employees on the site. The contractor shall be responsible for payment of any charges which may be levied by Municipal or Cantonment Authority for execution of such on his behalf.

7. PROVISION OF SHELTER DURING REST

At every place there shall be provided, free of cost, four suitable sheds, two for meals and the other two for rest separately for the use of men and women labour. The height of each shelter shall not be less than 3 meters (10 ft.) from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sq.m. (6 sft) per head.

Provided that the Engineer-in-Charge may permit subject to his satisfaction, a portion of the building under construction or other alternative accommodation to be used for the purpose.

8. CRECHES

(i) At every work place, at which 20 or more women worker are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under the age of six years. One room shall be used as a play room for the children and the other as their bedroom. The rooms shall be constructed with specifications as per clause 19H (ii) a,b& c.

(ii) The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.

(iii) The contractor shall supply adequate number of toys and games in the play room and sufficient number of cots and beddings in the bed room.

(iv) The contractor shall provide one ayaa to look after the children in the crèche when the number of women workers does not exceed 50 and two when the number of women workers exceed 50.

(v) The use of the rooms earmarked as crèches shall be restricted to children, their attendants and mothers of the children.

9. CANTEENS

i. In every work place where the work regarding the employment of contract labour is likely to continue for six months and where in contract labour numbering one hundred or more are ordinarily employed, an adequate canteen shall be provided by the contractor for the use of such contract labour.
ii. The canteen shall be maintained by the contractor in an efficient manner.
iii. The canteen shall consist of at least a dining hall, kitchen, storeroom, pantry and washing places separately for workers and utensils.
iv. The canteen shall be sufficiently lighted at all times when any person has access to it.
v. The floor shall be made of smooth and impervious materials and inside walls shall be lime washed or colour washed at least once in each year. Provided that the inside walls of the kitchen shall be lime-washed every four months.
vi. The premises of the canteen shall be maintained in a clean and sanitary condition.
vii. Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.
viii. Suitable arrangements shall be made for the collection and disposal of garbage.
ix. The dining hall shall accommodate at a time 30 per cent of the contract labour working at a time.
x. The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chairs shall not be less than one square meter (10 sft) per diner to be accommodated as prescribed in sub-Rule 9.
xi. (a) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number. (b) Washing places for women shall be separate and screened to secure privacy.

xii. Sufficient tables stools, chair or benches shall be available for the number of diners to be accommodated as prescribed in sub-Rule 9.

xiii. (a) 1. There shall be provided and maintained sufficient utensils crockery, furniture and any other equipment's necessary for the efficient running of the canteen.

xiv. 2. The furniture utensils and other equipment shall be maintained in a clean and hygienic condition.

(b) 1. Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.2. A service counter, if provided, shall have top of smooth and impervious material.3. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment's.

xv. The food stuffs and other items to be served in the canteen shall be in conformity with the normal habits of the contract labour.

xvi. The charges for food stuffs, beverages and any other items served in the canteen shall be based on 'No profit, no loss' and shall be conspicuously displayed in the canteen.

xvii. In arriving at the price of foodstuffs, and other article served in the canteen, the following items shall not be taken into consideration as expenditure namely: -

(a) The rent of land and building.

(b) The depreciation and maintenance charges for the building and equipment provided for the canteen.

(c) The cost of purchase, repairs and replacement of equipment including furniture, crockery, cutlery and utensils.

(d) The water charges and other charges incurred for lighting and ventilation

(e) The interest and amounts spent on the provision and maintenance of equipment provided for the canteen.

xviii. The accounts pertaining to the canteen shall be audited once every 12 months by registered accountants and auditors.

10. ANTI-MALARIAL PRECAUTIONS

The contractor shall at his own expense, conform to all anti-malarial instructions given to him by the Engineer-in-Charge including the filling up of any borrow pits which may have been dug by him.

11. The above rules shall be incorporated in the contracts and in notice inviting tenders and shall form an integral part of the contracts.

12. AMENDMENTS

Government may, from time to time, add to or amend these rules and issue directions - it may consider necessary for the purpose of removing any difficulty which may arise in the administration thereof.

For & on behalf of Tenderer

Annexure –XII- Information Required to Calculate the BID Capacity

1. To Calculate the Valve of "A"

A table containing value of Civil Engineering Works in respect to Projects (Turnkey Projects/ Item rate contract/ Construction works) undertaken by the Bidder during the last 5 Years is as follows:

Sl.No.	Year	Value of Civil Engineering Works undertaken w.r.t projects (Rs. In Crores)
1	2018-19	
2	2017-18	
3	2016-17	
4	2015-16	
5	2014-15	

Maximum Value of projects that have been undertaken during the F.Y…… out of the

last 5 Years and value thereof is Rs. Crore (Rupees……)

Further, value updated to the price level of the Year indicated in Appendix is as follows:

Rs…… Crores X …(Updation Factor as per Appendix) = Rs…….. Crores

(Rupees……)

…… ……. …….. …… Authorized Signatory For and on behalf of ……..(Name Signatory) of the Bidder)	Name of the Statutory Auditor's Firm Seal of the audit firm: (Signature, name and designation and Membership No. of authorized Signatory)

2. To calculate the value of "B"

A table containing value of all the existing commitments and on-going workings to be completed during the next Years is as follows:

Sl. No	Name of project / work	Percentage of participation of Bidder in the project	Dater of start / appointed date of project	Value of contract as per Agreement / LOA (Rs. In Crore)	Value of work completed (Rs. In Crore)	Balance value of work to be completed (Rs. In Crore)	Anticipated date of completion	Balance value of work at 2018-19 price level (Rs. In Crore)
1	2	3	4	5	6	7=(5-6)	8	9=(3X7X#)
#								

Updation Factor as given below

For Year	**F.Y / Calendar Year**	**Updation Factor**
1	2018-19	1.00
2	2017-18	1.05
3	2016-17	1.10
4	2015-16	1.15
5	2014-15	1.20

The Statement showing the value of allexisting commitments and ongoing works as well as the stipulated period of completion remaining for each of the works mentioned above is verified from the certificate issued that has been countersigned by the client or its Engineer-in-charge not below the rank of Executive Engineer or equivalent in respect of projects or Concessionaire / Authorised Signatory of SPV in respect ofBOT Projects. No awarded / ongoing works has been left in the aforesaid statement which has been awarded to M/s……. individually / and other member M/s ……. and M/s ……, as on due date of this tender.

…….. …… Authorized Signatory For and on behalf of ……..(Name Signatory) of the Bidder)	Name of the Statutory Auditor's Firm Seal of the audit firm: (Signature, name and designation and Membership No. of authorized Signatory)

SECTION– VI- FORMS:

LETTER OF TRANSMITTAL	
FORM-A :	FINANCIAL INFORMATION
FORM-B :	SOLVENCY CERTIFICATE
FORM-C :	STRUCTURE & ORGANISATION
FORM-D :	NO CONVICTION CERTIFICATE
FORM-E :	UNDERSTANDING THE PROJECT SITE
FORM-F :	NO DEVIATION CERTIFICATE
FORM-G :	INTEGRITY PACT
FORM-H :	PRELIMINARY AGREEMENT
FORM-I :	LIST OF EQUIPMENTS

SECTION– VI: FORMS

LETTER OF TRANSMITTAL

To
The Regional Project Director (Western Region)
WAPCOS Limited
515, 5th Floor, Shree UGATI Corporate Park
Opp. Pratik Mall, Koba-Gandhinagar Road,
Kudasan, Dist: Gandhinagar, Gujarat-382421

Subject: Submission of bids for the work of
Sir,
Having examined the details given in the bid document for the above work, I/we hereby submit the relevantinformation.
1. I/we hereby certify that all the statement made and information supplied in the enclosed forms A to Hand accompanying statement are true and correct.
2. I/we have furnished all information and details necessary for eligibility and have no further pertinentinformation to supply.
3. I/we submit the following certificates in support of our suitability, technical knowledge and capabilityfor having successfully completed the following eligible similar works:

Sr. No.	Name of Work	Certificate From

Certificate: It is certified that the information given in the enclosed eligibility bid are correct. It isalso certified that I / We shall be liable to be debarred, disqualified / cancellation of enlistment incase any information furnished by me / us is found to be incorrect.

Enclosures: Seal of bidder

Date of submission:

Signature(s) of Bidder(s).

FORM 'A': FINANCIAL INFORMATION

1) Financial Analysis: Details to be furnished duly supported by figures in balance sheet/ profit & loss account for the last three years duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department (Copies to be attached).

Years	Gross Annual turnover on construction works	Profit/Loss (After Tax)
2018-19		
2017-18		
2016-17		
2015-16		
2014-15		

2) Financial arrangements for carrying out the proposed work.
3) Solvency Certificate from Bankers of the bidder in the prescribed Form "B".

Signature of Chartered Accountant
(with Seal)

Signature of Bidder(s).
(with Seal)

FORM "B": FORM OF BANKERS' CERTIFICATE FROM A SCHEDULED BANK

This is to certify that to the best of our knowledge and information that M/s./ Sh……. having marginally noted address, a customer of our bank are/is respectable and can be treated as good for any engagement up to a limit of

Rs……. (Rupees…….).

This certificate is issued without any guarantee or responsibility on the bank or any of the officers.

(Signature)

For the Bank

NOTE:

1. Banker's certificates should be on letter head of the Bank, sealed in cover addressed to tendering authority.

2. In case of partnership firm, certificate should include names of all partners as recorded with the Bank.

FORM "C": STRUCTURE & ORGANISATION

S.No.	Particulars	Details Submitted by Bidder
1.	Name & address of the bidder	
2.	Telephone no./Telex no./Fax no.	
3.	Legal status of the bidder (attach copies of original document defining the legal status) (a) An Individual (b) A proprietary firm (c) A firm in partnership (d) A limited company or Corporation	
4.	Particulars of registration with various Government Bodies (attach attested photocopy)	
	Organization/Place of Registration 1. 2. 3.	Registration No.
5.	Names and titles of Directors & Officers with designation to be concerned with this work.	
6.	Designation of individuals authorized to act for the organization	
7.	Has the bidder, or any constituent partner in case of partnership firm Limited Company/ Joint Venture, ever been convicted by the court of law? If so, give details.	
8.	In which field of Electrical Engineering construction the bidder has specialization and interest?	
9.	Any other information considered necessary but not included above.	

Signature of Bidder(s)

FORM-D: FORMAT FOR No-Conviction Certificate

[On the letter head of the Organization]

Subject: No-Conviction Certificate for --- (Name of the work / project)

This is to certify that _____ (Name of the organization), having registered office at _____ (Address of the registered office) has never been blacklisted or restricted to apply for any such activities by any Central / State Government Department or Court of law anywhere in the country.

This is also to certify that M/s _____ (Name of Organization), is not involved in any form of Corrupt and Fraudulent practices in past and will never be involved in future.

Yours faithfully, Date:

(Signature, name and designation of the Authorized signatory)

Place:

Name and seal of Bidder

FORM-E: FORMAT FOR UNDERSTANDING THE PROJECT SITE

(On Bidder Letter Head)

To,

The Regional Project Director (Western Region)
WAPCOS Limited
515, 5th Floor, Shree UGATI Corporate Park
Opp. Pratik Mall, Koba-Gandhinagar Road,
Kudasan, Dist: Gandhinagar, Gujarat-382421

Subject: Undertaking of the Site Visit for --- (Name of the work / project)

Sir,

I/we hereby certify that I/we have examined & inspected the site & its surrounding satisfactorily, where the project is to be executed as per the scope of works. I/ We are well aware about the following

- Location of the proposed building and its allied works.
- Site clearance and no cutting off the matured trees.
- Topography and contouring of the land where the project is to be executed to understand the cutting & filling during the construction and about depth of column/ foundation below the plinth beam.
- Nature of the ground & sub-soil of the site and accessibility to the site.
- Existing surrounding road level to finalize plinth beam level as per standard norms.
- Location of Existing Sewer line & Water pipe line network to connect the proposed building and allied works to make the building functional.
- Location of existing Electric Sub-Station to supply the electricity for the proposed building and allied works to make the building functional.

I / We hereby submit our BID considering above all facts gathered during site visit and each & every aspect have been considered in the Quoted cost of the project since it is Engineering, Procurement and Construction (EPC) Contract. I / We hereby confirm that no extra/additional cost shall be claimed on above aspects

Yours faithfully,

Date: (Signature, name and designation of the Authorized signatory)

Place: **Name and seal of Bidder**

FORM-F:FORMAT FOR NO DEVIATION CERTIFICATE

[To be submitted on Bidder's Letter Head]

To,
The Regional Project Director (Western Region)
WAPCOS Limited
515, 5th Floor, Shree UGATI Corporate Park
Opp. Pratik Mall, Koba-Gandhinagar Road,
Kudasan, Dist: Gandhinagar, Gujarat-382421

Subject: No Deviation Certificate for ------ (name of Work /Project)

Dear Sir,

With reference to above this is to confirm that as per Tender conditions we have visited site before submission of our Offer and noted the job content and site condition etc. We also confirm that we have not changed/modified the above tender document and in case of observance of the same at any stage it shall be treated as null and void.

We hereby also confirm that we have not taken any deviation from Tender Clause together with other reference as enumerated in the above referred Notice Inviting Tender and we hereby convey our unconditional acceptance to all terms & conditions as stipulated in the Tender Document.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null and void.

Thanking you,

Yours faithfully,

Date:

(Signature, name and designation of the Authorized signatory)

Place:

Name and seal of Bidder

FORM-G: FORMAT FOR INTEGRITY PACT

To,
The Regional Project Director (Western Region)
WAPCOS Limited
515, 5th Floor, Shree UGATI Corporate Park
Opp. Pratik Mall, Koba-Gandhinagar Road,
Kudasan, Dist: Gandhinagar, Gujarat-382421

Sub: Integrity Pact for ------ (Name of Work / Project)

Dear Sir,

I/We acknowledge that WAPCOS is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process. I/We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by WAPCOS. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, WAPCOS shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid is accordance with terms and conditions of the tender/bid.

Yours faithfully,

Date: (Signature, name and designation of the Authorized signatory)

Place: **Name and seal of Bidder**

FORM-H: PRELIMINARY AGREEMENT

(To be executed on stamp per Rs.200/-)

Preliminary Agreement entered into on this …… day of…… Two thousand and …….. Between ……<Tender Inviting Authority> for and on behalf of WAPCOS LIMITED, of the one part and Sri…… (Here enter full name and address of the Bidder) hereinafter called the Bidder of the other part for the execution of the agreement as well as for the execution of the work …… WHEREAS the WAPCOS LIMITED invited tenders for the work of…… (here enter name of the work) by Notification No…… Dated ……in the ……

I/We undersigned hereby offer to construct the proposed work in strict accordance with the contract/bid document for the consideration to be calculated in terms of the priced schedule of quantities.

I/We undertake to complete the whole of the works as per the attached schedule from the date of issue of intimation by you that our tender has been accepted and upon being permitted to enter site. I/We further undertake that on failure, subject to the conditions of the contract relating to extension of time, I/We shall pay agreed `Liquidated Damages' for the period during which the work shall remain incomplete.

I/We hereby deposit with you as Earnest money Rs. _____ /- (Rupees _____) [carrying no interest] as mentioned in Tender Document in favour of <tender inviting authority> and I/We agree that this sum shall be forfeited in the event of the Employer accepting my/our tender and I/We fail to take up the contract when called upon to do so as per the bid document. I/We further agree for the applicable deduction from the `Interim Payment/RA Bill' towards the „Performance Security Deposit', which will be returned as per the relevant clauses in the agreement.

I/We will furnish the Performance Guarantee Bond as per the approved format, if our bid is accepted. Bid Security deposit shall be treated as security for the proper fulfillment of the same and shall execute an agreement for the work in the prescribed form. If I/We fails to do this or maintain a specified rate of progress (as specified in the Milestone details of contract data in the bid document), the performance guarantee (both treasury fixed deposit and irrevocable bank Guarantee) and Performance Security Deposit if any deducted from the RA Bills shall be forfeited to Government and fresh tenders shall be called for or the matter otherwise disposed off. If as a result of such measures due to the default of the Bidder to pay the requisite deposit, sign contract or take possession of the work any loss to Government due to the same will be

recovered from me/us as arrears of revenue, but should it be a saving to Government. I/We shall have no claim

Whatever to the difference. Recoveries on this or any other account will be made from the sum that may be due to us on this or any or other subsisting contracts or under the Revenue Recovery act or otherwise the Government may decide.

I/We further agrees that, in the case of becoming the lowest bidder in this tender and in the event of failure on part of me/us to produce any of the original documents, or submit the performance guarantee, or enter into agreement with the first part within the specified time limit, the first part may take appropriate action as provided in the bid document. In such a situation, if the second lowest bidder gets awarded with the work at his quoted rate, I shall agree to pay to the first part compensation towards the loss on account of award of work at a higher amount. Recoveries on this or any other account will be made from the sum that may be due to us on this or any or other subsisting contracts or under the Revenue Recovery act or otherwise the Government may decide.

NOW THEREFOR IN THE PRESENCE OF WITNESS it is mutually agreed as follows.

1) The terms and conditions for the said contract having been stipulated in the said tender document and forms to which the I/We have agreed and a copy of which is here to be appended which forms the part of this agreement, it is agreed that the terms and conditions stipulated therein shall bind the parties to this agreement except to the extent to which they are abrogated or altered by express terms and conditions herein agreed to and in which respect the express provisions herein shall supersede those of said tender form.

2) The I/We hereby agreed and undertake to perform and fulfill all the operations and obligations connected with the execution of the said contract work .... (hereinafter the name of the work) if awarded in favour of the me/us.)

3) If the Bidder does not come forward and to execute the original agreement after the said work is awarded and selection notice issued in his favour or commits breach of any of the conditions of the contract as stipulated in clause of the notice inviting tenders as quoted above, within the period stipulated then the Government may rearrange the work otherwise or get it done departmentally at the risk and the cost of the Bidder and the loss so sustained by the WAPCOS LIMITED can be realized from the Bidder under the Revenue recovery Act as if arrears of land revenue as assessed quantified and fixed by an adjudicating authority consisting of the Secretary Public works, Chief Engineer (Admn) or any other officer or officers authorized by Government in this behalf, taking into consideration the prevailing P.W.D rates and after giving due notice to the Bidder. The decision taken by such authority officer or officers shall be final and conclusive and shall be binding on the Bidder.

4) The Bidder further agrees that any amount found due to the Government under or by virtue of this agreement shall be recoverable from the Bidder from his EMD and his properties movable and immovable as arrears of Land Revenue under the provision of the Revenue Recovery Act for the time being in force or in any other manner as the Government may deem fit in this regard.

5) The Bidder further assures that it is clearly understood that the settlement of claims either by part bills or by final bills will be made only according to the availability of budget provision and allotment of funds of the work under the respective heads of account in which the work is sanctioned and arranged and also subject to the seniority of such bills. No claims for interest or for damages whatsoever shall be made for the related settlement of claims of bills.

IN WITNESS THERE OF SRI…… (here enter the name of the officers of the Department) for on behalf of the WAPCOS LIMITED and ……. the Bidder have set their hand on the day and year first above written Signed by Sri……

In the presence of witnesses:

FORM-I: LIST OF EQIPMENTS

S.No	Equipment List	Own/Lease/Hire

WAPCOS

(A Government of India Undertaking)

Selection of contractor for Repair / Renovation works of Toilet blocks in Boys hostel at Gujarat National Law University Campus

VOLUME II- SCOPE OF WORK, TECHNICAL SPECIFICATION

WAPCOS LIMITED

515, 5th Floor, Shree UGATI Corporate Park Opp. Pratik Mall, Koba-Gandhinagar Road, Kudasan, Dist: Gandhinagar, Gujarat-382421Tele: 079-23600292Tele fax: 079-23600352 Email: gandhinagar@wapcos.co.in

SECTION-VII : SCOPE OF WORK (VOLUME- II)

The Scope of work of project for Contractor includes"construction of various infrastructure works under Gujarat National Law University.

1.0 NOC'S / APPROVALS/ CLEARANCES FROM LOCAL BODIES/ AUTHORITIES

The Contractor will take necessary Statuary Approval/ NoCs/ Clearance from all concern Local Authorities / Departments, if any, required before start of the work / during the work / after execution of work & before handing over.

The contractor shall mobilize the resources at site after getting approval / NoCs/ Clearance from all concern Local Authorities / Departments if any, essential before start of the construction and shall not make any claim due to any delay in approval.

Contractor will follow the all rules, regulations and terms & conditions of Green building norm during the execution of the project work.

2.0 CIVIL WORK DESIGN AND DRAWINGS OF THE PROJECT / WORKS

The Scope of work, shall include execution of work as per the standard technical Specification & Description of items in Bill of Quantities mentioned in tender document. The scope of work is not limited to these Specification & Description of items mentioned in tender document. The Contractor will consider all other necessary Specification and Items of works, while quoting the cost, which are essential to complete the work in all respect.

The modifications/ improvements may be made by the WAPCOS as per the requirement of Client during execution of work.

The detailed Civil Structural Design & Drawings for the Works / Project shall be prepared by the Contractor. The Contractor shall submit the detailed structural drawings considering all design loads as per the Indian Standard Codes at his own cost to WAPCOS. The Structural Design & Drawings of each and every aspect of the project shall be got approved from WAPCOS.

The contractor shall not be absolved of their responsibility of structural stability and correctness of structural design. The contractor shall bear all the losses if arises out of the failure of any part of the project.

3.0 SCOPE OF CIVIL WORKS OF THE PROJECT AND ALLIED WORKS of "Various infrastructure Construction works in Gujarat National Law University Campus", includes

- Civil Works
- Electrical and Plumbing works

NOTE:

- The Construction works area comes under GNLU

The Contractor must aware about location of the proposed works, surrounding local condition where works are to be constructed, Encroachment by local people and its consequence which may affect the progress of works. Accordingly, Contractor shall submit BID considering all these aspects and shall Quote the rates. Contractor shall not raise any extra/additional claim on these aspects.

- The contractor is required to deploy the resources at site and start the construction. No claim shall be entertained for idle labour, idle machinery, idle technical / non-technical staff, idle T&P and if any hindrance due to any reason.
- If any dispute/ hindrance may arise during construction, the contractor is not liable for any financial claim or damages due to such circumstances.
- The bidder shall be responsible right through the entire duration of the Project for execution of all works till commissioning and handing over of project complete with all respects and shall remove all defects, if any, developed during Defects Liability Period (DLP).
- No works, for which rates are not specifically mentioned in the priced schedule or quantities, shall be taken up without written permission of WAPCOS Limited. Rates of items not mentioned in the priced Schedule of Quantities shall be fixed by WAPCOS as provided in the corresponding clauses of the tender document.
- The work shall be executed as per the details in Schedule of Quantities and direction of Engineer-in Charge and shall be completed in all respect with full satisfaction of Engineer- in-Charge as per the Government guidelines, Indian standard codes & Manuals. The Bidder may assess the quantum of work before filling of tender.
- Contractor will also submit report on completed work along with drawings of completed (As-Built Drawings) work and including photographs of works.
- Contractor will take necessary approvals/clearance from the concerned departments before the start of work.
- The Contractor will submit the sample and test reports of prefab panel, paints, steel, cement, coarse sand etc. to the Engineer In-Charge for approval before starting the work.
- Any material used without prior approval shall be replaced by the Contractor immediately at his own cost. No payment in this regard shall be entertained.
- The contractor shall make his own arrangements for obtaining electric connection and water Connection/arrangement (if required).
- The Contractor shall dispose off all the dismantled materials, debris, garbage, waste outside of the campus of the works at his own cost after prior approval from Engineer in Charge and provide clear and clean site at the time of handing over the works.
- Contractor is advised to visit the site to understand the Scope of Work clearly before quoting the rates for the works.

4.0 ACCEPTABLE MAKES OF MATERIAL

Acceptable makes of materials to be used in the work are enclosed. In case of non- availability of these makes, after the approval of WAPCOS, the Contractor can use the alternative makes only BIS marked materials. Non BIS marked materials may be permitted by the WAPCOS only when BIS marked materials are not manufactured.

S.NO.	NAME OF ITEM	MAKE APPROVED
1	ORDINARY PORTLAND CEMENT GRADE 43/53	BIRLA, JK, ACC, ULTRATECH, JAYPEE, AMBUJA,
2	WHITE CEMENT	JK, BIRLA, ACC, JAYPEE, AMBUJA
3	REINFORCEMENT STEEL	TATA , SAIL, RINL, JINDAL, JSW STEEL, SRMB
4	PAINT/POLISH/ PRIMER/ WATER PROOFING PAINT	BERGER, ASIAN, DULUX, BRITISH PAINT
5	Prefab Panel and Accessories	Aerocon, Hindustan Pre fab and Equivalent
6	PVC PIPE for Weep Holes	PRINCE, SUPREME, FINOLEX
7	STRUCTURAL STEEL	TATA , SAIL, RINL, JINDAL, JSW STEEL, SRMB

For & on behalf of Tenderer

Approved Make list for Proposed Toilet renovation project

S.No.	MATERIAL	MAKES
1.	Ordinary Portland Cement	Ultratech, Ambuja ,Sanghi
2.	White Cement	Birla, J.K.
3.	Bricks	As per IS
4.	Coarse Aggregates (machine cut) 6mm to 40mm sizes (Hard black trap stone)	As per IS.
5.	Stone Rubbles & Gravels (Hard black trap stone)	As per IS.
6.	Shuttering plywood	Kitply, Anchor, Green, Pragati, Mayur.
7.	All type glazed, ceramic and vitrified tiles	RAK, Nitco, Somany, AGL
8.	Highlighter colored tiles	RAK, Nitco, Somany, AGL, Aristo ceramic, Arise ceramic,
9.	Non-metallic floor hardener	Ironite, BASF
10.	Construction chemicals, Plasticizers, Bonding agents, , SBR latex, micro concrete	BASF, Fosroc, SIkka, kerakoll
11.	Water proofing chemicals, Chemical Water proofing & Integral water proofing compound	Kerakoll, BASF
12.	Poly-sulphide sealant	Pidilite, Chawksey,
13.	P.U sealant	Sika, 3M
14.	White cement based putty	Asian, ICI, Birla, JK, Asian, ICI (Dulux), Nerolac, Neocon, Berger
15.	Acrylic putty	Dubond, Floratex, Asian, ICI (Dulux), Nerolac, Neocon, Berger
16.	Paint and primer	Asian, ICI (Dulux), Nerolac, Neocon, Berger
17.	Lacquer /Melamine /PU polish	MRF, Asian, ICI, Taralac, ICA, Esdee
18.	Door Window Hardware,	Kich, Dorma, EPPW ,Palladium, Magnum
19.	Carpentry work adhesives	Fevicol, Blue coat, Araldite.
20.	Tile adhesives, grouting material and SBR	Dubond, Laticrete, Kerakoll, Samrock, Perma, Hibond, Sika, fosroc
21.	Aluminum work	Hindalco, Jindal, Banco, Nalco, Balco, Geeta
22.	Aluminum Window locks , handle , friction stays	Kich, Enox, Inox, Pulse, Ebco, Geeta, Alualpha, Securistyle, Giessee, Roto, Savio, Frikstay, JP, Boun
23.	EPDM or silicone Gasket of infill panel for Aluminum	Amee rubber, gold seal, Osaka rubber, Maharashtra polymer, Maharashtra tyre &

S.No.	MATERIAL	MAKES
		rubber industries.
24.	Glass	AIS, Saint gobain, guardian glass, Sejal glass, Gold plus Glass
25.	Anchor Fasteners	Axel, Hilti, Fischer, Kundan, Mungo, Corroshield, Buildex, Power, Laxmi
26.	Metal suspension system	Ashirvad, Astral, HILTI, Hi-Tech Supports & Hangers, Mascots enterprises, Saketh Exim, Shaivi enterprise
27.	Sanitary ware, CP fittings and toilet accessories	RAK, Jaquar, Hindware, UFC Jaquel
28.	Seat covers (Heavy Duty)	RAK, Jaquar, Hindware, UFC Jaquel
29.	UPVC & CPVC pipes and fittings	Astral, Supreme, Ashirvad, finolex, prince
30.	Valves	Zoloto, Honeywell, UFC JAQUEL
31.	UPVC AND CPVC Pipe fixing supports	Astral, Supreme, Ashirvad, Prince
32.	MS work	Tata,Jindal, Essar, Asian
33.	LED light	Philips, Osram, Syska, Havells, Wipro, Crompton, Futura, Corvi, Klite, Bajaj, Usha shriram
34.	Copper wire	Anchor, RR kabel, Finolex, Polycab, Havells, Syska, Cable Corporation of India,
35.	Switches, sockets and modular accessories	MK, Legrand, GM modular, Anchor, Havells, Schneider Electric, Wipro, L&T,
36.	PVC pipe and electrical accessories	Vraj, Pricision, Nihar, Vinay, Polycab, BLP, POWER FLOW INDIA I CROWN PLAST, 9 - NINE / ADITYA MAXCEL PLAST, PRESTO PLAST, Maruti, Shrinath
37.	Inline exhaust fan	Wadbros, Mittal blowers, Rotech, Techflow, Ruskin Titus, Green heck, Caryaire, Fanair, Amaryllis

SECTION– VIII: TECHNICAL SPECIFICATION (VOLUME- II)

1. The Work will be executed strictly in accordance with the CPWD/ R&B/GWSSB specification corrected up to date at the time of tenders, unless specified to contrary. The specifications to be generally followed will be the following specifications and codes.

a) CPWD specification

b) R&B/ GWSSBdepartment Specification

c) BIS specification

d) National building code

e) Particular specification as applicable.

2. Measurement of work will be done as per CPWD specification.

3. The Contractor shall not be entitled to any payments on account of work done till he signs the agreement and the same is accepted by the competent authority.

4. Actual quantities of completed and accepted work shall only be paid.

5. No claim shall be entertained on account of increase in price of material and wages of labour due to any cause what so ever.

6. The Engineer-In-Charge reserves the right to take away any item of work or any part thereof at any time during the currency of work and re-allot to any other agency with due notice to the contractor without liability of any kind or payment of any compensation.

7. The contractor will be responsible for any and all losses of material damages done to unfinished works as result of floods and any other act of God. WAPCOS will not be responsible for any compensation as a result of such damages or loss to the contractor and the contractor shall be liable to set right such damages at his own cost the satisfaction of the Engineer-In-Charge.

8. Nothing extra will be paid to the contractor for any lead or lift unless otherwise specified for any material required directly or indirectly under the contract.

9. Nothing extra will be paid to the contractor for diverting water in the channels or streams if it becomes necessary for the execution and completion of the work.

10. Amount of the work can be increased or decreased due to any item omitted and substituted in accordance with the requirement of the Board. And no claim on this account shall be entertained.

11. The Contractor shall be responsible for providing to the entire satisfaction of the Engineer-in-Charge at his own expenses for the following amenities for all the labour employed by him:-

ii) Suitable temporary hutting accommodation.

iii) Trench latrines, bathing enclosures, platforms separately for men and women and their regular cleanliness.

iv) Clean drinking water.

In event of his failure, the cost thereof shall be recovered from the contractor. Any dispute regarding above points shall be settled by the Engineer-In--Charge and his decision shall be final.

12. For safe custody of materials and watch and ward thereof and proper double lock arrangement, the contractor shall be bound to follow the instruction of the Engineer-In-Charge.

13. The size of reinforced cement concrete and other structural member shall be measured and paid as per size provided in the structural drawings.

14. Error or omission, if any in the nomenclature rate or unit of the items or work shall be corrected as per CPWD schedule of Rates 2014.

Materials and testing of materials for quality:

15. The materials shall be subject to inspection and approval of the Engineer-In-Charge. The contractor shall be required to get necessary tests carried out of materials / work from an approved laboratory approved by the Board.

16. Any material will get tested at the cost of the contractor. The contractor will set up a site laboratory for testing of Coarse Aggregate, Fine Aggregate & Compressive Strength of Concrete, etc.

17. Use of fly Ash

The contractor is required to use fly ash clay bricks conforming to IS: 3812, if the same are available, in view of the Fly Ash Notification issued by the GOI from time to time.

18. The following are the respective CPWD sub sections/clauses relating to the relevant items of works under this package. Where there is discrepancy between CPWD specifications and BIS codes the former will prevail.

Sl No	**Item description**	**Specification reference**	**IS Ref:**
1	Earth work excavation, felling trees etc	CPWD specifications 2.0 to 2.27	**1**. IS: 783 -1985 Code of practice for laying of concrete pipes. **2**. IS: 1200-1992 Method of Measurement of Building Works (Part I). **3**. IS: 3764-1992 Safety code for excavation work. **4**. IS: 3385 Code of practice for measurement

Sl No	**Item description**	**Specification reference**	**IS Ref:**
			of Civil Engineering Works. **5**. IS: 2720-1983 Method of test of soils (All parts) **6**. IS: 1498-1980 Classification and identification of soils for General Engineering purposes **7**. IS: 2809 Glossary of terms and symbols relating to Soil Engineering **8**. IS: 4081-1986 Safety code for blasting and related drilling operations **9**. IS: 4988 Glossary of terms and classifications of earth moving machinery (All Parts)
2	PCC	CPWD specifications sub head 4.0	1.IS 456 2. Ordinary Portland cement, 33 Grade, conforming to IS: 269-1989. 3. Rapid Hardening Portland Cement, conforming to IS: 8041-1990. 4. Ordinary Portland cement, 43 Grade, conforming to IS: 8112-1989. 5. Ordinary Portland cement, 53 Grade, conforming to IS: 12269-1987. 6. Sulphate Resistant Portland cement, conforming to IS: 12330-1988.
3	RCC works	CPWD specifications sub head 5.0	**1**.IS: 269-1989 Specification for Ordinary, Rapid-Hardening and Low Heat Portland Cement. **2**.IS: 455-1989 Specification for Portland Blast Furnace Slag Cement. **3**.IS: 1489-1991 Specification for Portland- Pozzolana Cement. **4**.IS: 4031-1996 Methods of Physical Tests for Hydraulic Cement. **5**.IS: 650-1991 Specification for Standard Sand for Testing of Cement. **6**.IS: 383 Specification for Coarse and Fine Aggregates from Natural Sources for Concrete. **7**.IS: 2386-1983 Methods of Test for Aggregates for Concrete. (Part I to VIII) **8**.IS: 516-1959 Method of Test for Strength of Concrete.

Sl No	**Item description**	**Specification reference**	**IS Ref:**
			9.IS: 1199-1959 Method of Sampling and Analysis of Concrete. **10**.IS: 3025-1987 Method of Sampling and Test (Physical and Chemical) Water Used in Industry. **11**.IS: 432-1982 Specification for Mild Steel and Medium Tensile Steel Bars and Hard Drawn Steel Wire for Concrete Reinforcement. (Part I & II) **12**.IS: 1139-1966 Specification for Hot Rolled Mild Steel and Medium Tensile Steel Deformed Bar for Concrete Reinforcement. **13**.IS: 1566-1982 Specification for Plain Hard Drawn Steel Wire Fabric for Concrete(PartI) Reinforcement. **14**.IS: 1785 Specification for Plain Hard Drawn Steel Wire for Prestressed Concrete. **15**.IS: 1786-1985 Specification for Cold Twisted Steel Bars for Concrete Reinforcement. **16**.IS: 2090 Specification for High Tensile Steel Bars Used in Prestressed Concrete. **17**.IS: 4990-2001 Specification for Plywood for Concrete Shuttering Work. **18**.IS: 2645-1975 Specification for Integral Cement Water-Proofing Compounds. BS: 4461 Cold Worked Steel Bars for The Reinforcement of Concrete. **19**.IS: 4098 Lime Pozzolana Mixture (1st Revision) (Amendment 2) IS: 3201 Criteria for Design and Construction of Precast Concrete Trusses. **20**.IS: 2204 Code of Practice for Construction of Reinforced Concrete Shell Roof. **21**.IS: 2210 Criteria for The Design of R.C. Shell Structures and Folded Plates. **22**.IS: 2751-1979 Code of Practice for Welding of Mild Steel Bars Used for Reinforced Concrete Construction. **23**.IS: 2502-1963 Code of Practice for Bending and Fixing

Sl No	**Item description**	**Specification reference**	**IS Ref:**
			Vibrators for Consolidating Concrete. **24**.IS: 3558-1983 Code of Practice for Use of Immersion Vibrators for Consolidating Concrete. **25**.IS: 3414-1968 Code of Practice for Design and Installation of Joints in Buildings. **26**.IS: 4014-1967 Code of Practice for Steel Tubular Scaffolding. (Part I & II) **27**.IS: 2571-1970 Code of Practice for Laying In-Situ Cement Concrete Flooring. **28**.IS: 2250 Code of Practice for Preparation and Use of Masonry Mortar (1st Revision) **29.9.2.5 Construction Safety** IS: 3696-1987 Safety Code for Scaffolds and Ladders. (Part I& II) **30**.IS: 3385 Code of Practice for Measurement of Civil Engineering Works. **31.9.2.6 Measurement** IS: 1200 Method of Measurement of Building Works. **32**.IS: 3385 Code of Practice for Measurement of Civil Engineering Works.
4	Masonry Brick work/laterite stones	CPWD specifications sub head 7.0	**1.IS 3620(Laterite),** **2**.IS: 1077-1992 Specifications for Common Burnt Clay Building Bricks 1. IS: 1200 Measurements for Building Works 2. IS: 1725 Specifications for Solid Cement Blocks used in General Building Construction 3. IS: 1905-1987 4. Code of Practice for Structural Safety of Buildings: Masonry Walls. 5. IS: 2116-1980 6. Sand for Masonry Mortars 7. IS: 2180 Specification for Heavy Duty Burnt Clay Building Bricks 8. IS: 2185-1979 9. Specification for Concrete Masonry Units: Hollow and Solid Concrete Blocks 10. IS: 2212-1991 11. Code of Practice for Brick Work 12. IS: 2222 Specification for Burnt Clay

Sl No	**Item description**	**Specification reference**	**IS Ref:**
			Perforated Building Bricks 13. IS: 2691-1988 14. Specification for Burnt Clay Facing Bricks 15. IS: 3414-1968 16. Code of Practice for Design and Installation of Joints in Buildings 17. IS: 3466 Specification for Masonry Cement 18. IS: 3952 Specification for Burnt Clay Hollow Blocks for Walls and Partitions 19. IS:1124 water absorption and specific gravity of laterite stones 20. IS:1121 compressive strength of laterite stones 21. IS 1197(Pt.I) (Rubble)
5	Joinery works	CPWD specifications sub head 9.0	**1**.IS: 205 Specifications for non-ferrous metal butt hinges **2**.IS: 287-1993 Recommendation for maximum permissible moisture content of timber used for different purposes. **3**.IS: 303 Specification for plywood for general purpose **4.IS: 362 Specification for parliament hinges** **5**.IS: 419-1967 Specification for putty for the use on window frames **6**.IS: 883 Code of practice for design of structural timber in building. **7**.IS: 1003-1991 Specification for Timber panelled and glazed shutters Part II - Window and ventilator shutters **8**.IS: 1200-1992 Method of measurement of building and Civil Engineering Works - Wood Work and Joinery **9.IS: 1341 Specification for steel butt hinges** **10.**IS: 1658 Specification for Fibre Hard Boards **11**.IS: 1761 Specification for transparent sheet glass for glazing and framing purposes. **12**.IS: 3087 Specification for wood particle boards (medium density for structural timber building) **13**.IS: 1956 Glossary of terms relating to iron and steel **14**.IS: 814-1991(Part I)

Sl No	**Item description**	**Specification reference**	**IS Ref:**
			Specifications for covered electrodes for metal are welding of structural steel. **15**.IS: 814-1991(Part II) 1.For welding products other than sheets, Specifications for covered electrodes for metal is welding of structural steel. 2.For welding sheets **16**.IS: 815 Classification and coding of covered electrodes for metal are welding and cutting operation. **17**.IS: 1948-1961 Aluminium doors, windows & ventilators. **18**.IS: 6227 Code of Practice for use of metal are welding in tubular structure **19**.IS: 6248-1979 Specifications for metal rolling shutters and rolling grill **20**.IS: 1081-1960 Code of Practice for fixing and glazing of metal (steel and aluminium) doors, windows and ventilators. **21**.IS: 2062-1999 Weldable Structural Steel **22**.IS: 1361-1978 Specifications for steel windows for Industrial Buildings **23**.IS: 1200-1993(Part VIII) Measurements for steel work and iron work **24**.IS: 1038-1983 Specifications for steel doors, windows, and ventilators. **25**.IS: 226-1975 Specifications for structural steel (Standard quality) **26**.IS: 823 Code of procedure for manual metal arc welding of metal steel **27**.IS: 102-1962 Ready mixed paint, brushing, red lead non-sitting, and priming. **28**.IS: 1363-1992 For black hexagon bolts, nut and lock nuts (dia. 6 to 39mm) and black hexagon screws (Dia. 6 to 24mm) **29.IS: 813 Scheme of symbols for welding.**

Sl No	**Item description**	**Specification reference**	**IS Ref:**
6	Flooring	CPWD specifications sub head 11.0	**1**.IS: 1130-1969 Specification for Marble (Blocks, Slabs and Tiles) (Reaffirmed 1993) **2**.IS: 1141-1973(1141-1993) * Code of Practice - Seasoning of Timber (2nd Revision) **3**.IS: 1197-1970 Code of Practice for Laying Rubber Floors (1st Revision (Reaffirmed 1990) **4**.IS: 1198-1982 Code of Practice for Laying, Fixing Ad Maintenance of Linoleum Floor (1st Revision) (Reaffirmed 1990) **5.IS: 1200 (PartXI) 1977** Method of Measurement of Building and Civil Engineering Work (Part XI) Paving, Floor Finishes, Dado andSkirting) (3rdRevision) (Amendment1) (Reaffirmed 1992) **6**.IS: 1237-1980 Specification for Cement Concrete Flooring Tiles (1st Revision) (Reaffirmed1990) **7**.IS: 1322-1982(1322-1993) Specification for Bitumen Felts for Water Proofing and Damp-Proofing (4thRevision) **8**.IS: 1443-1972 Code or Practice for Laying and Finishing of Cement Concrete Flooring Tiles (1st Revision) (Reaffirmed 1991) **9**.IS:1489(Part-1) 1991 Specification for Portland Pozzolana Cement (Part - 1) Fly ash Based (3rd Revision) **10**.IS: 1489- (PartII) 1991 Specification for Portland Pozzolana Cement (Part II) Calcined Clay Based (3rdRevision) (Amendment 1) **11**.IS: 1580-1991 Specification for Bituminous Compounds of Water Proofing and Caulking Purpose (3rd Revision) **12.IS: 1195 Bitumen Mastic for Flooring** **13**.IS: 3384-1990 Bitumen Primer for Use in Waterproofing and Damp Proofing **14.IS: 4832(Part - 1)** Acid Resistant Mortars - Silicate Type **15.IS: 4832(Part - 2)** Acid Resistant Mortars - Resin Type **16**.IS: 4457 Ceramic Unglazed Vitreous Acid Resisting Tiles

Sl No	**Item description**	**Specification reference**	**IS Ref:**
7	Painting and Finishing	CPWD specifications sub head 13.0	**1**.IS: 16-1991(Part: I) Shellac: Part: I-Hand Made Shellac (3rd Revision) **2**.IS: 16-1991(Part: II) Shellac:Part: II-Machine Made Shellac (3rd Revision) **3**.IS: 75-1973 Linseed Oil, Raw and Refined (Reaffirmed 1990) (2nd Revision) **4.**IS: 77-1976 Ready Mixed Paint, Brushing, Red Lead, Non setting, priming (Reaffirmed 1991)(Revised) **5**.IS: 102-1962 Specification for Ready Mixed Paint, Brushing, Zinc Chrome, priming (Reaffirmed 1993) (2nd Revision) **6**.IS: 104-1979 Ready Mixed Paint, brushing, priming Plaster to Indian Standard Colour No. 361, 631 White and off White (Reaffirmed 1993) (1st Revision) **7**.IS: 109-1968 Ready Mixed Paint, Brushing, priming Plaster to Indian Standard Colour No. 361, 631 White and off White (Reaffirmed 1993) (1st Revision) **8**.IS: 117-1964 Ready Mixed Paint, Brushing, Finishing Exterior, Semigloss for General Purposes to Indian Standards Colours (Reaffirmed 1988) (Revised) **9**.IS: 133-1993 Enamel, Interior (a) Under Coating (b) Finishing (3rd Revision) **10**.IS: 137-1965 Ready Mixed Paint, Brushing, Matt or Egg Shell Flat, Finishing Interior to Indian Standard Colour as required (Revised 1993) **11**.IS: 158-1981 Ready Mixed Paint, Brushing, Bituminous Black, Lead Free, Acid, Alkali and Heat Resisting (Reaffirmed 1988) (3rd Revision) **12**.IS: 217-1988 Specification for Cut Back Bitumen (2nd Revision) **13**.IS: 218-1983 Specification for Creosote and Anthracene Oil for Use as Wood Preservatives (Reaffirmed 1990) (2nd Revision) **14**.IS: 290-1961 Coal Tar Black Paint (Reaffirmed 1991) (1st Revision) **15**.IS: 337-1975 Varnish, Finishing Interior (Reaffirmed 1991) (1st Revision) **16**.IS: 341-1973 Black Japan, Types ‘A’, ‘B’ & ‘C’ (Reaffirmed 1991) (1st Revision)

Sl No	**Item description**	**Specification reference**	**IS Ref:**
			17.IS: 345-1952 Wood Filter, Transparent - Liquid (withdrawn) **18**.IS: 347-1975 Varnish, Shellac for General Purposes (Reaffirmed 1991) (1st Revision) 19.IS: 348-1968 French Polish (Reaffirmed 1991) (1st Revision) **20**.IS: 419-1967 Putty for Use On Window Frames (Reaffirmed 1992) (1st Revision) **21**.IS: 427-1965 Distemper, Dry Colour as Required (Reaffirmed 1993) (Revised) **22**.IS: 428-2000 Distemper, Oil Emulsion, Colour as Required (Reaffirmed 1993) (1stRevision) **23**.IS: 524-1983 Varnish, Finishing, Exterior, Synthetic Air Drying (Reaffirmed 1990) (2ndEdition) **24**.IS: 533-1973 Gum Spirit of Turpentine (Oil of Turpentine) (Reaffirmed 1990) (1st Revision) **25**.IS: 712-1984 Specification for Building Limes (Reaffirmed 1991) (3rd Revision) **26**.IS: 1200-1976 (Part: XII)Method of Measurements of Building and Civil Engineering Works: Part: XII-Plastering and Pointing (Reaffirmed 1992) (3rd Revision) **27**.IS:1200-1987 Method of Measurements of Building and Civil Engineering Works:
8	Cement		**1**.43 Grade OPC – IS8112 **2**.53 Grade OPC-IS 1269 **3**.PPC-IS 1489 **4**.Rapid Harding Portland cement – IS 4032 **5.Port land slag cement IS 455** **6**.Sulphate RC (SRC) –IS 12330
9	Fine aggregates	CPWD specifications sub head 5.0	IS 383, 2386
10	Coarse aggregates	CPWD specifications sub head 5.0	IS 383, 2386
11	Mortars	CPWD specifications sub head 3.0	IS 3025,4031, 269,455,1269

Sl No	**Item description**	**Specification reference**	**IS Ref:**
12	Water supply and Sanitary works	CPWD specifications sub head 18 and 17	**Water supply** **1** IS 554 Pipe threads where pressure tight joints are required on the Threads-Dimensions, tolerances and designation. **2** IS 778 Specification for copper alloy gate, and check valves for water works purposes **3** IS 779 Water meters (domestic type) - Specification **4** IS 780 Specification for sluice valves for water works purposes (50 to 300 mm size) **5** IS 781 Specification for cast copper alloy screw down bib taps and stop valves for water services **6 IS 782 Specification for caulking lead** **7** IS 1239 (Part 1) Steel tubes tubular and other wrought steel fittings, Part 1- Steel tubes-Specification **8** IS 1239 (Part 2) Specification for mild steel tubes tubular and other wrought steel fittings, Part 2-Mild street tubular and other wrought steel pipe fittings **9** IS 1538 Cast iron fittings for pressure pipes for water, gas and sewage - Specification **10** IS 1703 Water fittings - copper alloy float valves (horizontal plunger type) -Specification **11** IS 2692 Ferrules for water services-Specification **12** IS 3950 Specification for surface boxes for sluice valves **13** IS 4736 Specification for Hot-dip Zinc Coatings on mild steel tubes **14** IS 5312 (Part 1) Swing type reflex (non return) valves for water works purposes. Part 1-Single door pattern **15** IS 5312 (Part 2) Swing type reflex (non return) valves for water works purposes. Part 2-Multi door pattern **16** IS 5382 Rubber sealing rings for gas mains, water mains and sewers **17** IS 9762 Specification for polyethylene floats (spherical) for float valves **18** IS 9763 Plastic Bib taps and stop valves (rising spindle) for cold water services specifications **19**.IS 15450 PE-AL-PE Pipes for hot and cold

Sl No	**Item description**	**Specification reference**	**IS Ref:**
			water supplies Specifications **20**. IS 15778 Chlorinated Polyvinyl Chloride (CPVC) pipes for potable hot and cold water distribution supplies-specifications. **21**. IS 15801 Polypropylene- Random Copolymer Pipes for hot and cold water supplies Specifications **Sanitary** **1**. IS 771 (Pt.1) Specification for glazed fire clay sanitary appliances: Part 1: General requirements. **2**. IS 771 (Pt.-2) Specification for glazed fire clay sanitary appliances: Part 2: Specific requirements of kitchen and laboratory sink. **3**. IS 772 Specific action for general requirements for enameled cast iron sanitary appliances. **4**. IS 774 Flushing cisterns for water closets and urinals (Other than plastic cistern)- Specifications. **5**. IS 1300 Phenolic moulding materials. - Specifications **6**. IS 1703 Water fittings- copper alloy float valves (horizontal plunger type) - Specification. **7**. IS 1795 Specification for pillar taps for water supply purposes. **8**. IS 2267 Polystyrene moulding and extrusion materials - Specifications **9**. IS 2326 Specification for Automatic Flushing Cisterns for Urinals (Other than plastic cisterns) **10**. IS 2548 (Part-1) Plastic seats and covers for water closets Part 1: Thermo set seats and covers Specifications **11**. IS 2548 (Part-2) Plastic seats and covers for water closets Part 2: Thermoplastic seatsand covers. - Specifications **12**. IS 2556 Vitreous sanitary appliances (vitreous china) Specifications **13**. IS 2556 (Part-1) Part-1: General requirements. **14**. IS 2556 (Part-2) Part-2: Specific requirements of wash-down water closets. **15**. IS 2556 (Part-3) Part-3: Specific squatting pans. **16**. IS 2556 (Part-4) Part-4: Specific requirements of wash basins.

Sl No	**Item description**	**Specification reference**	**IS Ref:**
			17. IS 2556 (Part-5) Part-5: Specific requirements of laboratory sinks. **18**. IS 2556 (Part-6) Part-6: Specific requirements of Urinals & Partition plates **19**. IS 2556 (Part-7) Part-7: Specific requirements of accessories for sanitary appliances **20**. IS 2556 (Part -14) Part-14: Specific requirements of integrated squatting pans. **21**. IS 2556 (Part -15) Part-15: Specific requirements of universal water closets. **22**. IS 2963 Specification for Copper alloy waste fittings for wash basins and sinks. **23**. IS 3389 Urea formaldehyde moulding materials. - Specifications **24**. IS 3989 Specification for centrifugally cast (spun) iron spigot and socket soil, waste and ventilating pipes fittings and accessories. **25**. IS 4827 Specification for electroplated coating of nickel and chromium on copper and copper alloys. **26**. IS 4984 Specification for high density polyethylene pipes for potable water supplies.

Technical specification for GNLU Washroom renovation

MAKE LIST	
Sanitary ware	jaquar/cera/simpolo
C P Fittings & Bathroom Access.	jaquar/cera
SS Grating	Chilly/ Nirali or Equivalent
Ball Valve	Sant/ Zoloto/ Leader
UPVC Pipes/ Fittings	Astral,Supreme, Ashirwad
CPVC Pipes/ Fittings	Astral, Supreme, Ashirwad
SWR Pipes/Fittings	Astral, Supreme, Ashirwad
Toilet Partition(solid compact laminate panel/ High Pressure laminate panel)	Greelam, supersill, cera style studio, Royale touche, Durian
Ordinary Portland Cement	Ultratech, Siddhi, Ambuja
Pozzolana Portland Cement	Ambuja ,Ultratech,Hathi.
White Cement	Birla, J.K.
Glazed tiles	AGL,Varmora ,SUNHEARRT
Ceramic tiles	AGL,Varmora ,SUNHEARRT
Vitrified tiles	AGL,Varmora ,SUNHEARRT
Water proofing chemical	Kerakoll ,BASF, Forsoc
Metal ceiling	Supersill,Ecotone,metalinium

Technical specification for GNLU Washroom renovation

Item No: 1

Providing laying and jointing in true line and level U.P.V.C. Pipe SCH-40 for internal use &SH- 80 (extrenal use for cold water including fittings & bends make ASHIRVAD/ PRINCE / SUPREME / ASTRAL / FINOLEX or equivalent as approved by Architect In Charge. Pipe shall be fixed on the wall with the help of clamp at every two metre C/C or shall be concelled as directed including necessary fittings etc. including jointing with one step upvc pipe solvent cement , testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials make ASTRAL upvc pressure pipe - or equivalent as approved and selection by architect.

15 mm dia
25mm dia.
32mm dia.
40mm dia
50mm dia
65mm dia
110mm dia
160mm dia

UNPLASTICISED POLYVINYL CHLORIDE PIPES AND FITTINGS

UPVC Pipes Pipes shall conform to Type A pipes of IS 13592. The internal and external surfaces of the pipes shall be smooth and clean and free from groovings and other defects. The end shall be clearly cut and shall be square with the axis of the pipe. The end may be chamfered on the plain sides. Slight shallow longitudinal grooves or irregularities in the wall

thickness shall be permissible provided the wall thickness remains within the permissible limit.

Color of Pipe

Surface color of the pipes shall be dark shade of grey or as r as specified.

Marking

Each pipe shall be clearly and indelibly marked with the following information at intervals not more than 3 meters.

(a) Manufacturer's name or trade mark.

(b) Nominal outside dia of pipe.

(c) Type 'A'

(d) Batch number.

Dimensions

Diameter and Wall Thickness:

Mean outside diameter, outside diameter at any point and wall thickness for type –A manufactured plain or with socket shall be as given in Table- 1 of IS 13592.

UPVC rain water pipes shall be of the dia, specified in the description of the item and shall be in nominal lengths of 2,3,4 or 6 metres either plain or with sliding/grooved socket unless shorter lengths are required at junctions with fittings. Tolerances on specified length shall be + 10 mm and – 0 mm.

Fixing and Jointing

Pipes shall be either fixed on face of wall or embedded in masonry as required in the description of the item.

Plain pipes shall be secured to the walls at all joints with PVC Pipes clips by means of 50 x 50 x 50 mm hard wood plugs, screwed with M.S. screws of required length i/c cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand). The clips shall be kept about 25 mm clear off finished face of wall, so as to facilitate cleaning of pipes. Pipes shall be fixed perfectly vertical or to the lines as directed. The pipes shall be fitted to fittings with seal ring conforming to IS 5382 allowing 10 mm gap for thermal expansion.

Installation in Wall/Concrete

The walls/concrete slots should allow for a stress free installation. Pipes and fittings to be inserted into the slots without a cement base have to be applied first with a thin coat of PVC solvent cement CPWD SPECIFICATIONS 2009 522 followed by sprinkling of dry sand (medium size). Allow it to dry. The process gives a sound base for cement fixation. This proce
ss is repeated while joining PVC material to CI/AC materials.

Fittings

Manufacturer and shall have a minimum wall thickness of 3.2 mm. The fittings shall be supplied with grooved socketted ends with square grooves and provided with Rubber Gasket conforming to IS 5382. The plain ends of the fittings should be chamfered. The fittings shall be joined with the help of Rubber lubricant. The details of fittings refer IS 13592.

Measurements

The fittings shall be measured by numbers. The pipes shall be measured net when fixed correct to a cm. excluding all fittings along its length.

Rate

The rate shall include the cost of all materials and labour involved in all the operations described above including jointing but excluding the supply and fixing of wall plugs and PVC clips which shall be paid for separately.

Note: These pipes shall be used only in shaft or unexposed location to avoid damage to these pipes due to willful act.
Specifications:

- Lead free material, non toxic, stornglight weight, leak proof joints, good insulator, chemical resistant, UV stabilized.
- Fits easily with or without needing couplers (Solvent Cement Joint)
- NSF approved Solvent cement joint is permanent, strong and trouble-free.
- Available in 3 mtr & 6 mtr length or can be customized
- Available size- SCH 40 -15(1/2") to 300 mm (12") diameters

Item No: 2

Providing ,Fixing, testing and commissioning of High density low noise **multi layer pipes having external layer PP, middle layer mineral reinforced PP , internal layer -PP one/two end socket** with special ring fittings of specified diameter with all necessary specials, bend , reducers, elbow, y & T connections , traps of same material with push fit socket with special ring etc. specifications, drawings, details as directed by Architect In Charge.**make ASTRAL - SILENCIO-6RFT DS or equivalent as approved and selection by architect.**
50mm dia
75mm dia
110mm dia
160mm dia

High density low noise multi layer SWR pipes :
High density low noise multi layer SWR Pipes, manufactured as per European standards. High density low noise multi layer SWR Pipes made from mineral reinforced Poly propylene this base material provides excellent mechanical & acoustic properties. High density low noise multi layer SWR are made with high molecular structure which enables absorption of air borne sound and structure borne sound energy does nor spread over pipe wall. manufacture of pipe should confirm European Standards for pipes, wherein the standards are prepared with the help of CEN/TC 155. The standardisation is then followed by the committees in both, India and Europe.

Layer constction and special socket jont:

- **External Layer – PP**: The tough protective shell of the pipe is sturdy and highly impact resistant
- **Middle Layer – Mineral Reinforced PP**: Mineral-reinforced plastic provides very high stability and establishes superior noise insulating effect
- **Internal Layer – PP**: Provides a superior flow performance with its smooth structure, with resistance against high water temperature
    - **Door Fittings**: Provides additional inner door cap along with threaded door cap to maintain flow without blockage

- **Push-Fit Socket with Special Ring**: The Push-Fit socket is fitted with German Technology ring that guarantees hydraulic tightness and free movement of the pipe caused by expansion/contraction
- **External Ribs**: Placed on the outer side of the
- right depth fitment with thermal expansion to prevent pipe bending
- **Swept Angle**: Designed with swept angle to have smooth flow & avoid blockage

Fittings

Fittings shall be of the same make as that of pipes, injection molded and shall conform to European Standards. The inner surface of the pipes and fittings shall be clean with cleanout solution and fittings shall have push fit socket with special ring the ring allows free movement during hydraulic tightness and thermal expansion. an application of the solvent cement joint as supplied by the contractor shall be done for outer surfaces of the pipe. The pipes and fittings shall be fixed to walls OR suspended by using proper clamps. The pipes shall be fixed or hanged perfectly vertical or in a line as directed. All soil pipes shall be carried up above the roof and shall have cowl on top.

Where pipes are laid along walls or floor , the SWR pipes are to be fixed 25mm away from the wall surface& suspended as per instructed by the architect or engineer. Anchor fasteners and clamps , hangers etc. to be used for this purpose.

The access door fittings shall be of proper design so as not to form any cavities in which filth may accumulate. Doors shall be provided with brass bolts.

Using branches shall make connections between main pipe and the branch pipes and bends invariably with access doors for cleaning.

Specifications:

- Self socket at one end
- Plain at another end
- Socket with rubber ring
- Available in 20 feet length or can be customized
- Available in 3 mtr S/S OR D/S to2,3,4,6 FT D/S length.

Nominal Outside Diameter (Nominal Size, in mm)	Mean Outside Diameter (mm)		Wall thickness (mm)
	Min	Max	Min
40	40	40.3	2.2
50	50	50.3	4.0
75	75	75.3	4.5
110	110	110.4	5.3
160	160	160.5	5.3

MATERIAL PROPERTIES

Property	Unit	Value
Density	G/Cm3	1.9
Elongation @Break	%	30
Tensile Strength	N/mm2	16.8
Modulas Of Elasticity	N/mm2	3800
Coefficient of linear expansion	mm/Mk	0.09
Fire resistance	DIN 4102,B2 EN 13501-1:D-s2 ,	d0
Life expectancy	more than 50 years	

Laying and Jointing

The pipes shall be laid and clamped to wooden plugs fixed above the surface of the wall. Alternatively plastic clamps of suitable designs shall be preferred. Provision shall be made for the effect of thermal movement by not gripping or disturbing the pipe at supports between the anchors for suspended pipes. The supports shall allow the repeated movements to take place without abrasion.

Jointing for pipes shall be made by means of solvent for horizontal lines and 'O' rubber ring for vertical line. Rubber ring sockets and T-shaped rubber ring joints are firm joints which will be 15 chamfered ends. The type of joint shall be used as per site conditions / direction of the consultant. Where pipes are to be used for rain water pipes, the pipe shall be finished with GI adopter for insertion in the RCC slab for a water proof joint complete as directed by consultant.

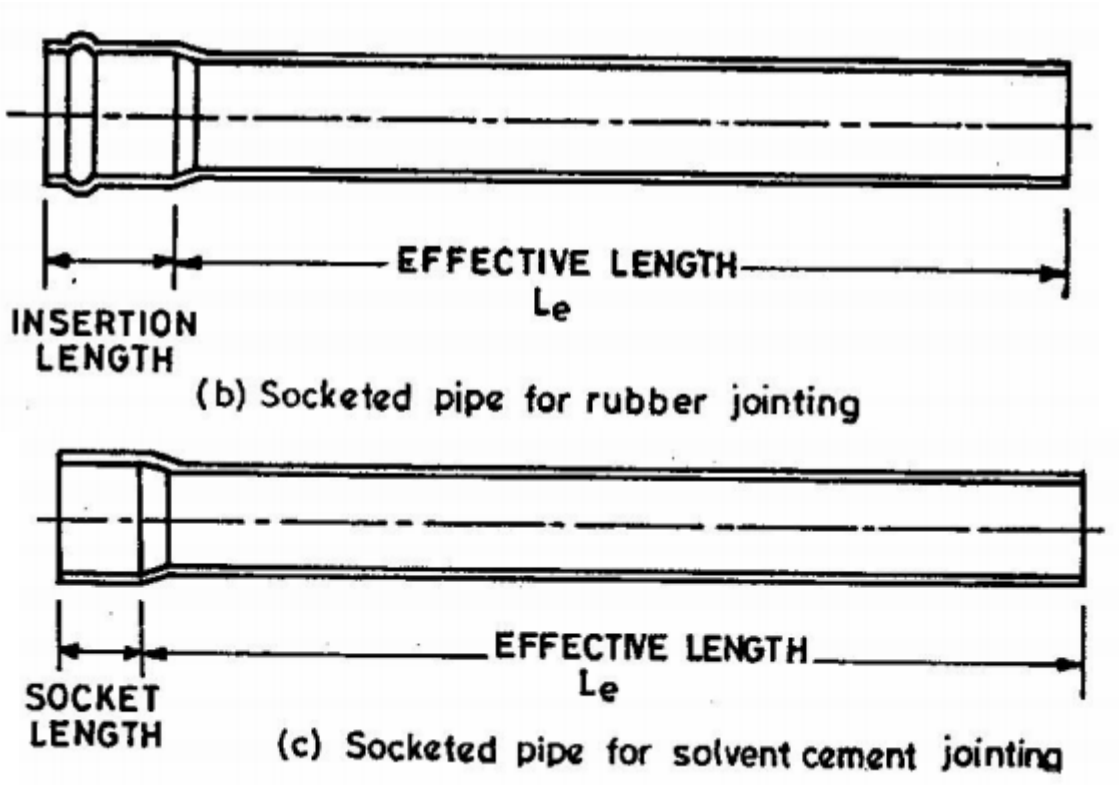
SUPPORT AND SPACING

All piping should be supported with an approved hanger at intervals sufficiently close to maintain correct pipe alignment and to prevent sagging or geode reversal. Pipe should also be supported at all branch ends and at all changes of direction. Support traps arms as close as possible to the trap. In keeping with good plumbing practices support and brace all closet bends and fasten closet flanges.

1. Concentrated load should be supported directly so as to eliminate high stress concentrations. Should this be impractical then the pipe must be supported immediately adjacent to the load.

2. In system where large fluctuations in temperature occur, allowances must be made for expansion and contraction of the piping system. Since changes in direction in the system are usually sufficient to allow for expansion and contraction hangers must be placed so as not to restrict this movement.

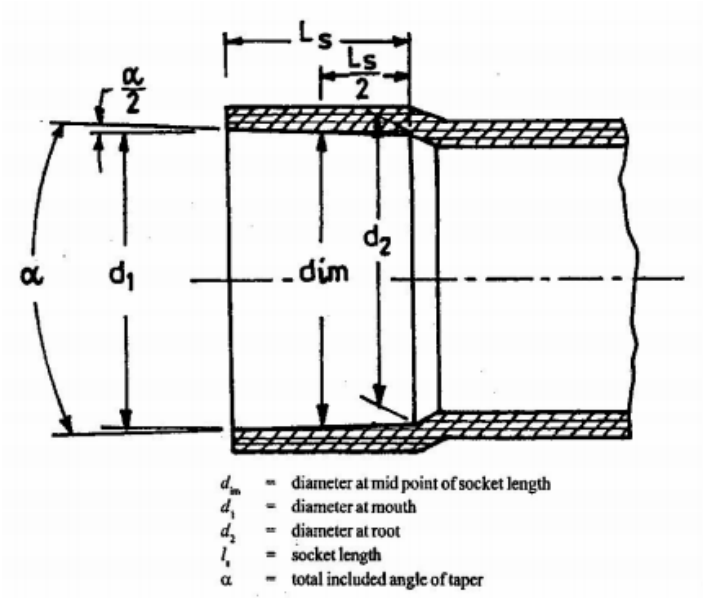
3. Hangers should provide as much bearing surface as possible. To prevent damage to the pipe, file smooth any sharp edges or burrs on the hungers or supports.



TESTING PRESSURE SYSTEM

1. Conduct pressure testing with water. DO NOT USE AIR OR OTHER GASES for pressure testing.
2. The piping system should be adequately anchored to limit movement. Water under pressure exerts thrust forces in piping systems. Thrust blocking should be provided at changes of direction, change in size and at dead ends.
3. Refer tables given for initial set & cure times before pressure testing.
4. The piping system should be slowly filled with water, taking care to prevent surge and air entrapment. The flow velocity should not exceed 1 feet per second.
5. All trapped air must be slowly released. Vents must be provided at all high points of the piping system. All valves and air relief mechanisms should be opened so that the air can be vented while the system is extremely dangerous and it must be slowly and completely vented prior to testing.
6. The piping system can be pressurized to 125% of its designed working pressure. However care must be taken to ensure the pressure does not exceed the working pressure of the lowest rated component in the system (valves, unions, flanges, threaded parts etc.)

7. The pressure test should not exceed one hour. Any leaking joints or pipe must be cut out and replaced and the line recharged and retested using the same procedure.



. Pipe-Repairs

While temporary or emergency repairs may be made to the damaged pipes, permanent repairs should be made by replacement of the damaged section. In case of damage by external blows, the extent of the damage may be greater on the inner-surface. Sometimes, pipes are damaged accidentally due to trenching operation in street repairs. Shell split or chip out occur in the wall of the pipe, a short piece of pipe of sufficient length to cover the damaged portion of the pipe is cut. The sleeve is cut longitudinally and heated sufficiently to soften it so that it may be slipped over the damaged pipe.

Item No:3

Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, SDR- 11 having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Architect In Charge. make ASTRAL-CVPC PRO -SDR 11 or equivalent as approved and selection by architect.-

20mm dia
25mm dia
32mm dia

CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPES

CPVC pipes & fittings used in hot & cold potable water distribution The material from which the pipe is produced shall consist of chlorinated polyvinyl chlorides. The polymer from which the pipe compounds are to be manufactured shall have chlorine content not less than 66.5%.

The internal and external surfaces of the pipe shall be smooth, clean and free from grooving and other defects. The pipes shall not have any detrimental effect on the composition of the water flowing though it.

Fittings

The fittings shall be as follows: (a) Plain CPVC solvent cement fittings from size 15 mm to 160 mm. (b) Brass threaded fittings. (c) Valve from size 15 mm to 160 mm (d) Brass Threaded Fittings: All types of one end brass threaded male/female adaptors in various fittings like coupler, socket, elbow, tee are available for transition to other plastic/metal piping and for fixing of CP fittings. Ball, Gate valves in CPVC are available in all dimensions. All fittings shall carry the following information: (1) Manufacturer's name/trade mark. (2) Size of fitting

INSTALLATION GUIDELINES

Visually inspect pipe ends before making the joint. Use of a chamfering tool will help identify and crakes, as it will catch on to any crack.

Pipe may be cut quickly and efficiently by several methods. Wheel type plastic tubing cutters are preferred. Ratchet type cutter or fine tooth saw are another options. However, when using the ratchet cutter be certain to score the exterior wall by rotating the cutter blade in circular motion around the pipe. Do this before applying significant downward pressure to finalize the cut. This step leads to a square cut. In addition, make sure ratchet cutter blades are sharp. Cutting tubing as squarely as possible provides optimal bonding area within a joint. Burrs and filings can prevent proper contact between the tube and fittings during the assembly, and should be removed from the outside and inside of the tube. A chamfering tool is preferred, but a pocket knife or file is also suitable for this purpose

Use only CPVC cement jointing. Use CPVC cement, which is fully recommended by the manufacturer.

When using adhesive solution/solvent cement be certain of proper ventilation

When making a join, apply a heavy, even coat of cement to the pipe end. Use the same applicator without additional cement to apply a thin coat inside the fitting socket. Too much cement can cause clogged waterways. Do not allow excess cement to puddle in the fitting and pipe assembly. This could result in a weakening of the pipe wall and possible pipe failure when the system is pressurized.

Rotate pipe one-quarter to one-half turn while inserting it into the fitting socket and remove the excess adhesive solution/solvent cement from the joint with clean rag.

When making a transition connection to metal threads, use a special transition fitting or CPVC male threaded adapter whenever possible. Do not over-torque plastic threaded connections. Hand tight plus one-half turn should be adequate.

Hang or strap CPVC systems loosely to allow for thermal expansion. Do not use metal straps with sharp edges that might damage the tubing.

CPVC stub outs for lavatories, closets and sinks are appropriate. However, on areas where there is a likelihood that movement or impact abuse will occur, metal pipe nipples may be amore appropriate stub-out material. Showerheads, tub spouts and outside still cocks are examples.

When connected to a gas water heater, CPVC tubing should not be located within 50 cm of the flue. For water heaters lacking reliable temperature control, this distance may be increased up to 1 m a metal nipple or flexible appliance connector should be utilized. This

measure eliminates the potential for damage to plastic piping that might result from excessive radiant heat from the flue

Piping Installation Support and Spacing

Concealed Piping:
Pipes can be concealed in chases. The pipes and fitting are to be pressure tested prior to concealing the chases. To maintain alignment of CP fittings while joining, all alignment of fittings and pipe shall be done correctly. DO NOT USE NAILS FOR HOLDING OF PIPES IN THE CHASES.
External Installations:
For pipes fixed in the shafts, ducts etc. there should be sufficient space to work on the pipes. Pipes sleeves shall be fixed at a place the pipe is passing through a wall or floor so as to allow freedom for expansion and contraction. Clamping of the pipe is done to support it while allowing the freedom for movement.
All pipes exposed to sunlight shall be painted with a water based acrylic paint emulsion to enhance UV protection. Pipes in trenching shall be laid in accordance to the Good Plumbing practices followed for Metal piping.

Recommended Support Spacing (Distance between Pipe Clamps Horizontal Support)

Pipe Size	Horizontal Support (In meters)			
	Temperature			
	23˚C	38˚C	60˚C	82˚C
16 mm (1/2”)	1.22	1.22	1.07	0.92
20 mm (3/4”)	1.53	1.37	1.22	0.92
25 mm (1/0”)	**1.68**	**1.3**	1.37	0.92
32 mm (1 1/4”)	**1.83**	**1.68**	1.53	1.22
40 mm (1 1/2”)	1.98	**1.83**	1.68	1.22
50 mm (2”)	2.29	**2.14**	1.98	1.22

Testing
All water supply systems shall be tested to hydrostatic pressure test. The pressure tests are similar to the test pressure used for other plastic/metal pipes. System may be tested in sections and such section shall be entirely checked on completion of connection to the overhead tank or pumping system or mains.

Measurements
The net length of pipes as laid or fixed shall be measured in running meters correct to a cm for the finished work, which shall include CPVC pipe and fittings including plain and Brass threaded fittings and jointing solvent cement.

Standards & Specifications

- **IS 15778 :** Standard Specification for CPVC pipes for Hot and Cold Water Supplies - Specification

- **ASTM D1784 :**Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and (Chlorinated Poly Vinyl Chloride) (CPVC) Compounds
- **ASTM D2846 :** Specification for (Chlorinated Poly Vinyl Chloride) (CPVC) Plastic Hot & Cold water distribution systems
- **ASTM F493 :** Standard Specification for Solvent Cements for (Chlorinated Poly Vinyl Chloride) (CPVC) Plastic Pipe & Fittings
- **ASTM F441 :** Standard Specification for (Chlorinated Poly Vinyl Chloride) (CPVC) Plastic Pipe, SCH 40 & 80
- **ASTM F438 :** Socket- Type Chlorinated Polyvinyl Chloride Plastic Pipe Fittings. Schedule 40
- **ASTM F439 :** Socket-Type Chlorinated Polyvinyl Chloride Plastic Pipe Fittings. Schedule 80
- **ASTM D2774 :** Underground installation of Thermoplastic pipes

NSF Approved

NSF International, a not-for-profit and non-governmental organisation, is the world leader in standards development, product certification, education and risk management for public health and safety (www.nsf.org). Astral is the first Indian company to obtain approval from NSF for its CPVC product

Density

: When tested in accordance with IS 12235 (Part 14), the density of the pipes shall be between 1450kg/m3 and 1650kg/m3 .

Pipe Ends

The ends of the pipes meant for solvent cementing shall be cleanly cut and shall be reasonably square to the axis of the pipe or may be chamfered at the plain end.

Effect on Water :

The pipes shall not have any determinate effect on the composition of the water flowing through them, when tested as per 10.3 of IS 4985.

Hydrostatic Characteristics

: When subject to internal hydrostatic pressure test in accordance with the procedure given in IS 12235 (part 8/Sec 1), the pipe shall not fail during the prescribed test duration. The temperatures, duration and hydrostatic (hoop) stress for the test shall conform to the requirements given in Table 18.17. The test shall be carried out not earlier than 24 h after the pipes have been manufactured.

Specifications:

- CPVC PRO pipes and fittings are made from CPVC compound which meets cell class DP 110-2-3-2 as per IS 15778
- It has a maximum service temperature up to 93°C

- It has highest impact resistance without any loss in pressure bearing capacity / tensile strength or vicat softening temperature

Available Sizes

- SDR 11 & SDR 13.5: 1.5cm (½") to 5.0cm (2") CTS – confirming to IS 15778:2007, as per ASTM D2846
- SCH 40: 6.5cm (2½") to 10.0cm (4") IPS, as per ASTM F441 & ASTM F438
- SCH 80: 6.5cm (2½") to 30.0cm (12") IPS, as per ASTM F441 & ASTM F439

1. **SANITARY INSTALLATION AND FIXTURES**

Item No:4

Providing and fixing floor mounted Water Closet size 550x365x390mm including flushing system set soft seat cover P trap including jointing the trap with soil pipe in cement mortar 1:1 (1 cement : 1 find sand) , making lekage proof of all fittings (i) in white color . make - UFC JAQUEL- floor mounted ewc P trap - 5201 or equivalent as approved and selection by architect.

Materials:

Water closets shall be of white vitreous china conforming to IS 2556 (Part-1) and 2556 (Part-2), as specified and shall be of "Wash down type". The closets shall of 635x360x730 or equivalent The closets shall be of one piece construction. Each water closet shall have not less than two holes having a minimum diameter of 6.5 mm for fixing to floor and shall have an integral flushing rim of suitable type. It shall also have an inlet or supply horn for connecting the flushing pipe of dimensions as per product .the flushing rim may be boxed or open type. In the case of box rims adequate number of holes, on each side together with a slot opposite the inlet shall be provided. The flushing rim and inlet shall be of the self draining type. The water closet shall have a weep hole at the flushing inlet. Each water closet shall have an integral trap with either 'S' or 'P' outlet with at least 50 mm water seal. For P trap, the slope of the outlet shall be 14 deg. below the horizontal. Where required the water closet shall have an antisiphonage 50 mm dia vent horn on the outlet side of the trap with dimension conforming to those given in Fig. 17.22 and on either right or left hand or centre as specified set at an angle of 45 deg. and invert of vent hole not below the central line of the outlet. The inside surface of water closets and traps shall be uniform and smooth in order to enable an efficient flush. The serrated part of the outlet shall not be glazed externally. The water closet, when sealed at the bottom of the trap in line with the back plate, shall be capable of holding not less than 15 litres of water between the normal water level and the highest possible water level of the water closet as installed.

Workmanship :

Water Closet shall be fixed to the floor by means of 75 mm. long 6.5 mm. diameter conter sunk bolts and nuts embedded in the floor concrete using rubber or fibre washers so as not to allow any lateral displacement. The joint between the trap of W. C. and soil pipe shall be made with C.M. 1:1(1 cement: 1 fine sand).

Any damage caused to the building, or to electric, sanitary, water supply or other, installations etc. therein, either due to negligence on the part of the contractor, or due to actual requirements of the work, shall be made good and the building or the installation shall be restored to its original condition by the contractor. Nothing extra shall be paid for such restoration works except where otherwise specified.
For making good the damage to the under mentioned items of work, the specifications as given in the following paras shall apply, unless directed otherwise.

Mode of measurements & payment:

The rate shall include the cost of all labour for fixing pans and seat and cover, inlet, connections etc. complete including testing the same. The payment of seat and cover, traps , cement mortar, fitting accessories shall not be made separately.. The rate shall be for a unit of one number.

Item No:5

Providing and fixing wall maounted wash basin 400x550x130mm with intigrated pedestal white having 35 mm C.P. brass pillar tap hole , fixing to the wall using with ss rag bolts & suitable asccessories making good the walls wherever require:, including 32mm Brass Full Thread Waste Coupling 3" , White Vitreous China wash basin size 535x400 mm with single hole , make UFC JAQUEL-WALL HUNG BASIN 5504 - WHITE , waste coupling-100

Materials:
Wash Basins shall be of white vitreous china conforming to IS 2556 (Part-I) and IS 2556 (Part-4). Wash basins either of flat back or angle back as specified shall be of one piece construction, including a combined overflow. All internal angles shall be designed so as to facilitate cleaning. Each basin shall have a rim on all sides, except sides in contact with the walls and shall have a skirting at the back. Basins shall be provided with single or double tap holes as specified. The tap holes shall be 28 mm square or 30 mm round or 25 mm round for pop up hole. A suitable tap hole button shall be supplied if one tap hole is not required in installation. Each basin shall have circular waste hole to which the interior of basin shall drain. The waste hole shall be either rebated or beveled internally with dia meter of 65 mm at top. Each basin shall be provided with a non-ferrous 32 mm waste fitting. Stud slots to receive the brackets on the underside of the wash basin shall be suitable for a bracket with stud not exceeding 13 mm diameter, 5 mm high and 305 mm from the back of basin to the centre of the stud. The stud slots shall be of depth sufficient to take 5 mm stud. Every basin shall have an integral soap holder recess or recesses, which shall fully drain into the bowl. A slot type of overflow having an area of not less than 5 sq. cm, shall be provided and shall be so designed as to facilitate cleaning of the overflow. Where oval shape or round shape wash basins are required to be fixed these shall be fixed preferably in RCC platform with local available stone topping either fully sunk in stone top or top flush with the stone topping as directed by Engineer-in-Charge. (a) Flat back: (b) Angle back: White glazed pedestals for wash basins, where specified shall be provided. The quality of the glazing of the pedestal shall be exactly the same as that of the basin along with which it is to be installed. It shall be completely recessed at the back to accommodate supply and waste pipes and fittings. It shall be capable of supporting the basin rigidly and adequately and shall be so designed as to make

the height from the floor to top of the rim of basin 75 to 80 cm All the waste fittings shall be brass chromium plated, or as specified.

Waste Fittings for Wash Basins and Sinks.

The waste fittings shall be of nickel chromium plated brass, with thickness of plating not less than service grade 2 of IS 4827 which is capable of receiving polish and will not easily scale off. The fitting shall conform in all respect to IS 2963 and shall be sound, free from laps, blow holes and fittings and other manufacturing defects. External and internal surfaces shall be clean and smooth. They shall be neatly dressed and be truly machined so that the nut smoothly moves on the body. Waste fitting for wash basins shall be of nominal size of 32 mm. Waste fittings for sinks shall be of nominal size 50 mm

Fixing

The installation shall consist of an assembly of wash basin, integrated half pedestal of same rag bolts , C.P. brass or P.V.C. waste coupling and waste pipe union, as specified. The wash basin shall be provided with one or two 15 mm C.P. brass pillar tap hole , as specified. The height of top of the rim of wash basin from the floor level shall be within 750 mm to 800 mm. or shall be confirming to the NBC standards.

The basin shall be fixed on wall SS rag bolt of same brand of basin conforming to IS 775 and be embedded in cement concrete (1:2:4) block 100 x 75 x 150 mm. The wall plaster on the rear shall be cut to rest over the top edge of the basin so as not to leave any gap for water to seep through between wall plaster & skirting of basin. After fixing the basin, plaster shall be made good and surface finished matching with the existing one. S.C.I. floor traps conforming to IS 1729 having 50 mm water seal (minimum 35 mm in two pipe systems with gully trap) should be used. Waste pipes laid horizontally should have gradient not flatter than 1 in 50 and not steeper than 1 in 10. The waste water from wash basin shall be discharged directly to vitreous semi-circular open drain, discharging to a floor trap and finally to the vertical stack on upper floors and in case of ground floor, the waste water shall be discharged either directly to the gully trap or through the floor trap C.P. brass trap and union are not to be used in such situations.

If waste pipe is concealed or crosses the wall, waste water shall be discharged through non ferrous trap like PVC Engineering plastic or C.P. brass and union (Fig. 17.17) to vertical stack. The C.P. brass trap and union shall be paid for separately. Where so specified a 20 mm G.I. puff pipe terminating with a perforated brass cap screwed on it on the outside of the wall or connected to the antisyphon stack shall be provided.

Measurements

Wash basins shall be measured in numbers.

Rate

The rate shall include the cost of all the materials comes with kit fixing accessories, and connection to waste coupling and urinal & drainage line and labor involved in all the operations described above.

Item No:6

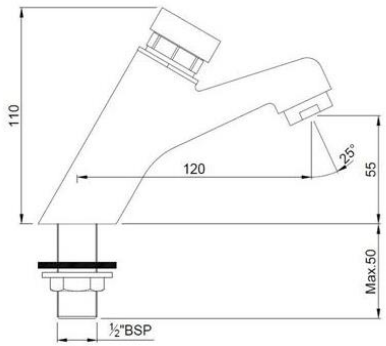
Providing and fixing Brass pressmatic auto closing Pillar Faucet with push type knob , 7.5 ± 2.5 second flow time with base flange, integrated honeycomb structured aerator , plastic cartaidge in mirror polished chrome to the wash basin and connected to the supplyline complete with required fittings ,for utility area basins, of approved quality and conforming to Manufacturers Standards. make UFC JAQUEL- PRESSMATIC PILLAR COCK-602 or equivalent as approved and selection by architect.Pressmatic Pillar Taps

Each tap in this range shall incorporates a self-cleaning mechanism that prolongs the working life of the tap and reduces the likelihood of maintenance work being required. Pressmatic pillar taps are supplied with either push button or lever activation, are WaterMark certified

and provide industry-leading water saving benefits. Manufactured from DR brass and heavy duty in construction, these taps can withstand high degrees of wear and tear.
PressmaticPillar taps shall be have 4 litre per minute flow regulators and easy push operation mechanism chromium plated brass and shall conform to IS 1795. The nominal sizes of the pillar tap shall be 15 mm or 20 mm as specified. The nominal size shall be designated by the nominal bore of the pipe outlet to which the tap is to be fitted. Finished weights of 15 mm and 20 mm pillar taps shall be as prescribed in Table 17.2.

Particulars	Weights in gms	
	15 mm size	20 mm size
Body	255	505
Washer plate	15	28
loose valve	40	50
Back nut Tap	650	1175

Casting shall be sound and free from laps, blow hole and pitting. External and internal surfaces shall be clean, smooth and free from sand and be neatly dressed. The body, bonnet and other parts shall be machined true so that when assembled, the parts shall be axial, parallel and cylindrical with surfaces smoothly finished.
The area of waterway through the body shall not be less than the area of the circle of diameter equal to the bore of the seating of the tap. The seating of pillar tap shall be integral with the body and edges rounded to avoid cutting of washer. Pillar taps shall be nickel chromium plated and thickness of coating shall not be less than service grade No. 2 of IS 4827 and plating shall be capable of taking high polish which shall not easily tarnish or scale.
Every pillar tap, complete with its component parts shall withstand an internally applied hydraulic pressure of 20 Kg/sq. cm maintained for a period of 2 minutes during which period it shall neither leak nor sweat.



Specification:

- in-built self-cleaning mechanism
- Push button and lever action models
- WaterMark certified
- Industry-leading water saving benefits
- Can't be left running after use
- Robust construction
- 7.5 ± 2.5 second flow time
- Push-button shall activate flow with automatic shut-off after 7.5 sec or equivalent

Workmanship:
Pressmatic pillar tap of specified dia. shall be fixed as directed with required washwer of selected leather or rubber asbestos composition or of plastic as directed. The cock shall fixed with pipe line with white zink end spun yarn to make joint water light. The work shall be carried out in best workman like manner.

Mode of measurements & payment:

The rate includes cost of all labour, materials lolls and plant etc. required for satisfaction completion of this item. The rate shall be for a unit of one number

Item No:7

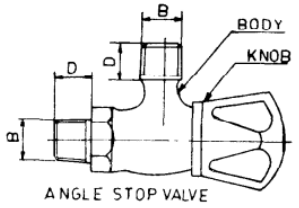
Providing, fixing and testing and commissioning of 15mm CP brass angle cock with brass wall flange &quarter turn lever operating knob , with ceramic spindle complete as per drawing and details.(for wash basin control valves make UFC JAQUEL- antique ANGULAR STOP COCK-1804 or equivalent as approved and selection by architect.

CP BRASS ANGLE VALVE

Casting shall in all respects, be sound and free from defects like laps, blowholes and pitting. External and internal surfaces shall be clean, smooth and free from sand. They shall be neatly dressed and no casting shall be burned, plugged stopped and patched.

Forging shall be sound without any lamination; smooth and well finished. The body, bonnet, spindle and other parts shall be machined true, so that when assembled, the parts shall be axial parallel and cylindrical, with surface smoothly finished within the limits of dimensions specified for various components.

The inlet and outlet connection threads whether internal or external, shall be a pipe thread conforming to either IS 554:1985 or IS 2643 (Part 1 to 3): 1975. This requirement does not apply to single hole combination tap assembly. The threads on the spindle shall be trapezoidal or square conforming to IS 7008 (Parts 1 to 4): 1988 and IS 4694: 1968 respectively. The length of spindle threads shall be such that when the washer plate is resting on the seating without any washer, a length of thread equal to not less than 50 percent of the external diameter of the threaded portion of the spindle shall be in full engagement with the internal thread of the washer plate.



All dimensions in millimetres.

Sl No.	Legend (*see* Fig. 4)	Dimensions for Nominal Size			
		15		20	
		Min	*Max*	*Min*	*Max*
1.	*A*	*G 1/2 Rp 1/2*		*G 3/4 Rp 3/4*	
2.	*B*	*G 1/2B R 1/2*		*G 3/4B R 3/4*	
3.	*C*	9	—	10·5	—
4.	*D*	11	—	12	—

*Conforming to IS 2643 (Part 3) : 1975/IS 554 : 1985.

Sl No.	Component	Material	Indian Standard
1.	Body, body components, inlet tubes, nozzle, bonnet and back nuts	a) Cast brass	Grade CB 2 of IS 292 : 1983
		b) Die cast brass*	Grade DCB2 of IS 1264 : 1989
		c) Forged brass	Grade FIB of IS 6912 : 1985
		d) Leaded tin bronze	Grade LTB 2 of IS 318 : 1981
		e) Brass rods	Type 1 Half hard of IS 319 : 1989
		f) Brass tubes	IS 407 : 1981
		g) Copper tubes	Soft, annealed IS 10773 : 1983
2.	Flanges	a) Cast brass	Grade LCB 2 of IS 292 : 1983
		b) Die cast brass*	Grade DCB2 of IS 1264 : 1989
		c) Froged brass	Grade FLB of IS 6912 : 1985
		d) Leaded tin bronze	Grade LTB 2 of IS 318 : 1981
		e) Brass rods	Type 1 Half hard of IS 319 : 1989
		f) Brass sheet	Grade CuZn 37 of IS 410 : 1977
3.	Spindle, glands, washer plate, nuts, screws and pin	a) Brass rods (Extruded or rolled)	Type 1 Half hard of IS 319 : 1989
		b) Forged brass	Grade FLB of IS 6912 : 1985
4.	Circlip, wire locks	a) Phosphor bronze sheet	Grade 111 HE of IS 7814 : 1975
		b) Phosphor bronze wire	IS 7608 : 1987
		c) Stainless steel	Grade I of IS 4454 (Part 4) : 1975
5.	O ring	a) Synthetic rubber	IS 9975 (Parts 1 to 4) : 1981
6.	Gasket and seat washer	a) Acrylo Nitrille butadiene rubber	
		b) Neopiene rubber	
		c) Synthetic butadiene rubber (S.B.R.)	Grade 5 of IS 7450 : 1974
7.	Knob, knob components, divertor and divertor components	a) Cast brass	Grade LCB 2 of IS 292 : 1983
		b) Die cast brass*	Grade DCB 2 of IS 1264 : 1989
		c) Forged brass	Grade FLB of IS 6912 : 1985
		d) Leaded tin bronze	Grade LTB 2 of IS 318 : 1981
		e) Brass rods	Type 1. Half hard IS 319 : 1989
		f) Zinc base alloys	IS 742 : 1981
		g) Plastics	Polyacetal, Polypropylene, ARS (Acrylo Nitrille - Butadiene Styrene), Arcylics - Polymethyl - Methacrylates, Nylon - Polymides

*Conformity only with chemical composition to comply with.

Workmanship:

The brass angle stop valve 15 mm. dia. as specified above shall be fixed as directed. The threaded portion shall be smeared with white or red lead and around with a few turns of fine-spun yarn round the screwed end of the angle cock. The valve shall be fixed to water tight position.

Mode of measurements & payment:

The rate includes cost of all labour, materials, tools and plant etc. required for satisfactory completion of this item. The rate shall be for a unit of one number.

Item No:8

Providing and fixing 15MM brass 2 way Bib cock with wall flange and aerator, quarter turn lever operating knob, with ceramic spindle, in mirror polished chrome, connected to the supply line complete. With required fittings, for utility area wc , of approved quality and conforming to Manufacturers Standards.

Make UFC JAQUEL- antique BIB COCK-1801 or equivalent as approved and selection by architect.

Materials
15 mm. dia. 2 way brass with bright polished chrom finish shall conform to I.S. 781-1977. The bib coak shall be best Indian make and quality.
.
Workmanship :
The 2 way bib cock 15 mm. dia. as specified above shall be fixed as directed. The threaded portion shall be smeared with white or red lead and around with a few turns of fine spun yarn round the screwed end of the pipe. The bib cock shall be than screwed and fixed to water tight position

Mode of measurements & payment:
The rate includes cost of all labour, materials, tools and plant etc. required for satisfactory completion of this item. 3.2. The rate shall be for a unit of one number.

Bib cock and stop cock :

A bib cock is a draw off tap with a horizontal inlet and free outlet. A stop cock is a valve with a suitable means of
connection for insertion in a pipe line for controlling or stopping the flow.

They shall be of lever operated qurter turn with 2 way nozzle and aerator type and of brass chromium plated and of diameter as specified in the description of the
item. They shall conform to I.S. 781-1977 and they shall be of best Indian make. They shall be polished bright.

The minimum finished weight of bib cock and stop cock shall be as given below :

Diameter	Bib cock	Stop cock	Diameter	Bib cock	Stop cock
8 mm	0.25 Kg.	0.25 Kg.	15 mm.	0.40 Kg.	0.40 Kg.
10 mm.	0.30 Kg.	0.35 Kg.	20 mm.	0.75 Kg.	0.75 Kg.

Item No: 9
Metropole Flush valve concealed push type (dual flush 40 mm) in mirror polished chrome,with wall flange , with required fittings , of approved quality and conforming to Manufacturers Standards. make UFC JAQUEL-metropole dual flush -513 - or equivalent or as approved and selection by architect.

Metropole Flush valve concealed push type (dual flow) 40 mm (1.5”) of jaquel or similarcp brass external body & brass conceal body
Workmanship:
These shall be of CP / sanitary ware. The make and model shall be as specified in the BOQ. These shall be fixed by means of stainless steel screws to wooden / plastic cleats firmly embedded in the wall.
The work is done with all labour and material required with fittings to complete the item. No any extra payment shall be made to require another item if required to complete the set in

working condition as providing and fixing. Finishing work shall be of super fine class. In this work rate is for with all lead and lift up to all floors.

Mode of measurements & payment:

The rate includes cost of all labour, materials, tools and plant etc. required for satisfactory completion of this item. The rate shall be for a unit of one number.

Item No:10

Providing, Stop cock consisting sleeve, lever, flange and concealed part suitable for 25 mm pipeline with inner head all fittings complete as per specification/drawings and details. Make UFC JAQUEL-stop cock 20 mm -1822 or equivalent as approved and selection by architect.

Materials

25 mm. dia. Stop cock with lever operated quarter turn knob with bright polished chrom finish shall conform to I.S. 781-1977. The bib cock shall be best Indian make and quality.

Workmanship:

The stop cock 25mm. dia. as specified above conceal brass body shall be fixed as directed. The threaded portion shall be smeared with white or red lead and around with a few turns of fine spun yarn round the screwed end of the pipe. The bib cock shall be than screwed and fixed to water tight position

Mode of measurements & payment:

The rate includes cost of all labour, materials, tools and plant etc. required for satisfactory completion of this item. The rate shall be for a unit of one number.

Item No:11,11.1

Providing, Installation, testing & commissioning of heavy quality brass drain Valve screw down type of 40 mm size with screwed/flanged ends, factory tested, etc. complete as per specification and to the satisfaction of Project Manager. (Water Supply Riser) for all depth/ heights and lead. Make zoloto/Honeywell, JAQUEL or equivalent as approved and selection by architect.

40mm

32mm

Materials:

The drain screw down valve be of approved quality. shall be of gate valve opening full way and of the size as specified. These shall conform to I.S. 778-1971.valve shall be of tested quality

Workmanship :

40mm Drain Valves should be installed in true tolerance of +/-5mm with respect to the center line of the pipe. Where threaded joints are encountered the threads should be initially sealed with UPVC tape to avoid leakage due to improper tightening and leakage from threading. Proper care has to be taken in welded installation so that the centerline of valve should not deviate from the pipe causing uneven load on the pipe and further stress during its

operation. The welding should be done only after proper inspection of the joint by the Client/PMC/Consultants in the tacked position of the joint. Before putting the line in operative mode the valves should be checked for free and easy operation of the hand wheel. Any burrs or foreign materials should be removed by flushing before final operation so that no choking in the valves should occur which might damage the valve seating.

Mode of measurements & payment:
The rate includes all labours, materials, tools and plant etc. required for satisfactory completion of this item. 3.2. The rate shall be for a unit of one number

Item No:12

Providing and Fixing flush valve 25mm with round flange for urinal with GI inlet connection pipe & Urinal spreader with necessary bolt washers, make Cera or equivalent make JAQUEL elite spreader 360 &metropole 501 or equivalent as approved and selection by architect.
Material
Metropole Flush valve concealed push 25mm of jaquel or similar cp brass external body & brass conceal body
Workmanship :

These shall be of CP / sanitary ware. The make and model shall be as specified in the BOQ. These shall be fixed by means of stainless steel screws to wooden / plastic cleats firmly embedded in the wall.
The work is done with all labour and material required with fittings to complete the item. No any extra payment shall be made to require another item if required to complete the set in working condition as providing and fixing. Finishing work shall be of super fine class. In this work rate is for with all lead and lift up to all floors.
Mode of measurements & payment:
The rate includes cost of all labour, materials, tools and plant etc. required for satisfactory completion of this item. The rate shall be for a unit of one number.

Item No:13

Providing and Fixing Soap Dish in Polished chrome of approved make and conforming to Manufacturers Standards.
As per approved and selection by architect/consultant make UFC JAQUEL-soap dish -113 or equivalent as approved and selection by architect.
Materials:

The Soap dish shall be of approved type as specified in the BOQ. It shall be made up of ABS plastic / CP material.
Selection of high quality Brass Polished Chrome Finish, surface smooth level off, ensuring quality and longevity, Never Rust even in bathroom wet environments for long. The soap dish for the bathroom has a practical drainage hole on its surface, which helps excess water to run off and dry faster. Modern Look With Concealed Screws Design Fits Well In Different Styles. Color: Bright Silver Chrome

Workmanship:
The soap dish in polished chrome as specified above shall be fixed as directed. The installation of the dish would be on the wall tiles of the washrooms. Proper machines and instruments should be used such that no tiles should be damaged. The product shall be screwed tight to the wall.

Mode of measurements & payment:
The rate includes cost of all labour, materials, tools and plant etc. required for satisfactory completion of this item. The rate shall be for a unit of one number.

Item No: 14

Providing and fixing 450mm Long Braided Hose pipe with M10X1 Nipple, 15mm Nut, O-Ring & Rubber Washer (Suitable for Wash Basin, Kitchen Sink etc) of approved make and conforming to Manufacturers Standards. make UFC JAQUEL or as approved and selection by architect.
Materials:

Hose pipe The make and model shall be as specified in the BOQ.

Workmanship:-
These shall be fixed by means of 15 mm nuts , washers and ring connected to the pillar cock and angle cock. The pipe shall be than screwed and fixed to water tight position.

Mode of measurements & payment:
The rate shall include the cost of all the materials , fixing accessories, and connection to pillar cock and angle cock and labor involved in all the operations described above.

Item No: 15

Providing and fixing CP Brass Brass Bottle Trap (Silver) Bottle Trap with 12" pipe of same of approved quality & make and make UFC JAQUEL-bottle trap -5914 or equivalent as approved and selection by architect.
Materials :
The chromium plated bottle trap shall be of approved make and of best quality. The bottle trap shall be provided with coupling.
Workmanship:
The bottle trap shall be fixed on hand wash basin with wooden gullies and screws as directed. The work shall be carried out in best workman like manner.
Mode of measurements & payment:
The rate includes cost of all materials and labour involved for satisfactory completion of this item. The rate shall be for a unit of one number

Item No: 16
Providing and fixing Flexible pipe 32MM DIA P.V.C. waste pipe 1.5 mtr long for sink or wash basin or urinal including P.V.C. waste fittings complete make UFC JAQUEL or equivalent as approved and selection by architect.

Materials:

Flexible pvc waste 1.5 mtrlong pipe The make and model shall be as specified in the BOQ.

Workmanship:-
PVC waste pipe which shall be suitably bent towards the wall and shall discharge into a floor trap. C.P. brass trap and union and waste shall be paid separately.

Mode of measurements & payment:
The rate shall include the cost of all the materials , fixing accessories, and connection to floot trap and drainage outlet from urinal or washbasin and labor involved in all the operations described above.

Item No: 17

Providing, fixing and testing and commissioning of Health faucet with full CP brass body with 1 metre PVC Silver foil connection pipe & full brass stand with all fittings complete as per specification/drawings and details. As per approved and selection by architect/consultant - make UFC JAQUEL-bidet spray -251

These shall be of CP / sanitary ware. The make and model shall be as specified in the BOQ. These shall be fixed by means of stainless steel counter sunk screws to wooden/ plastic cleats firmly embedded in the wall. 15 mm CP health faucet with 1.0m long flexible tube with end nuts & Hook. 1 No 15mm CP brass angular stop cock with wall flange Hook with CP brass counter sunk screws.

Mode of measurements & payment:
The rate shall include the set of all the brass stand, connection with 2 way bib cock and tube as mentioned in BOQ. and labor involved in all the operations described above.

Item No: 18
Providing and fixing C.P. Full brass towel ring complete with C.P. brass brackets fixed to wooden plugs with C.P. brass scews. Make UFC JAQUEL-towel ring -110 or equivalent as approved and selection by architect.

The towel rail shall be of CP BRASS as specified and as per direction of Architect -in-charge.
INSTALLATION OF TOWEL RING
It shall be fixed in position by means of C.P. brass screws on wall surface by S.S dash fasteners, firmly embedded in wall.
Measurements
Towel ring shall be measured in numbers.
Rate
Rate shall include the cost of all the materials and labour involved in all the operations described above.
Item No: 19

Providing and fixing plain P TRAP high riser size 110x110 ,110x160 mm OR according to pipe outlet size and inlet size , of self cleansing design with screwed down or hinged

squrejali 110x110mm with vent arm complete, including cost of cutting and making good the surfaces and floors make ASTRAL - SILENCIO or equivalent as approved and selection by architect.

Materials:
High density low noise multi layer fittings Spigot type Floor drains of self-cleansing design with water seal not less than 35 mm. shall of make and size mentioned in BOQ with grating of size same as mentioned.

Workmanship:
Both the inner and outer surfaces of the fitting shall be cleanly finished, smooth and free from grooving, blistering or other deleterious defects, when viewed without magnification. Each end of the fitting shall be free from chips and rough edges, and shall be square to the axis of the approximate line.
Fittings conforming to IS 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed on wall using of PVC clamp of the size 110 mm diameter x 149 mm length x 145 mm height at every 2000 mm center to center or shall be concealed in walls as directed including necessary fittings such as bends, shoes etc. including testing of pipes and joints and jointed with adhesive solvent cement including cost of all materials. For other details refer the item description.

Mode of measurements & payment:
The rate includes cost of all labour, materials, tolls and plant required for satisfactory completion of this item. The rate shall be for a unit of one number.

Specification:

- **External Layer – PP**: The tough protective shell of the pipe is sturdy and highly impact resistant
- **Middle Layer – Mineral Reinforced PP**: Mineral-reinforced plastic provides very high stability and establishes superior noise insulating effect
- **Internal Layer – PP**: Provides a superior flow performance with its smooth structure, with resistance against high water temperature

  - multilayered fittings
  - having push fit socket with special ring
  - threaded door fitting with additional internal door cap
  - spigot area shall have stopper mark called depth gauge
  - shall have swept gauge to incorporated to ensure smooth flow
  - external ribs on outer side of the socket to provide extra strength to socket

Item No: 20
Providing and fixing MULTI FLOOR trap size 110X75X50 mm spigot type OR acording to pipe outlet size and inlet size & number of connection of self cleansing design with

screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors make ASTRAL - SILENCIO or equivalent as approved and selection by architect.
Materials:

High density low noise multi layer fittings MULTI Floor spigot type 75 mm W.S drains of self-cleansing design with water seal not less than 35 mm. shall of make , size , and material mentioned in BOQ with grating of size same as mentioned.

Workmanship:
Both the inner and outer surfaces of the fitting shall be cleanly finished, smooth and free from grooving, blistering or other deleterious defects, when viewed without magnification. Each end of the fitting shall be free from chips and rough edges, and shall be square to the axis of the approximate line.
Fittings conforming to IS 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed on wall using of PVC clamp of the size 110 mm diameter x 149 mm length x 145 mm height at every 2000 mm center to center or shall be concealed in walls as directed including necessary fittings such as bends, shoes etc. including testing of pipes and joints and jointed with adhesive solvent cement including cost of all materials. For other details refer the item description.

Mode of measurements & payment:
The rate includes cost of all labour, materials, tolls and plant required for satisfactory completion of this item. The rate shall be for a unit of one number.

Specification:

- **External Layer – PP**: The tough protective shell of the pipe is sturdy and highly impact resistant
- **Middle Layer – Mineral Reinforced PP**: Mineral-reinforced plastic provides very high stability and establishes superior noise insulating effect
- **Internal Layer – PP**: Provides a superior flow performance with its smooth structure, with resistance against high water temperature

    - multilayered fittings
    - having push fit socket with special ring
    - threaded door fitting with additional internal door cap
    - spigot area shall have stopper mark called depth gauge
    - shall have swept gauge to incorporated to ensure smooth flow
    - external ribs on outer side of the socket to provide extra strength to socket

Item No: 21

Providing and fixing NHANI trap size 110X75 mm OR according to pipe outlet size and inlet size & number of connection of self cleansing design with screwed down or hinged

grating with or without vent arm complete, including cost of cutting and making good the walls and floors make ASTRAL - SILENCIO or equivalent as approved and selection by architect.

Materials:
NHANI TRAP drains of self-cleansing design with water seal not less than 35 mm. shall of make and size mentioned in BOQ with grating of size same as mentioned.

Workmanship:
Both the inner and outer surfaces of the fitting shall be cleanly finished, smooth and free from grooving, blistering or other deleterious defects, when viewed without magnification. Each end of the fitting shall be free from chips and rough edges, and shall be square to the axis of the approximate line.
Fittings conforming to IS 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed on wall using of PVC clamp of the size 110 mm diameter x 149 mm length x 145 mm height at every 2000 mm center to center or shall be concealed in walls as directed including necessary fittings such as bends, shoes etc. including testing of pipes and joints and jointed with adhesive solvent cement including cost of all materials. For other details refer the item description.

Mode of measurements & payment:
The rate includes cost of all labour, materials, tolls and plant required for satisfactory completion of this item. The rate shall be for a unit of one number.

Specification:

- **External Layer – PP**: The tough protective shell of the pipe is sturdy and highly impact resistant
- **Middle Layer – Mineral Reinforced PP**: Mineral-reinforced plastic provides very high stability and establishes superior noise insulating effect
- **Internal Layer – PP**: Provides a superior flow performance with its smooth structure, with resistance against high water temperature

    - multilayered fittings
    - having push fit socket with special ring
    - shall have swept gauge to incorporated to ensure smooth flow
    - external ribs on outer side of the socket to provide extra strength to socket

Item No: 22
Providing and fixing 100 mm sand cast Iron grating for gully trap. Make ASTRAL/ashirvad/prince - or equivalent as approved and selection by architect.

Gully traps shall conform to IS 651. These shall be sound, free from visible defects such as fire cracks, or hair cracks. The glaze of the traps shall be free form crazing. They shall give a sharp clear tone when struck with light hammer. There shall be no broken blisters.

Each gully trap shall have one C.I. grating of square size corresponding to the dimensions of inlet of gully trap. It will also have a water tight C.I. cover with frame inside dimensions 300 x 300 mm the cover weighing not less than 4.50 Kg and the frame not less than 2.70 Kg. The grating, cover and frame shall be of sound and good casting and shall have truly square machined seating faces.

Item No: 23 - 24

Providing & fixing PVC Cowl on PVC ventilating pipes and verticals for soil and waste Pipes & Rain water pipes at top level/ terrace level, as specified and required, etc. complete.

(A) 110 mm diameter
(B) 75mm diameter

make ASTRAL/ashirvad/prince - or equivalent as approved and selection by architect

Materials:

Vent cowls may be of suitable length with perforations/openings. The dimensions of wall thickness and socket depth may be as per Table below.

Sl No.	Nominal Diameter mm	Socket Depth *Min* mm	Wall Thickness of Socket, *Min* mm
(1)	(2)	(3)	(4)
i)	40 to 63	20.0	1.8
ii)	75 to 90	22.0	2.0
iii)	110 to 160	24.0	2.0

Workmanship:

Both the inner and outer surfaces of the fitting shall be cleanly finished, smooth and free from grooving, blisteringor other deleterious defects, when viewed without magnification. Each end of the fitting shall befree from chips and rough edges,andshallbesquare to the axis of the approximate line.

Mode of measurements & payment:

The rate includes cost of all labour, materials, tolls and plant required for satisfactory completion of this item. The rate shall be for a unit of one number.

Item No: 25

Re-fixing existing mirror to wooden cleats with new C.P. brass screws and washers complete

Fixing The mirror shall be mounted on backing with environmentally friendly material other than asbestos cement sheet shall be fixed in position by means of 4 C.P. brass screws and C.P.

brass washers, over rubber washers and wooden plugs firmly embedded in walls. C.P. brass clamps with C.P. brass screws may be an alternative method of fixing, where so directed. Unless specified otherwise the longer side shall be fixed horizontally.

Measurements
Fixing of existing Mirror shall be measured in numbers.

Rate
Rate shall include the cost of all the materials used to fix existing mirror and labour involved in all the operations described above.

Item No: 26

Dismantling sanitary fittings like wash basin. W. C. Pan Indian & European Type Flushing tank, etc. including stacking the materials with all lead and lift.

Workmanship :
The demolition shall consist of demolition of one or more parts of the building Demolition implies taking up or down or breaking up. This shall consist of demolishing whole or part of work including all relevant item as specified in BOQ . The demolition shall always be planned before hand and shall be done in reverse order of the one in which the structure was constructed. This scheme shall be got approved from the Architect- in-charge before starting the work. This however will not absolve the Contractor from the responsibility of proper and safe demolition. Necessary dropping, shoring and under pinning 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 damages is caused to the adjoining property. 1.4. Wherever required, temporary enclosures or partitions shall also be provider. Necessary precautions shall be taken to keep the dust nuisance down as and where necessary. 1.5. Dismantling shall be commenced in a systematic manner. All materials which are likely to be damaged by dropping from a height or demolishing roof, masonry etc. shall be carefully dismantled first. The dismantled articles shall be properly stacked as directed. AH materials obtained from demolition shall be the property o. Government unless otherwise specified and shall be kept in safe custody until handed over to the Engineer-in-charge.
Any serviceable materials, obtained during dismantling or demolition shall be separated out and stacked properly as directed, with all lead and lift. All unserviceable materials, rubbish etc. shall be slacked as directed by the Engineer-in- charge. On completion of work, the site shall be cleared of all debris rubbish and cleaned as directed
The relevant shall be followed except that the dismantling work of sanitary fittings such as wash basin, W. C: Pan (all type of pans), flushing tanks etc. shall be carried out.
Mode of measurements & payment:
The-rate shall be for a unit of one number.

Item No: 27

Demolition of Brick work and stone masonry including stacking of serviceable materials and disposal of unserviceable materials with all lead and lift.(ii) In Cement Mortar.

Workmanship

The relevant specifications of item No. 28 (I) shall be followed except the dismantling work of brick work and stone work is to be done.

Mode of measurements & payment:

The relevant specifications of item No. 26 shall be followed except that the dismantling work of brick work and stone work shall be measured in this item. The rate shall be for a unit of one sq. metre.

Item No: 28

Filling available excavated earth (excluding rock) in trenches. plinth, sides of foundations etc. in layers not exceeding 20cm. in depth consolidating each disposited layer by ramming and watering

Workmanship

The earth to be used for. filling shall be free from salts, organic or other foreign matter. All clods of earth shall be broken. As soon as the work in foundation has been completed and measured, the site of foundation shall be cleared of all debris, brick bats, mortar dropping etc; and filled with earth in layers not exceeding 20 Cms. Each layer shall be adequately watered, rammed and consolidated before the succeeding layer is laid. The earth shall be rammed with iron rammers where feasible and with the butt ends of crow-bars, where rammer cannot be used. The plinth shall be similarly filled with earth in layers not exceeding 20 Cms. adequately watered and consolidated by ramming with iron or wooden rammers. When filling reaches finished level, the surface shall be flooded with water for at least 24 hours and allowed to dry and then rammed and consolidated. The finished level of filling shall be kept to shape intended to be given to floor. In case of large heavy duty flooring like factory flooring, the consolidation may be done by power rollers, where so specified. The extent of consolidation required shall also be as specified. The excavated stuff of the selected type shall be allowed to be used in filling the trenches and plinth. Under no28
Circumstances black cotton soil be used for filling the plinth.

Mode of measurement and payment:

The payment shall be made for filling in plinth and trenches. No deduction shall be made for shrinkage or voids, if consolidated as instructed above. The rate shall be for a unit of one cubic meter

Item No: 29

Dismantling stone slab flooring laid in cement mortar including stacking of serviceable material and disposal of unserviceable material

Workmanship

The relevant specifications of item No. 28 (I) shall be followed except the dismantling stone slab flooring work is to be done.

Mode of measurements & payment:

The relevant specifications of item No. 28 shall be followed except that the dismantling stone slab floor work shall be measured in this item. The rate shall be for a unit of one sq. meter.

Item No: 30

Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 meters lead.

Workmanship

The relevant specifications of item No. 28 (I) shall be followed except the dismantling tile work is to be done.

Mode of measurements & payment:

The relevant specifications of item No. 28 shall be followed except that the dismantling tile work shall be measured in this item. The rate shall be for a unit of one sq. meter.

Item No: 31

Taking out existing wooden door shutter, repair by cutting, painting etc. and re-fixing of repaired door shutters to existing door frames, including replacement of hinges with screws, etc. as required, all complete as per the direction of the Engineer-in-charge.

Taking out existing wooden door shutter, repair by cutting, painting etc. and re-fixing of repaired door shutters to existing door frames, including replacement of hinges with screws, etc. as required, all complete as per the direction of the Engineer-in-charge.

Mode of measurement and payment:

The payment shall be made for labor and material specified in Boq .measurement shall be done in sqmtr rate

Item No: 32

Removing and scraping of old deteriorated plaster of any thickness fromm wall / R.C.C member including stacking of serviceable material and disposal of unserviceable from site of work with all lead and lift

Materials & Workmanship:

All loose pieces and scales shall be removed by sand papering and surface shall be cleared of all grease, dust, dirt, etc. on plastered wall surface. Where heavy scaling has taken place, the entire surface shall, be scrapped by means of steel scrappers so as to remove all accumulated old deteriorated plaster, & leaving clean surfaces. Necessary repairs to the scratches shall be made as directed. All unsound portion of the surface plaster shall be removed to full depth of plaster in rectangular patches

Mode of measurements & payment

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

The rate shall include the cost of all materials, labor, scaffolding, protective measures etc. involved in all the operations described above. No deduction shall be made for attachment such as casing, conducts, pipe, electric wiring

Area in individual items shall be worked out to the nearest 0.01 Sq. M.

No deductions shall be made for ends of joints beams, posts etc

Item No: 33

Dismantling C.I. or asbestos rain water pipe with fittings and clamps including stacking the material within 50 metres lead : 150 mm dia pipe

Workmanship

The relevant specifications of item No. 28 (I) shall be followed except the dismantling pipes work is to be done.

Mode of measurements & payment:
The relevant specifications of item No. 28 shall be followed except that the dismantling pipe work shall be measured in this item. The rate shall be for a unit of one meter.

Item No: 34

Cutting holes up to 15x15 cm in R.C.C. floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including finishing complete so as to make it leak proof.

This method involves drilling and testing cores from the concrete for determination of compressive strength. In suitable circumstances, the compressive strength of the concrete in the structure may be assessed by drilling cores from the concrete and testing. The procedure used shall comply with the requirements of IS 1199 and IS 516.

The points from which cores shall be taken shall be representative of the whole concrete and at least three cores shall be obtained and tested. If the average of the strength of all cores cut from the structure is less than the specified strength, the concrete represented by the cores shall be liable to rejection and shall be rejected if a static load test (B-5) either cannot be carried out or is not permitted by the Engineer-in-Charge.

specification for core cutting will be as per equipment used for making holes by service provider and relevant IS code will be followed.

Waterproofing chemical - additive in mortars: 1 part Keraplast Eco P6: 3 parts cement Mortars to repair plasters/renders and cracks: damp the surface and apply a coat of modified mortar on the previously cleaned surface.

Detail specification as per IS 2645 (2003): Integral Waterproofing Compounds for Cement Mortar and Concrete -Specification [CED 2: Cement and C Concrete]

Item No: 35

Providing waterproofing treatment in two coats for sunken slab areas, bathrooms floor and walls , balconies, chajjas, exposed roofs before laying of screeds, water tanks (underground or external), lift pits, after preparing and cleaning the surface The surface must be perfectly cured and dry, solid (i.e. free of weak or easily removable parts) and free from oil, grease, paint and de-bonding agent. The recommended mixing ratios are shall follows the manufacturers' standards or as indicated on packging. Apply the first coat about 1 – 2 mm thick, pressing down to ensure maximum adhesion to the surface. Aquastop AR1 mesh, submerge the reinforcing mesh fully in the first layer of freshly applied Aquastop Nanoflex®,pressing down with the trowel. the second coat of Aquastop Nanoflex®. Apply a continuous, even layer about 2 – 3 mm thic covering the surface completely.

A. **water proofing with eco kerapalst p6 + AQUA STOP120 or equivalent make for bathroom and sunken area as well as vertical surfaces like walls , sunk beams make kerakall or equivalent as approved and selection by architect.**

Preparation of substrates

The surface must be perfectly cured and dry, solid (i.e. free of weak or easily removable parts) and free from oil, grease, paint and de-bonding agent. When working on weakened

parts, when parts of the substrate are missing and also in the case of gravel beds, the substrate must be restored with suitable products. Correct uneven areas with suitable finishing products. On ceramic substrates all traces of surface treatments such as wax and oil must be removed. The most suitable cleaning methods are sandblasting, mechanical scarification or washing with detergents and jet washing. Before application damp absorbent surfaces without letting any stagnant water. Take due care to waterproof perimeter joints, expansion and desoliderisation joints using Aquastop 120 tape, bonded with keraplast eco p6. Use the special pieces to waterproof external angles, internal angles and connections to drains. Any structural joints must first be waterproofed. Preparation Prepare keraplast eco p6® in a clean container by pouring in approximately ¾ of the water required. Gradually add keraplast eco p6 ® to the container, mixing the paste from the bottom upwards with a low-rev (≈ 400/min) agitator. Add more water until the desired consistency is obtained. The mixture must be of smooth consistency and without any lumps. The amount of water to be added, indicated on the packaging, is an approximate guide. It is possible to obtain desired consistency of mixture according to the application demand.

Application

keraplast eco p6should be applied with a brush or a plain trowel on a previously prepared surface. Apply the first coat about 1 – 2 mm thick, pressing down to ensure maximum adhesion to the surface. Once hardened and after removing any surface condensation, apply the second coat of keraplast eco p6®. Apply a continuous, even layer about 2 – 3 mm thick covering the surface completely. When waterproofing with Aquastop AR1 mesh, submerge the reinforcing mesh fully in the first layer of freshly applied keraplast eco p6®, pressing down with the trowel. The subsequent fixing of the covering should be placed at least 24 hours after the last layer has been applied, using H40® Eco range eco-friendly mineral adhesive. When working in low temperatures and with high humidity, the waiting time before laying will be longer. If rain falls on the product before it is fully hardened, check it is ready before applying the next coat/

covering.

Cleaning Residual traces of keraplast eco p6® can be removed from tools with plain water before the product hardens.

Item No: 36

12 mm cement plaster of mix : 1:4 (1 cement: 4 fine sand)

Material:

CEMENT PLASTER

The cement plaster shall be 12 mm, 15 mm or 20 mm thick as specified in the item.

Scaffolding

For all exposed brick work or tile work double scaffolding independent of the work having two sets of vertical supports shall be provided. The supports shall be sound and strong, tied together with horizontal pieces over which scaffolding planks shall be fixed.

For all other work in buildings, single scaffolding shall be permitted. In such cases the inner end of the horizontal scaffolding pole shall rest in a hole provided only in the header course for the purpose. Only one header for each pole shall be left out. Such holes for scaffolding

shall, however, not be allowed in pillars/columns less than one metre in width or immediately near the skew backs of arches. The holes left in masonry works for scaffolding purposes shall be filled and made good before plastering.

Note : In case of special type of brick work, scaffolding shall be got approved from Engineer-in-charge in advance.

Preparation of Surface

The joints shall be raked out properly. Dust and loose mortar shall be brushed out. Efflorescence if any shall be removed by brushing and scrapping. The surface shall then be thoroughly washed with water, cleaned and kept wet before plastering is commenced.

In case of concrete surface if a chemical retarder has been applied to the form work, the surface shall be roughened by wire brushing and all the resulting dust and loose particles cleaned off and care shall be taken that none of the retarders is left on the surface.

Mortar

The mortar of the specified mix using the type of sand described in the item shall be used. It shall be as specified in Subhead 3.0. For external work and undercoat work, thefine aggregate shall conform to grading IV. For finishing coat work the fine aggregate conforming to grading zone V shall be used

Application of Plaster

Ceiling plaster shall be completed before commencement of wall plaster.

Plastering shall be started from the top and worked down towards the floor. All putlog holes shall be properly filled in advance of the plastering as the scaffolding is being taken down. To ensure even thickness and a true surface, plaster about 15 × 15 cm shall be first applied, horizontally and vertically, at not more than 2 metres intervals over the entire surface to serve as gauges. The surfaces of these gauged areas shall be truly in the plane of the finished plaster surface. The mortar shall then be laid on the wall, between the gauges with trowel. The mortar shall be applied in a uniform surface slightly more than the specified thickness. This shall be brought to a true surface, by working a wooden straight edge reaching across the gauges, with small upward and side ways movements at a time. Finally the surface shall be finished off true with trowel or wooden float according as a smooth or a sandy granular texture is required. Excessive troweling or over working the float shall be avoided.

Thickness

Where the thickness required as per description of the item is 20 mm the average thickness of the plaster shall not be less than 20 mm whether the wall treated is of brick or stone. In the case of brick work, the minimum thickness over any portion of the surface shall be not less than 15 mm while in case of stone work the minimum thickness over the bushings shall be not less than 12 mm.

Curing shall be started as soon as the plaster has hardened sufficiently not to be damaged when watered.

Finish

The plaster shall be finished to a true and plumb surface and to the proper degree of smoothness as required. The work shall be tested frequently as the work proceeds with a true straight edge not less than 2.5 m long and with plumb bobs. All horizontal lines and surfaces shall be tested with a level and all jambs and corners with a plumb bob as the work proceeds.

Rate The rate shall include the cost of all labour and materials involved in all the operations described above

Item No: 37

12 mm cement plaster finished with a floating coat of neat cement of mix : 1:4 (1 cement: 4 fine sand)
The cement plaster shall be 12, mm thick, finished with a floating coat of neat cement, as described in the item.

Specifications for this item of work shall be same as described in above item except for the additional floating coat which shall be carried out as below.

When the plaster has been brought to a true surface with the wooden straight edge it shall be uniformly treated over its entire area with a paste of neat cement and rubbed smooth, so that the whole surface is covered with neat cement coating. The quantity of cement applied for floating coat shall be 1 kg per sqm. Smooth finishing shall be completed with trowel immediately and in no case later than half an hour of adding water to the plaster mix. The rest of the specifications described in above item

Item No: 38

6 mm cement plaster 1:3 (1 cement: 3 fine sand) finished on top on walls, R.C.C. slabs and beams.
The cement plaster shall be 6 mm thick, as described in the item.

Specifications for this item of work shall be same as described in above item .except for the thickness of plaster.

Item No: 38.1

Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers make kerakall eco p6 or equivalent as approved and selection by architect

Water Proofing Compound Integral cement water proofing compound conforming to IS 2645 and of approved brand and manufacture, enlisted by the Engineer-in-Charge from time to time shall be used.

The contractor shall bring the materials to the site in their original packing. The containers will be opened and the material mixed with dry cement in the proportion by weight, recommended by the manufacturers or as specifically described in the description of the item. Care shall be taken in mixing, to see that the water proofing material gets well and integrally mixed with the cement and does not run out separately when water is added.
It shall be measured by weight.
The rate shall include the cost of all labor and materials involved in all the operations described above.

Item No: 39

Providing and injecting approved grout in proportion recommended by the manufacturer into cracks/honey-comb area of concrete/masonry by suitable gun/pump at required pressure including cutting of nipples after curing etc. complete as per directions of Engineer-in-Charge. (The payment shall be made on the basis of actual weight of approved grout injected.)

Providing and injecting approved grout in proportion recommended by the manufacturer into cracks/honey-comb area of concrete/masonry by suitable gun/pump at required pressure including cutting of nipples after curing etc. complete as per directions of Engineer-in-Charge. (The payment shall be made on the basis of actual weight of approved grout injected.)
Rate The rate shall include the cost of all labor and materials involved in all the operations described above

Item No: 40

Providing and laying Ceramic glazed wall tiles of size 300x600 mm (thickness to be specified by the manufacturer), of 1st quality conforming to IS: 15622, of approved make, in all colours, shades White, Ivory, Grey, Fume Red Brown or any laid on 20 mm thick bed of cement mortar 1:4 (1 Cement: 4 Coarse sand), excluding pointing the joints make tile AGL TILE 300X600 GVT or equivalent as approved and selection by architect

Material:

i) Water:

Water shall not be salty brackish and shall be clean reasonably clear and free objectionable quantities of silt and traces of oil injurious alkalis salts organic matter and other deleterious
material which will either weaken the mortar of concrete or cause efflorescence or attack the steel in R.C.C container for transport storage and huddling of water shall be clean, Water shall confirm to the standard specified in I S 455 -1978

If required by the Engineer in charge it shall be tested by comparison with distilled water compression shall be made by means of standard cement tests for soundness time of setting and mortar strength as specified in I S 269-1976 Any indication of unsoundness charge in time

of setting by 30 minutes or more or decrease of more than 10 percent strength of mortar prepared with distilled water sample when compared with the result obtained with mortar prepared with distilled water shall be sufficient cause for rejection of water under test.

Water for curing mortar concrete or masonry should not be too acidic or too alkaline

i) Cement

Cement to be used in the works shall be any of the following types with the prior approval of the Engineer:

a) Ordinary Portland cement, 33 Grade, conforming. to*IS:269.*
b) Rapid Hardening Portland Cement, conforming to 1S:8041.
c) Ordinary Portland Cement, 43 Grade, conforming to *IS:8112.*
d) Ordinary Portland Cement, 53 Grade, conforming to *IS:12269.*
e) Soleplate Resistant Portland Cement, conforming to *IS:12330.*

ii) Sand

Sand shall be natural sand, clean well graded, hard strong durable and gritty particular free from immures amounts of dust, clay, kankar modules, soft: or flaky particles shall alkali salts, organic matter, learn mica or other deleterious substance and shall be got approved from the Engineer-in-charge. The sand shall not contain more than 8 percent of slit as determined by field test. if necessary the sand.
Coarse Sand: The fineness modules of coarse sand shall not be less than 2.5 and shall not exceed 3.0. The sieve analysis of coarse sand be as under:

I. S. Sieve Designation	% by wt. passing
4.75 mm	100
2.36mm	90 to 100
1.18 mm	70 to 100
600 MC	30 to 100
300 MC	85 to 70
150 MC	00 to 50

FINE SAND: The fineness module shall not exceed 1.0 the sieve analysis of fine sand be as under:

IS. Sieve Designation	% by wt. passing
4.75 mm	100
2.3 6mm	. 100
1.18 mm	75 to 100
600 MC	40 to 85
300 MC	05 to 50
150 MC	00 to 10

iii) Ceramic Tiles:

As per approved make by the consultant/architect/engineer. Ceramic glazed tiles 8 mm to 10 m thick 300x600mmsize plane white or off white Shade.

iv) White Cement:

White cement shall be of approved make it shall confirm definition of I S 8042 –E-1978 the sample of white cement shall be approved by Engineer in charge

Workmanship:

First of all surfaces shall be cleaned by thoroughly brooming and then by wire brushes. All the loose material dust and debris shall be removed thoroughly for the entire surface.

All joints and cracks shall be racked off and cut in v trench which shall be filled by neat cement slurry admixed with water proofing compound The joints shall be racked up to 30 cm height and shall be applied by neat cement slurry admixed with water proofing compound

Neat cement slurry shall be prepared and a water proofing compound of approved make shall be mixed with the slurry in proportion specified by the manufacturer of the compound and shall be laid throughout the surface by the use of brushes mala etc. Cement slurry shall be prepared by adding adequate quantity of water so as to spread it uniformly on the surface.

After two days of proper curing applying a second coat of cement slurry on entire surface shall be finished with 20 mm thick Cement Mortar 1:6 (1cement: 6coarsesand) or Lime Mortar 1:1.5 (1lime: 1.5coarsesand) and vitrified granite tilling in true level and slope as directed by Engineer in charge & finally finishing the surface with trowel with white cement slurry.

Item No: 41

Providing and laying anti skid glazed vitrified floor tiles Size of Tile 600x600 mm size (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), mixed with water proofing chemical compound excluding pointing the joints make tile AGL TILE 600X600 GVT or equivalent as approved and selection by architect

i) refer above specification accept for the glazed vitrified antiskid Tiles: 600x600mm white or off white shade As per approved make by the consultant/architect/engineer

Item No: 42

Providing and laying Ceramic glazed colored wall tiles of size 300x600 mm or 300x300mm (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades White, Ivory, Grey, Fume Red Brown or any laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand),

mixed with water proofing chemical compound excluding pointing the joints make tile AGL TILE or equivalent as approved and selection by architect

i) refer above specification accept for the glazed ceramic colored red , blue and yellow vibrant colors Tiles:
300x200mm or equivalent As per approved make by the consultant/architect/engineer

Item No: 43

Grouting the joints of flooring tiles having joints of 3 mm width, using epoxy grout mix of 0.70 kg of organic coated filler of desired shade (0.10 kg of hardener and 0.20 kg of resin per kg), including filling / grouting and finishing complete as per direction of Engineer-in-charge make dubond or equivalent as approved and selection by architec

Epoxy Grout

Grout is the material that is used to fill the space between adjacent tiles and support the joints.

The Epoxy grout consists of mix of 0.70 kg of organic coated filler of desired shade and mixing of 0.10 kg of hardener and 0.20 kg of resin per kg.. They have very low water absorption, higher compressive strength and are resistant to staining and easy to maintain. Epoxy grout is a waterless mix formed by mixing a base material (part A) and a hardener (part B). These components are mixed at site just prior to grouting.

Generally, epoxy grouts require no additional sealer to protect the surface.

Application process

Surface preparation It shall be ensured that tiles are firmly set and adhesive or mortar is completely dry for 24 hours. All spacers, pegs, ropes and string shall be removed and joints be cleaned by removing free loose dirt particles.

Preparing mix and application

The complete unit Part A (Base) and Part B (Hardener) shall be properly mixed in given ratio. The desired colour of grout shall be obtained by mixing required quantity of colour with base to ensure homogeneity.

The grout shall be pressed firmly by using a hard rubber squeeze into joints ensuring that joints are completely filled. Excess grout material shall be removed from joints and surface by moving squeeze on grout line after 22 to 25 minutes. The damp sponge shall be used in circular motion on tile surface to achieve the flush joint. After completion of work the grout haze shall be cleaned with clean water or soap solution. The suitable rubber gloves shall be used to avoid skin contact during application.

Measurement

Length and breadth of grouted tile of any size area shall be measured correct to a cm and the area shall be calculated in sqm correct to two places of decimal.

Rates

The rate shall include the cost of all materials and labor involved in all operations described above. Nothing extra shall be paid.

Item No: 44

Brick work 7 cm thick with common burnt clay F.P.S. (non modular) brick of class designation 7.5 in cement mortar 1:3 (1 cement : 3 coarse sand) in superstructure above plinth level and upto floor five level.

HALF BRICK WORK

Laying

Brick work in half brick walls shall be done in the same manner as described above **except that the bricks shall be laid in stretcher bond.** When the half brick work is to be reinforced, 2 Nos. M.S. bars of 6 mm dia., shall be embedded in every third course as given in the item (the dia of bars shall not exceed 8 mm). These shall be securely anchored at their end where the partitions end. The free ends of the reinforcement shall be keyed into the mortar of the main brick work to which the half brick work is joined. The mortar used for reinforced brick work shall be rich dense cement mortar of mix 1:4 (1 cement: 4 coarse sand). Lime mortar shall not be used. Over laps in reinforcement, if any shall not be less than 30 cm.

The mortar interposed between the reinforcement bars and the brick shall not be less than 5 mm.

The mortar covering in the direction of joints shall not be less than 15 mm.

All loose materials, dirt and set lumps of mortar which may be lying over the surface on which brick work is to be freshly started, shall be removed with a wire brush and surface wetted. Bricks shall be laid on a full bed of mortar, when laying, each brick shall, be properly bedded and set in position by gently pressing with the handle of a trowel. Its inside face shall be buttered with mortar before the next brick is laid and pressed against

The brick work shall be built in uniform layers. No part of the wall during its construction shall rise more than one metre above the general construction level. Parts of wall left at different levels shall be raked back at an angle of 45 degrees or less with the horizontal. Toothing shall not be permitted as an alternative to raking back. For half brick partition to be keyed into main walls, indents shall be left in the main walls.

All pipe fittings and specials, spouts, hold fasts and other fixtures which are required to be built into the walls shall be embedded, as specified, in their correct position as the work proceeds unless otherwise directed by the Engineer-in-Charge

Joints

The thickness of all types of joints including brick wall joints and cross joints shall be such that four course and three joints taken consecutively shall measure as follows: (i) In case of modular bricks conforming to IS 1077 specification for common burnt clay buildings bricks, equal to 39 cm.

(ii) In case of non-modular bricks, it shall be equal to 31 cm.

Bricks shall be laid with frog (where provided) up. However, when top course is exposed, bricks shall be laid with frog down. For the bricks to be laid with frog down, the frog shall be filled with mortar before placing the brick in position.

In case of walls one brick thick and under, one face shall be kept even and in proper plane, while the other face may be slightly rough. In case of walls more than one brick thick, both the faces shall be kept even and in proper plane.
Curing The brick work shall be constantly kept moist on all faces for a minimum period of seven days. Brick work done during the day shall be suitably marked indicating the date on which the work is done so as to keep a watch on the curing period.

Scaffolding
Scaffolding shall be strong to withstand all dead, live and impact loads which are likely to come on them. Scaffolding shall be provided to allow easy approach to every part of the work.

Walls half brick thick and less shall each be measured separately in square metres stating thickness.

Measurements
The length and height of the wall shall be measured correct to a cm. The area shall be calculated in sq.m. where half brick wall is joined to the main walls of one brick or greater thickness and measurements for half brick wall shall be taken for its clear length from the face of the thicker wall.
Rate
The rate includes the cost of the materials and labour involved in all the operations described above except reinforcement which is to be paid for separately**.**
Item No: 45

VENT:-Providing and fixing standard extruded of aluminum section of size 63.50 x 38.10 x 1.95 mm(of Jindal Section no:4605, @ Wt 1.094Kg /Rmt with color anodized aluminum frame with 5 mm thick transparent bronze color tinted float glass with color anodized aluminum frame for ventilation with 5 mm thick frosted glass as details etc complete for. Window

Material & Workmanship:-
Aluminum alloy used in the manufacturing of extruded section for windows shall confirm to HE9-WP of I.S 733 – 1956 and also hollow aluminum section confirm to IS designation HV9 – WP – IS – 1285 – 1958. Aluminum section of approved weight shall be procured at site. Fabrication shall be done as per I.S 1948 – 1961 & drawing or as directed. Details of the anodized powder coating section to be used are as under:

1. Frame 63.5mm x 38.10 mm x 1.95mm
2. Louver frame40.00 mm x 18.00 mm x 1.29 mm
3. Transparent float glass 5.00 mm thick

Float Glass:

5 mm thick transparent float glass of the make MODI GUARD / ASAHI / SAINT GLOBAL or as equivalent of approved by Engineer-in-charge shall be used & shall be conforming to relevant I.S code. Necessary colour anodized aluminum glazing clips shall confirm to relevant IS code. Transparent Silicon Gasket and PVC track rubber shall confirm to quality approved by engineer in charge.

Fixtures & fastenings:

Fixtures and fastenings shall be provided as per requirement & as directed by Engineer in charge.

Section used shall be single or double type as per requirement. Window - frame without shutter shall be prepared as per drawing or as directed by the Engineer – in – Charge. Whole framework shall be finished and erected in true line and level. The section shall be fixed with necessary screws & wooden peg nails required.

Size of glass for glazing at panels shall be as per drawing and shall be fixed in such a way so as to allow a clearance of 2.50 mm between the edges of glass and aluminium glazing clips surround clearance may be increased if directed.

All stains from the surfaces of glass shall be removed and cleaned with thinner or spirit without any extra payment. Working of all hinges shall be smooth and free. If any hinges or locking arrangement found faulty, shall be replaced to the satisfaction of Engineer – in – Charge without claiming any extra charges.

The size of mosquitoes proof jali at panels shall be as per drawing or as directed by Engineer-in-charge. The entire work shall be executed to the satisfaction of Engineer – in - Charge. The window shall be fully sliding as per drawing or as directed by Engineer – in – Charge

CONDITIONS FOR ALUMINUM WORKS

(a) The glazing shall be fixed with the External finished surface (either stone cladding/external plaster) and hence all the necessary rubber strips, packing and poly-sulphide polymer (between the frame and concrete or other surface all around) shall be provided within the rate quoted so as to make the junctions fully water tight/air tight.

(d) Approved make selected glass of thickness as specified shall be used in doors. Wired glass louvers shall be provided wherever shown on drawings.

(e) Necessary locking arrangement of approved design (by Architect) shall be provided without any extra cost.

(f) Wherever necessary, PVC lining (silver grey or white only) etc. shall be provided for air/water tightness.

(g) Necessary operating device (as per design) for operation of louvers of windows, ventilators, sky lights, including necessary rods shall be provided without any extra cost.

(h) The rates quoted shall be inclusive of manufacture, supply and installation at Site, and inclusive of all the necessary accessories rubber strips, locks, rods, excise duty, taxes, transport, labour charges, insurance, storage and safe custody, etc. complete.

(i) The rates shall also be inclusive of providing and applying with gun as per latest I.S., of Dow Corning or equivalent and making the joints around glazing watertight, on the external periphery of the building at the junction of two different materials as directed by the Architect and site engineer.

(j) Necessary provision for rain water disposal shall be done in the bottom guides/frames as directed and approved by Architect.

(k) Work must be in accordance with detailed drawings with dimensions of aluminum sections in frames and shutters as shown in drawing. It shall be accompanied by the detailed drawing if any deviation is proposed.
(l) All the door shutters shall have double action hydraulic floor springs/hinges as per approved shop drawings, of approved make with minimum one year guarantee. The floor springs shall be of least possible thickness.
(m) Details/arrangements for after sales/maintenance services shall be furnished.
(n) Work shall be carried out in co-operation and in coordination with all other agencies working at Site.
(o) The civil work as required for fixing of floor springs, hold fast or other works required for the erection and completion of doors/windows etc. shall be done by the Contractor without any extra cost.
(p) Any damage, if caused to the existing work done by other agencies, shall be reinstated by the Contractor to its original condition without any extra cost.
(q) During the course of work, the Contractor shall pay due care to avoid any stains on the powder coating work and if required, the Contractors shall provide necessary protective arrangement as directed by the Architects for which no extra payments shall be made. After the installation is completed, if required by the Architects, the aluminum work shall be washed with mild solution of non-alkali soap and water.
(r) The Contractor shall be responsible for the windows/doors/grills etc. being set straight, in plumb level and for their satisfactory operations after the fixing is completed.
(s) Wherever required and as directed strengthening of members shall be done by providing steel/M.S. concealed members without extra cost.
(t) The door shutters may have hydraulic door closer of approved make with minimum one year guarantee as and where shown in the drawings and as directed.
Double scaffolding system (cup lock type) on the exterior side, up to seven story height made with 40 mm dia M.S. tube1.5 m center to center, horizontal & vertical tubes joining with cup & lock system with M.S. tubes,
M.S. tube challis, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it thereafter .The scaffolding system shall be stiffened with bracings, runners, connection with the building etc. wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer in- charge .The elevational area of the scaffolding shall be measured for payment purpose .The payment will be made once irrespective of duration of scaffolding.

Mode of measurement & payment:
The rate for window shutter with frame shall include the cost of materials &labour involved to finish the work.
The dimension of the window shall be measured clear size of the frame in closed position of shutter between the two outer edges of the frame.
The payment shall be made on completion of work.
The unit rate for the item shall be for a unit of **one square meter.**
Item No: 46

Renewing glass panes, with putty and nails wherever necessary including racking out the old putty:Float glass panes of nominal thickness 4 mm (weight not less than 10kg/sqm)

Removing Broken Glass Panes Old putty shall be raked out with hack knife. The brad (small nails without head) and pieces of broken glass shall be removed from the rebates of the sash bars. The pieces of glass panes as found useful shall be handed over to the Engineer-in-Charge of the work. No glass shall be inserted in frames until they have been primed and prepared for painting so that the wood may not draw oil out of the putty.

Floating Glass Panes The floating glass panes shall conform to specifications described in IS 14900.

Fixing

The floating glass panes shall be so cut that it fits slightly loose in the frame and as specified in A&B of IS 14900. A thin layer of Putty conforming to IS 419 shall be prepared by mixing one part of white lead with three parts of finely powdered chalk and then adding the boiled linseed oil to the mixture to form a stiff paste and adding varnish to the paste @ 1 litre of varnish to 18 kg. of paste. The putty so prepared in the form of a stiff paste shall be drawn along the inner edge of the rebate, for bedding the back of the glass panes. The glass pane shall then be put in position, pressed home against the thin layer of the putty, and secured in rebate by new brads. The brads shall not be spaced more than 7.5 cm from each corner and not more than 15 cm apart. The putty shall then be applied in the rebate uniformly, sloping from the inner edge of the rebate. In doing this care shall be taken to keep the putty a little within the inner edge of the rebate and surplus putty removed so that none of it is seen through the glass from the inside. The putty so filled in the rebates shall be leveled smooth and finished in a straight line. When dried the putty shall be covered with a coat of paint of approved quality and shade to match the existing finish of joinery work.

The floating glass panes shall be cleaned with methylated spirit. All splashings or droppings of washing and paints shall be removed. All rubbish and unserviceable materials shall be disposed off to the dumping ground promptly as per the direction of Engineer-in-Charge.

Thickness and Tolerance of Floating Glass

Thickness	Tolerance
4 mm	$\pm$ 0.3 mm
5 mm	$\pm$ 0.3 mm
6 mm	$\pm$ 0.3 mm

Note : Frosted glass panes should be replaced with frosted glass panes. These shall be fixed with frosted face on the inside.

Measurements Length and breadth of glass panes shall be measured correct to a cm. The area of the glass panes as fixed shall be calculated in square metre correct to two places of decimal. 589 SUB HEAD 14.0 : REPAIRS TO BUILDINGS

Rate The rate shall include the cost of labour and materials involved in all the operations described above

Item No: 47

Providing and fixing Metal suspension system for drainage pipe 50 mm -75mm ,110mm to 160 mm respectively ,pipe should be clamped using electro galvanized pipe hanger clamps of size according to the pipe dia in true horizontal level and proper alignment with desire slope by maintain spaces between pipes , pipe clamps directly screwed to mtrelectro galvanized threaded road which are then screwed to the anchor bolt with sleeves or plug which are fastened to the ceiling by mechanical equipment with care the holes are then injected with hilti chemical grouting, finishing & making good complete for all hights .making good to damage to the RCC will paid by contractor. zinc coated slotted strips of 400mm length are installed at the required space to support the system ,The work shall be carried out as per specifications of Indian standards of steel work & drawing and as per directions of the architect -in-Charge.all necessary hexagonal bolts lock nut, sleeves, rawl plug, dash fasteners, etc are included in above work. above single set of suspension system consisting of 4 diff size of pipe clamps , 4 theared road make ASHIRVAD, ASTRAL, HILTI or equivalent as approved and selection by architect
PART 1 GENERAL

SECTION INCLUDES
The work covered under this section consists of the furnishing of all necessary labor, supervision, materials, equipment, and services to completely execute the pipe hanger and supports as described in this specification.

REFERENCES
A.ASTM B633 - Specification for Electrodeposited Coatings of Zinc on Iron and Steel
B. ASTM A123 - Specification for Zinc (Hot-Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars, and Strip
ASTM A653 - Specification for Steel Sheet, Zinc-Coated by the Hot-Dip Process
ASTM A1011 – Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability *(Formerly ASTM A570)*
E.MSS SP58 - Manufacturers Standardization Society: Pipe Hangers and Supports- Materials, Design, and Manufacture
F.MSS SP69 - Manufacturers Standardization Society: Pipe Hangers and Supports- Selection and Application
G.NFPA 13 - Standard for the Installation of Sprinkler Systems
QUALITY ASSURANCE

A. Hangers and supports used in fire protection piping systems shall be listed and labeled by Underwriters Laboratories.
B. Steel pipe hangers and supports shall have the manufacturers name, part number, and applicable size stamped in the part itself for identification.
C. Hangers and supports shall be designed and manufactured in conformance with MSS SP 58.
D. Supports for sprinkler piping shall be in conformance with NFPA 13.

PRODUCTS
ACCEPTABLE MANUFACTURERS
A. Manufacturer: Subject to compliance with these specifications, pipe hanger and support systems shall be as manufactured by Cooper B-Line, Inc. [or engineer approved equal].
PIPE HANGERS AND SUPPORTS
A. Hangers
1. Uninsulated pipes 2 inch and smaller:
a. Adjustable steel swivel ring (band type) hanger, B-Line B3170.
b. Adjustable steel swivel J-hanger, B-Line B3690.
c. Malleable iron ring hanger, B-Line B3198R or hinged ring hanger, B3198H.
d. Malleable iron split-ring hanger with eye socket, B-Line B3173 with B3222.
e. Adjustable steel clevis hanger, B-Line B3104 or B3100

2. Uninsulated pipes 2-1/2 inch and larger:
a. Adjustable steel clevis hanger, B-Line B3100.
b. Pipe roll with sockets, B-Line B3114.
c. Adjustable steel yoke pipe roll, B-Line B3110.

3. Insulated pipe- Hot or steam piping:
a. 2 inch and smaller pipes: use adjustable steel clevis with galvanized sheet metal shield. B-Line B3100 with B3151 series.
b. 2-1/2 inch and larger pipes:

B. Pipe Clamp

1. When flexibility in the hanger assembly is required due to horizontal movement, use pipe clamps with weldless eye nuts, B-Line B3140 or B3142 with B3200. For insulated lines use double bolted pipe clamps, B-Line B3144 or B3146 with B3200.

C. Vertical Supports

1. Steel riser clamp sized to fit outside diameter of pipe, B-Line B3373.

D. Plastic Pipe Supports

1. V-Bottom clevis hanger with galvanized 18-gauge continuous support channel, B-Line B3106 and B3106V, to form a continuous support system for plastic pipe or flexible tubing

Supplementary Structural Supports

1. Design and fabricate supports using structural quality steel bolted framing materials as manufactured by Cooper B-Line. Channels shall be roll formed, 12 gauge ASTM A1011 SS Grade 33 steel, 1-5/8 inch by 1-5/8¤inch or greater as required by loading conditions. Submit designs for pipe tunnels, pipe galleries, etc., to engineer for approval. Use clamps and fittings designed for use with the strut system.

UPPER ATTACHMENTS

A. Beam Clamps

1. Beam clamps shall be used where piping is to be suspended from building steel. Clamp type shall be selected on the basis of load to be supported, and load configuration.
2. C-Clamps shall have locknuts and cup point set screws, B-Line B351L, or B3036L. Top flange c-clamps shall be used when attaching a hanger rod to the top flange of structural shapes, B-Line B3034 or B3033. Refer to manufacturers recommendation for setscrew torque. Retaining straps shall be used to maintain the clamps position on the beam where required.
3. Center loaded beam clamps shall be used where specified. Steel clamps shall be B-Line B3050, or B3055. Malleable iron or forged steel beam clamps with cross bolt shall be B-Line B3054 or B3291-B3297 Series as required to fit beams.

B. Concrete Inserts

1. Cast in place spot concrete inserts shall be used where applicable; either steel or malleable iron body, B-Line B2500 or B3014. Spot inserts shall allow for lateral adjustment and have means for attachment to forms. Select inserts to suit threaded hanger rod sizes, B-Line N2500 or B3014N series.
2. Continuous concrete inserts shall be used where applicable. Channels shall be 12 gauge, ASTM A1011 SS Grade 33 structural quality carbon steel, complete with styrofoam inserts and end caps with nail holes for attachment to forms. The continuous concrete insert shall have a load rating of 2,000 lbs/ft. in

concrete, B-Line B22I, 32I, or 52I. Select channel nuts suitable for strut and rod sizes.

VIBRATION ISOLATION AND SUPPORTS

A. For refrigeration, air conditioning, hydraulic, pneumatic, and other vibrating system applications, use a clamp that has a vibration dampening insert and a nylon inserted locknut. For copper and steel tubing use B-Line BVT series Vibraclamps, for pipe sizes use BVP series.
B. For larger tubing or piping subjected to vibration, use neoprene or spring hangers as required.
C. For base mounted equipment use vibration pads, molded neoprene mounts, or spring mounts as required.
D. Vibration isolation products as manufactured by B-Line, Vibratrol systems.

ACCESSORIES

A. Hanger Rods shall be threaded both ends, or continuous threaded rods of circular cross section. Use adjusting locknuts at upper attachments and hangers. No wire, chain, or perforated straps are allowed.
B. Shields shall be 180degree galvanized sheet metal, 12▫inch minimum length, 18 gauge minimum thickness, designed to match outside diameter of the insulated pipe, B-Line B3151.
C. Pipe protection saddles shall be formed from carbon steel, 1/8 inch minimum thickness, sized for insulation thickness. Saddles for pipe sizes greater than 12 inch shall have a center support rib.

FINISHES

A. Indoor Finishes
    1. Hangers and clamps for support of bare copper piping shall be coated with copper colored epoxy paint, B-Line Dura-Copper®. Additional PVC coating of the epoxy painted hanger shall be used where necessary.
    2. Hangers for other than bare copper pipe shall be zinc plated in accordance with ASTM B633 OR shall have an electro-deposited green epoxy finish, B-Line Dura-Green®.
    3. Strut channels shall be pre-galvanized in accordance with ASTM A653 SS Grade 33 G90 OR have an electro-deposited green epoxy finish, B-Line Dura-Green®.
B. Outdoor and Corrosive Area Finishes
    1. Hangers and strut located outdoors shall be hot dip galvanized after fabrication in accordance with ASTM A123. All hanger hardware shall be hot dip galvanized or stainless steel. Zinc plated hardware is not acceptable for outdoor or corrosive use.
    2. Hangers and strut located in corrosive areas shall be type 304 [316] stainless steel with stainless steel hardware.

EXECUTION

PIPE HANGERS AND SUPPORTS

A. Pipe shall be adequately supported by pipe hanger and supports specified in PART 2 PRODUCTS. Hangers for insulated pipes shall be sized to accommodate insulation thickness.

B. Horizontal steel piping shall be supported in accordance with MSS SP-69 Tables 3 and 4, excerpts of which follow below:

NOMINAL PIPE SIZE (INCHES)	ROD DIAMETER (INCHES)	MAXIMUM SPACING (FEET)
2	3/8	10
3	1/2	12
3-1/2	1/2	13
4	5/8	14
5	5/8	16
6	3/4	17

D. Provide means of preventing dissimilar metal contact such as plastic coated hangers, copper colored epoxy paint, or non adhesive isolation tape- B-Line Iso-pipe. Galvanized felt isolators sized for copper tubing may also be used, B-Line B3195CT.

E. Support horizontal cast iron pipe adjacent to each hub, with 5 feet maximum spacing between hangers.

F. Install hangers to provide a minimum of 1/2 inch space between finished covering and adjacent work.

G. Place a hanger within 12 inches of each horizontal elbow.

H. Support vertical piping independently of connected horizontal piping. Support vertical pipes at every [other] floor. Wherever possible, locate riser clamps directly below pipe couplings or shear lugs.

.Where several pipes can be installed in parallel and at the same elevation, provide trapeze hangers as specified in section 2.02 C. Trapeze hangers shall be spaced according to the smallest pipe size, or install intermediate supports according to schedule in section 3.01B.

J. Do not support piping from other pipes, ductwork or other equipment that is not building structure.

CONCRETE INSERTS

A. Provide inserts for placement in formwork before concrete is poured.

B. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.

C. Where concrete slabs form finished ceilings, provide inserts to be flush with slab surface.

D. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inch.

Item No: 48

METAL WORK- Providing, fabricating, transporting and fixing in position M.S. Structural Work (for Any Height) for all type of section for desired pattern , made up from MS Angle or L Sections, MS tubes, channel sections, flat, square bars, round bars, standard steel sections, fitted with necessary banding, welding, holdfast, M.S. hinges, gusset plate including all necessary fixtures & fastening, locking arrangement like anchor bolts or similar etc complete. as per drawing Rate including two or more coats of synthetic enamel paint over a primer of Zinc Chr. as per architectural dwg.(M.R)

MATERIALS

Micro-Alloying Elements Elements such as niobium, boron, vanadium and titanium added singly or in combination to obtain higher strength to weight ratio and better toughness, formability and weldability as compared to unalloyed steel of similar strength level.

Weldability

A metallic substance is considered to be weldable by a given process and for the given purpose, when metallic continuity to a stated degree can be obtained by welding using a suitable procedure, so that the joints comply with the requirements specified in regard to both their local properties and their influence on the construction of which they form a part.

Controlled Rolling

A hot rolling process in which the temperature of the steel and its reduction ratio are controlled, particularly during the final rolling passes, in order to achieve fine grain micro structure and optimum mechanical properties.

Normalizing Rolling

A hot rolling process in which the final rolling passes are carried out at a suitable higher temperature, followed by cooling in natural air to a temperature below the transformation temperature, in order to produce a structure, analogous to that obtained by a separate normalizing treatment of hot rolled product.

Steel

Supply of Material : General requirements relating to supply of structural steel shall conform to IS 8910.

Grades : There shall be nine grades of steel as given in Tables 10.1, and 10.2. (CPWD SPECIFICATIONS 2009) While placing the order the steel should be designated by 'Designation' (See Table 10.1 and 10.2).

Manufacture :

The processes used in the steel making and further hot rolling into steel plates, strips, sections, flats, bars, etc., are left to the discretion of the manufacturer/supplier. If required, secondary refining may follow steel making, as also normalizing rolling/controlled rolling during manufacturing of sections or as per the agreement between the purchaser and the manufacturer/ supplier.

Freedom from Defects

All finished materials shall be well and cleanly rolled to the dimensions, sections and masses specified. The finished material shall be reasonably free from surface flaws; laminations; rough/ jagged and imperfect edges and all other harmful defects.

Minor surface defects may be removed by the manufacturer/supplier by grinding provided the thickness is not reduced locally by more than 4 percent below the minimum specified thickness. Reduction in thickness by grinding greater than 4 percent but not exceeding 7 percent may be made subject to mutual agreement between the purchaser and manufacturer/supplier.

Subject to agreement with the purchaser, surface defects which cannot be dealt with as in repaired by chipping or grinding followed by welding and inspection by a mutually agreed procedure such that :

(a) After complete removal of the defects and before welding, the thickness of the item is not to be reduced by more than 20 percent at any place.
(b) Welding is carried out by procedure APPROVED by competent authority with approved electrodes and the welding is ground smooth to the correct nominal thickness; and
(c) Subsequent to the finish grinding, the item may be required to be normalized or otherwise heattreated at the purchaser's discretion

STEEL WORK

Chemical Composition :
Ladle Analysis the ladle analysis of the steel, when carried out by the method specified in the relevant part of IS 228 or any other established instrumental /chemical method, shall be as given in Table 10.1. In case of dispute, the procedure given in IS 228 and its relevant parts shall be the referee method and where test methods are not specified shall be as agreed to between the purchaser and the manufacturer/supplier.

Rivets
Rivets shall be made from rivet bars of mild steel as per IS 1148.

Bolts
These are of two types namely turned and fitted bolts and black bolts. Turned & fitted bolts are turned to exact diameter in automatic lathe. For these bolts, whether reamed or drilled bolts, the same unit stresses are allowed as for rivets. In case of black bolts which are not finished to exact sizes, a lower working stress other than for turned bolts is adopted. They shall conform to IS 1367 – Technical supply conditions for threaded steel fasteners.

Electrodes
The electrodes required for metal arc welding shall be covered electrodes and shall conform to IS 814.

STEEL WORK IN SINGLE SECTION FIXED INDEPENDENTLY WITH CONNECTING PLATE

The steel work in single section of R.S. joists, flats, Tees Angles fixed independently with or without connecting plate, is described in these clauses.

Fabrication
The steel sections as specified shall be straightened and cut square to correct lengths and measured with a steel tape. The cut ends exposed to view shall be finished smooth. No two pieces shall be welded or otherwise jointed to make up the required length of member. All straightening and shaping to form, shall be done by pressure. Bending or cutting shall be carried out in such a manner as not to impair the strength of the metal.

Painting
All surfaces which are to be painted, oiled or otherwise treated shall be dry and thoroughly cleaned to remove all loose scale and loose rust. Surfaces not in contact but inaccessible after shop assembly, shall receive the full specified protective treatment before assembly. This does not apply to the interior of sealed hollow sections. Part to be encased in concrete shall not be painted or oiled. A priming coat of approved steel primer such as Red Oxide/Zinc Chromate primer conforming to IS 2074 shall be applied before any member of steel structure are placed in position or taken out of workshop

Erection
Steel work shall be hoisted and placed in position carefully without any damage to itself and other building work and injury to workmen. Where necessary mechanical appliances such as lifting tackle winch etc. shall be used. The suitability and capacity of all plant and equipment used for erection shall be upto the satisfaction of the Engineer-in-charge.

Measurements
The work as fixed in place shall be measured in running metres correct to a millimetre and weights calculated on the basis of standard tables correct to the nearest kilogram. The standard weight of steel sections shall conform to IS 808 with tolerance in sizes as per IS 1852. Tolerance in weight is given in Table 10.3. Steel sections shall be acceptable within tolerance limits. Payment for steel sections shall be made as per actual weight within tolerances. Sections having weight on higher side than permissible CPWD SPECIFICATIONS 2009 402 tolerance, may be acceptable but payment shall be made on the basis of standard weight only. Steel sections having weight variations lower side than permissible variation shall not be acceptable. Unless otherwise specified, weight of cleats, brackets, packing pieces, bolts, nuts, washers, distance pieces, separaters, diaphgram gussets (taking overall square dimension) fish plates, etc. shall be added to the weight of respective items. In riveted work allowance is to be made for weight of rivet heads. Unless otherwise specified an addition of 2.5% of the weight of structure shall be made for shop and site rivet heads in riveted steel structures. No deduction shall be made for rivet/ or bolt holes (excluding holes for anchor or holding down bolts). Deduction in case of rivet or bolt hole shall however be made if its area exceeds 0.02 sqm. The weight of steel sheets, plates and strips shall be taken from relevant Indian standards based on 7.85 Kg/m2 for every millimetre sheet thickness. For rolled sections, steel rods and steel strips, weight given in relevant Indian Standards shall be used.

Rate
Rate includes the cost of labour and materials required for all the operations described above.

Item No: 49

Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm center to center and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanized butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed

width of 24 mm of all Tsections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by architect-in-charge.

G.I. METAL TILES CEILING

Frame The frame work shall consists of G.I spring tee of specified size fixed to main C carrier with the help of suspension Brackets. The frame work shall be executed in a manner so as to form a grid of 600 mm x 600 mm as specified in the item. The pre-painted steel 'C' wall angle of size 20x30x20 mm and 0.5mm thick shall be fixed along the periphery of the room with nylon sleeves and wooden screws at 300 mm center to center. The main 'C' carrier of size 10x38x10 mm made of G.I steel 0.7 mm thick shall be fixed with cleats of size 37x27x25x1.6 mm and rawl plugs of size 38x12 mm.

Carrier Details: Carrier, 28 mm wide at the bottom x 43 mm deep formed out of 0.50 mm thick galvanized steel sheet stove enameled black with protruding ears to hold the panels in a module of 100 mm. Installation Details: The carrier shall be suspended from slab by 4 mm dial galvanized rod with special height adjustment powder coated clips made out of spring steel at maximum 1.2 to 1.5 mtr. Centre to centre. The 4mm dia galvanized rod shall be fixed to slab by forming one end "J" shape with roll inserts. The edge profile formed out of G. I. Sheet of the size 18 mm x 20 mm shall be fixed on the perimeter of the walls.

Ceiling tiles Ceiling tiles shall be of G.I metal plain beveled of specified white color of size 600x600 mm and 0.5 mm thick with 25 mm height made of G.I. sheet having galvanizing of 100 gms/sqm and electro statically polyester powder coated of minimum 60 microns thickness including factory painted after bending with or without perforation.

Fixing of ceiling tiles The ceiling tiles shall be placed over the G.I frame and clip-in with frame.

Measurements These shall be the same as under 12.19.4.

Rate The rate shall include the cost of all the materials and labour involved in all the operations described above including scaffolding etc.

Item No: 50

Applying priming coat: With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanized iron/ steel works make deluxe or equivalent as approved and selection by architect

Primer

The primer for wood work, iron work or plastered surface shall be as specified in the description of item

Surfaces	Primer to be used
Iron, Steel and Galvanized steel	Red Oxide Zinc chromate Primer conforming IS 2074
Cement/Conc/RCC/brick work, Plastered surfaces, non-asbestos surfaces to receive Oil bound distemper or Paint finish	Cement primer conforming to IS 109

The primer shall be ready mixed primer of approved brand and manufacture.

Where primer for wood work is specified to be mixed at site, it shall be prepared from a mixture of red lead, white lead and double boiled linseed oil in the ratio of 0.7 kg : 0.7 kg : 1 litre.

Where primer for steel work is specified to be mixed at site, it shall be prepared from a mixture of red lead, raw linseed oil and turpentine in the ratio of 2.8 kg : 1 litre : 1 litre.

The specifications for the base vehicle and thinner for mixed on site primer shall be as follows:

(a) White Lead : The White lead shall be pure and free from adulterants like barium sulphate and whiting. It shall conform to IS 103.

(b) Red Lead : This shall be in powder form and shall be pure and free from adulterants like brick dust etc. It shall conform to IS 102.

(c) Raw Linseed Oil : Raw linseed oil shall be lightly viscous but clear and of yellowish colour with light brown tinge. Its specific gravity at a temperature of 30 degree C shall be between 0.923 and 0.928.

Note : The oil shall be mellow and sweet to the taste with very little smell. The oil shall be of sufficiently matured quality. Oil turbid or thick, with acid and bitter taste and rancid odour and which remains sticky for a considerable time shall be rejected. The oil shall conform in all respects to IS 75. The oil shall be of approved brand and manufacture.

(d) Double Boiled Linseed Oil : This shall be more viscous than the raw oil, have a deeper colour and specific gravity between 0.931 and 0.945 at a temperature of 30 degree C. It shall dry with a glossy surface. It shall conform in all respects to IS 77. The oil shall be of approved brand and manufacture.
563 SUB HEAD 13.0 : FINISHING

Turpentine : Mineral turpentine i.e. petroleum distillate which has the same rate of evaporation as vegetable turpentine (distillate product of oleeresin of conifers) shall be used. It shall have no grease or other residue when allowed to evaporate. It shall conform to IS 533.

All the above materials shall be of approved manufacture and brought to site in their original packing in sealed condition.

Preparation of Surface

Wooden Surface : The wood work to be painted shall be dry and free from moisture. The surface shall be thoroughly cleaned. All unevenness shall be rubbed down smooth with sand paper and shall be well dusted. Knots, if any shall be covered with preparation of red lead made by grinding red lead in water and mixing with strong glue sized and used hot.

Appropriate filler material conforming to IS 345 with same shade as Paint shall be used where specified. The surface treated for knotting shall be dry before Paint is applied. After obtaining approval of Engineer-in-Charge for wood work, the priming coat shall be applied before the wood work is fixed in position. After the priming coat is applied, the holes and indentation on the surface shall be stopped with glazier's putty or wood putty. Stopping shall not be done before the priming coat is applied as the wood will absorb the oil in stopping and the latter is therefore liable to crack.

Iron & Steel Surface : All rust and scales shall be removed by scrapping or by brushing with steel wire brushes. Hard skin of oxide formed on the surface of wrought iron during rolling which becomes loose by rusting, shall be removed.

All dust and dirt shall be thoroughly wiped away from the surface.

If the surface is wet, it shall be dried before priming coat is undertaken.

Plastered Surface : The surface shall ordinarily not be painted until it has dried completely. Trial patches of primer shall be laid at intervals and where drying is satisfactory, painting shall then be taken in hand. Before primer is applied, holes and undulations, shall be filled up with plaster of paris and rubbed smooth.

Application The primer shall be applied with brushes, worked well into the surface and spread even and smooth. The painting shall be done by crossing and laying off as described in BOQ

Treatment on Steel for Aggressive Environment

A second coat of ready mixed red oxide zinc chromate primer may be applied where considered necessary in aggressive environment such as near Industrial Establishment and Coastal regions where the steel members are prone to corrosion. The second coat (which shall be paid for separately) is to be applied after placing the member in position and just before applying Paint. The second coat of primer is not necessary in case of painting with synthetic enamel Paint as it is applied over an under coat of ordinary Paint.

Item No: 51

Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @ 0.80 ltr/10 sqm of approved brand and manufacture.

Synthetic enamel Paint, suitable for painting over G.S. sheets, of approved brand and manufacture and of the required shade shall be used. New or weathered G.S. sheets shall be painted with a priming coat of one coat of redoxide zinc chromate Paint. Primer shall be applied before fixing sheets in place

Painting Old Surface:

If the old Paint is firm and sound, it shall be cleaned of grease, smoke etc. The surface shall then be rubbed down with sand paper and dusted. Rusty patches shall be cleaned up and touched with synthetic enamel paint.

If the old Paint is blistered and flaked, it shall be completely removed as described in 13.41. Such removal shall be paid for separately and painting shall be treated as on new work.

Application

The number of coats to be applied shall be as in the description of item. In the case of C.G.S. sheets, the crowns of the corrugations shall be painted first and when these get dried the general coat shall be given to ensure uniform finish over the entire surface without the crowns showing signs of thinning.

The second or additional coats shall be applied when the previous coat has dried.

The specifications described in 13.23 shall hold good so far as they are applicable.

Item No: 52

Scraping oil paint from steel and other metal surface and making the surface even (with Hand Scraping.)

REMOVING OLD PAINT

With Patent Paint Remover

Patent Paint removers shall consist of volatile organic liquids thickened with waxes and other ingredients to retard the evaporation of the liquid and to enable a substantial layer of remover to be applied to the surface. The Paint remover shall be of a brand and manufacture approved by the Engineer-in-Charge. It shall be free from alkaline matter and non-caustic so that it can be handled by workmen without injury. It shall be of non inflammable quality as far as possible.

Application : Paint remover shall be used where burning off with blow lamp is not suitable. The Paint remover shall be applied liberally with a brush and allowed to remain on the surface for a period depending on the particular brand of remover used and on the thickness of the Paint coating to be removed. When the Paint film lifts and wrinkles under the action of the remover it shall be stripped with a sharp instrument. If the film is not thoroughly removed a second coat of remover may be applied if necessary over such patches and then the film thoroughly scrapped.

After the surface has been stripped, it shall be washed down with mineral turpentine to remove all traces of paraffin wax, which forms one of the ingredients of patent Paint remover and which if left in place will prevent the Paint from drying.

The cleaned surface shall be suitably prepared for application of Paint or other finish.

Precautions : Where the Paint remover used is of the inflammable type, suitable precaution against risk of fire shall be taken.

Neighboring painted surfaces which are not to be treated should be properly protected from contact with Paint remover.

Preparation of Surface : The surface shall then be prepared as described in 13.24.2.

Measurements : Specification for 13.23.6 shall hold good.

Rate : Rate shall include the cost of all labour and materials involved in all operations described above.

Item No: 53,54

Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.

CEMENT PRIMER COAT

Cement primer coat is used as a base coat on wall finish of cement, lime or lime cement plaster or on non-asbestos cement surfaces before oil emulsion distemper Paints are applied on them. The cement primer is composed of a medium and pigment which are resistant to the alkalies present in the cement, lime or lime cement in wall finish and provides a barrier for the protection of subsequent coats of oil emulsion distemper Paints.

Primer coat shall be preferably applied by brushing and not by spraying. Hurried priming shall be avoided particularly on absorbent surfaces. New plaster patches in old work should also be treated with cement primer before applying oil emulsion Paints etc.

Preparation of the Surface The surface shall be thoroughly cleaned of dust, old white or colour wash by washing and scrubbing. The surface shall then be allowed to dry for at least 48 hours. It shall then be sand papered to give a smooth and even surface. Any uneveness shall be made good by applying putty, made of plaster of paris mixed with water on the entire surface including filling up the undulations and then sand papering the same after it is dry.

Application The cement primer shall be applied with a brush on the clean dry and smooth surface. Horizontal strokes shall be given first and vertical strokes shall be applied immediately afterwards. This entire operation will constitute one coat. The surface shall be finished as uniformly as possible leaving no brush marks. It shall be allowed to dry for at least 48 hours, before oil emulsion Paint is applied.

The Specifications in respect of scaffolding, protective measures, measurements and rate shall be as described under 13.1.4.

Item No: 55

Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour. Two coats make deluxe or equivalent as approved and selection by architect

Wall painting with Acrylic Emulsion Paint (Interior / Exterior Walls) Material 17.16.1 The Acrylic emulsion paint shall be of manufacturer as indicated or as approved by GE and of premium quality. The paint shall be 100% Acrylic and semi Acrylic paint shall not be used in the work.

Preparation of Surfaces
The surfaces to be applied with Acrylic emulsion paint shall be cleaned to remove loose dirt or dust, lichen, algae, fungi or any organic growth by use of stiff brush. Then the surface is washed well and allows water to dry. All cracks, voids and minor damages shall be patched/ repaired prior to application of paint with white cement putty or with Plaster of Paris. In case of old surfaces where excessive fungal/ algal growth is observed the surface should be bio washed as per manufacturer's instructions. This product is diluted in water before application as per manufacturer instructions and shall be applied with brush. The coat of bio wash shall be allowed to dry for 12-24 hours and then washed with clean water. Allow the wall to dry before it is ready for painting.
Primer Coat
Over this prepared surface apply a coat of acrylic primer as per manufacturer's instructions. This shall be allowed to dry for 4 to 6 hours before application of final paint.

Finishing Coat
Acrylic paint of premium quality 100% Acrylic shall be applied in at least two coats as per manufacturer instructions. The Acrylic paint shall be prepared as per manufacturer's instructions by adding water in

Item No: 55

Refer specification of item-51

Item No: 57

Melamine polishing on wood work (one or more coat). make deluxe or equivalent as approved and selection by architect

Polishing Old Surface

Preparation of Surface : If the old polished surface is not much soiled it shall be cleaned of grease and dirt by rubbing with turpentine and then rubbed with fine sand paper.

If the old polished surface is much soiled then it will be necessary to remove the entire polish as described in 13.41 and such removal shall be paid for separately outside the rate of polishing. Further the polishing itself will have to do done like new work and will be paid for as such.

Application : The specifications shall be same as described in 13.38.2.2 as far as applicable.

Measurements, Rate and other details shall be as specified in 13.23 as far as they are applicable.

ELECTRICAL WORK

Item No: 58,59,61 (check)

Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA polyester powder coated and high U.V. & corrosion resistance with diffuser and/or Polycarbonate optics with company mark/name 120 to 300 V, Power Factor more than 0.9, THD < 10%, CCT 4000 K to 6500K, Uniformity ratio >0.7,Luminaire efficacy> 85 lumens/watt ,LED driver efficiency > 85 %CREE / OSRAM / PHILIPS Lumileds / NICHIA / SEOUL/Bridgelux(U.S.A.) make LED used for luminaire. (Each fitting required LM-79 & LM-80 Certificates)

1. **APPLICABLE IS STANDARDS AND VARIOUS CODES FOR ELECTRICAL WORKS**

A. APPLICABLE IS STANDARDS VARIOUS CODES

1. METERS (MEASURING) FOR ANALOG METERS IS:1248-1986
2. INSTALLATION AND MAINTENANCE OF SWITCH GEARS IS:3072-1975
3. CODE OF PRACTICE FOR EARTHING IS:3043
4. H.D. AIR BREAKER, SWITCH GEARS AND FUSES FOR VOLTAGE NOT EXCEEDING 1000 VOLTS IS:4047-1977
5. SELECTION, INSTALLATION AND MAINTENANCE OF FUSES IS:8106-1966 UP TO 650 VOLTS
6. GENERAL REQUIREMENTS FOR SWITCH GEAR AND IS:4237-1967 GEAR FOR VOLTAGE NOT EXCEEDING1000 VOLTS
7. DEGREE OF PROTECTION PROVIDED BY ENCLOSURES FOR LV S/GEARS IS:2147-1962
8. INSULATED CONDUCTOR RATING IS:8084-1972
9. ENCLOSED DISTRIBUTION FUSE BOARDS AND CUT-OUTS FOR VOLTAGE NOT EXCEEDING 1000 VOLTS IS:2675-1983
10. MINIATURE CIRCUITBREAKER IS:8828-1978
11. FUSE WIRE USED IN RE-WEARABLE TYPE ELECTRIC FUSES UP TO 650 VOLTS IS:9926-1981
12. PVC INSULATED ELECTRIC CABLES HEAVY DUTY IS:1554 (PART I)
13. RECOMMENDED CURRENT RATING FOR CABLES IS:3961(PART II)

14. COPPER CONDUCTOR IN INSULATED CABLES AND CORES IS:2982 15. CONDUCTOR FOR INSULATED ELECTRIC CABLES AND
FLEXIBLE CORDS IS:8130
16. MILD STEEL WIRES, STRIPS AND TAPES FOR ARMOURING CABLES IS:3975
17. PVC INSULATION AND SHEATH OF ELECTRIC CABLES IS:5831
18. ALUMINIUM CONDUCTOR FOR INSULATED CABLES IS:1753 PVC INSULATED AND PVC SHEATHED SOLID ALUMINIUM IS:4288 CONDUCTOR CABLES OF VOLTAGE RATING NOT EXCEEDING 1100 VOLTS
20. RECOMMENDED CURRENT RATING FOR CABLE IS: 961
21. CODE OF PRACTICE FOR ELECTRICAL WIRING INSTALLATION SYSTEM VOLTAGE NOT EXCEEDING 650 IS: 732 VOLTS
22. CODE OF PRACTICE FOR FIRE SAFETY OF BUILDINGS GENERAL)ELECTRICAL INSTALLATION IS: 1646
23. RIGID STEEL CONDUITS FOR ELECTRICAL WIRING IS:1653
24. FITTINGS FOR RIGID STEEL CONDUITS FOR ELECTRICAL IS:2667 WIRING
25. FLEXIBLE STEEL CONDUIT FOR ELECTRICAL WIRING IS:3480
26. ACCESSORIES FOR RIGID STEEL CONDUITS FOR IS:3837 ELECTRICAL WIRING
27. PVC INSULATED CABLES (WIRES) IS:694
28. RIGID NON-METALLIC CONDUITS FOR ELECTRICAL WIRING IS:2509 FLEXIBLE (PLAYABLE) NON-METALLIC CONDUITS FOR IS:6946 ELECTRICAL INSTALLATION
30. THREE PIN PLUGS AND SOCKETS IS:1293 CONDUCTORS FOR INSULATED ELECTRICAL CABLES AND IS:8180 FLEXIBLE CODES 32. SPECIFICATION FOR CONDUIT FOR ELECTRICAL INSTALLATION IS:9537-1980
33. ACCESSORIES FOR NON-METALLIC CONDUITS FOR
ELECTRICAL WIRING IS:3419
34. SWITCHES7 IS:3854
35. PLUGS IS:6538
36. SHUNT CAPACITORS FOR POWER SYSTEMS IS:2834-1954
37. HRC CARTRIDGE FUSES AND LINKS UP TO 660 VOLTS IS:2208
38. GENERAL AND SAFETY REQUIREMENT FOR LIGHTING
FITTINGS IS:1913-1969
39. CODE OF PRACTICE FOR LIGHTING PUBLIC THOROUGH
FARES IS:2944-1981
40. WATERPROOF ELECTRIC LIGHTING FITTINGS IS:3528
41. WATER TIGHT ELECTRIC LIGHTING FITTING IS:3553-1966
42. MILD STEEL TUBULAR AND OTHER WROUGHT STEEL PIPE
FITTING IS:1239-1958
43. LUMINARIES FOR STREET LIGHT IS:2149-1970
44. HRC FUSES HAVING RUPTURING CAPACITY OF 90 KA IS:9224
45. EXHAUST FAN IS:2312-1967 46. CLASS I CEILING FAN IS:374-1979 47. DANGER NOTICE BOARDS IS: 2551

NOTE :

All codes and standards means the latest where not specified otherwise the installation shall generally follow the Indian Standard codes of practice or relevant British Standard Codes of Practice in the absence of corresponding Indian Standards.

PLEASE FOLLOW :

a. Indian Electricity Act of 1910 and rules issued there under revised up to date.

b. Special Attention should be given to Rule No. 50.

c. Regulations for electrical equipment in building issued by The Bombay Regional Council of insurance Association of India.

2 INTERNAL WIRING

A. SPECIFICATIONS

RIGID PVC AND FLEXIBLE PVC FRLS LHSFT CONDUITS:

All conduits shall be rigid PVC alloy low in halogens pipe having minimum wall thickness of medium gauge 1.6 to 2.0 approved by F.I.A. & I.S.I. and shall confirm to IS 9537 part 3 and complying with fire safety standards classification V-0. The temperature stability shall be from – 20oc - +80oc and also shall be uVstabilised. Up to 38 mm diameter in slab - minimum 1.8 mm wall thickness. Up to 38 mm diameter in floor - minimum 2.0 mm Wall thickness. Above 40 mm. diameter - minimum 2.2 mm. wall thickness.
Flexible conduits shall be formed from a continuous length of spirally wound interlocked steel strip with a fused zinc coating on both sides. The conduit shall be terminated in brass adapters.

ACCESSORIES:
PVC conduit fittings such as bends, elbows, reducers, chase nipples, split couplings, plugs etc. shall be specifically designed and manufactured for their particular application. All conduit fittings shall conform to IS: 2667-1964 and IS: 3857-1966. All fitting associated with galvanized conduit shall also be galvanized.

WIRES:
All wires shall be single core multi-strand/ flexible copper or single strand Copper (if specified in BOQ), PVC insulated FRLS grade as per IS: 694 and shall be 660 V\1100 V.
All wires shall be colour coded as follows:

Phase	**Colour of wire**
R	Red
Y	Yellow
B	Blue
N	Black
Earth	Green (insulated)
Control (If any)	Grey
All off wires	Same as Phase wire

SWITCHES & SOCKETS:

Switches shall be modular type with silver-coated contacts. Sockets shall be 5 pins with switch and plate type cover. Combination of multiple switch units and sockets should be used to minimize the switch boxes.

For heavy duty, metal clad sockets with M.C.B / Isolator mounted in a galvanized steel box shall be provided.

SWITCH PLATE AND BOX:

Platesof the same make, as that of switches shall be used with the modular range. Also M.S. boxes shall be taken as switch boxes.

B. WORKMANSHIP

The size of conduit shall be selected in accordance with the number of wires permitted under table given below. The minimum size of the conduit shall be 25 mm diameter unless otherwise indicated or approved.

Size of wires shall not be less than 1.5 sq.mm. Copper.

Nominal Dia of wires	Nominal Cross sec. Area	20 mm		25 mm		32 mm		38 mm	
(mm)	(mm^2)	S	B	S	B	S	B	S	B
1/2.40	1.50	4	3	8	6	15	9	--	--
1/1.80	2.50	4	2	6	4	10	8	--	--
1/2.24	4.00	2	2	4	3	8	6	--	--
1/2.80	6.00	1	--	4	3	6	6	--	--
1/3.55	10.00	1	--	3	2	5	4	6	5

S - runs of conduits which have distance not exceeding 4.25 m. between draw boxes & which do not deflect from the straight by an angle more than 15 degree.

B - runs of conduits, which deflect, from the straight by more than 15°.

Conduits shall be kept at a minimum distance of 100 mm. from the pipes of other non-electrical services. And maintain minimum 200-300 mm distance between telephones, TV & Computer piping.

Separate conduits/raceways shall be used for :

Normal lights and5 A 3 pin sockets on lighting circuit. Separate conduit shall be laid from D.B. to switch board. Power outlets - 15 A 3 pin 20 A/30 A, 2 pin scraping earth metal clad sockets. Emergency lighting. Telephones. Fire alarm system. Public address system & Musicsystem. For all other voltages higher or lower than 230 V. T.V. Antenna. Water level guard. Computer Wiring

Wiring for short extensions to outlets in hung ceiling or to vibrating equipments, motors etc., shall be installed in flexible conduits. Otherwise rigid conduits shall be used. No flexible extension shall exceed 1.25 m.

Conduits run on surfaces shall be supported on metal 12 mm. thick G.I. pressure saddles which in turn are properly screwed to the wall or ceiling. Saddles shall be at intervals of not more than 500 mm. Fixing screws shall be with round or cheese head and of rust-proof materials. Exposed conduits shall be neatly run parallel or at right angles to the walls of the building. Unseemly conduit bends and offsets shall be avoided by using fabricated mild steel junction/pull through boxes for better appearances. No cross-over of conduits shall be allowed unless it is necessary and entire conduit installation shall be clean and neat in appearance.

Conduits embedded into the walls shall be fixed by means of staples at not more than 500 mm. intervals. Chases in the walls shall be neatly made and refilled after laying the conduit and brought to the finish of the wall but the building Contractor will do final finish.

Conduits buried in concrete structure shall be put in position and securely fastened to the reinforcement and got approved by the CLIENT AND/OR ITS ARCHITECT, before the concrete is poured. Proper care shall be taken to ensure that the conduits are neither dislocated nor choked at the time of pouring the concrete suitable fish wires shall be drawn in all conduits before they are embedded.

Where conduit passes through expansion joints in the building, adequate expansion fittings shall be used to take care of any relativemovement.

Inspection boxes shall be provided for periodical inspection to facilitate withdrawal and removal of wires. Such inspection boxes shall be flush with the wall or ceiling in the case of concealed conduits. Inspection boxes shall be spaced at notmore than 12 meters apart or two 90° solid bends or equal. All junction and switch boxes shall be covered by 6 mm clear plate. These junction boxes shall form part of point wiring or conduit wiring as the case may be including the cost of removing the cover for painting and re-fixing. No separate charges shall be allowed except where specially mentioned.

Conduits shall be free from sharp edges and burrs and the threading free from grease or oil. The entire system of conduits must be completely installed and rendered electrically continuous before the conductors are pulled in. Conduits should terminate in junction boxes of not less than 32 mm. deep.

An insulated earth wire of copper rated capacity shall be run in each conduit.

Lighting & Power Wiring:

All final branch circuits for lighting and appliances shall be single conductor/ stranded/ flexible wires run inside conduits. The conduit shall be properly connected or jointed into sockets, bends, and junction boxes.

Branch circuit conductor sizesshall be as shown in the schedule of quantities and or drawings.

All circuits shall preferably be kept in a separate conduit up to the Distribution Board. No other wiring shall be bunched in the same conduit except those belonging to the same phase. Each lighting branch circuit shall not have more than ten outlets or 800 watts whichever is lower. Each conduit shall not hold more than three branch circuits.

Flexible cords for connection to appliances, fans and pendants shall be 650/1100 V grade (three or four cores i.e. with insulated neutral wire of same size) with tinned stranded copper wires, insulated,

Twisted and sheathed with strengthening cord. Colour of sheath shall be subject to the CLIENT AND/OR ITS ARCHITECT'S approval.

Looping system of wiring shall be used. Wires shall not be jointed. Where joints are unavoidable, they shall be made through approved mechanical connectors. No such joints shall be made unless the length of the sub-circuit, sub-main or main is more than the length of the standard coil.

Control switches shall be connected in the phase conductors only and shall be `ON' when knob is down. Switches shall be fixed in 3 mm. thick painted or galvanized steel boxes with cover plates as specified. Cadmium plated brass screws shall be used.

Power wiring shall be distinctly separate from lighting wiring. Conduits not less than 25 mm. and wires not less than 2.5 sq.mm. copper shall be used.

Every conductor shall be provided with identification ferrules at both ends matching the drawings. Testing: the entire installation shall be tested for :

Insulation resistance. Earth continuity. Polarity of single pole switches.3

General: All the wiring switch board, outlet points shall be done in a concealed manner in wall &slab in PVC conduit of minimum 25 mm dia. (medium gauge) & with 650v / 1100v grade PVC insulated flexible copper conductor wire. The switches should be modular with molded cover plates, blank plates for outlet boxes. The accessories, connectors, sockets, should be fixed with brass chrome / cadmium plated machine screw. For fan points the rates should be with hum -free type 300 W regulators as required to complete the point wiring. The wiring shall be as per IS: 732 and IS: 4648. The wiring shall be done in a looping manner so as to avoid junction boxes at any place. All the looping shall be done only in the switchboard and outlet points. The size of the wire shall be as per the specification. Colour code shall be strictly followed.

The size of wires shall as follow :

25-32 Amp. metal clad points: Phase / Neutral 6.0 mm2 Earth 4.0 m m2

20 Amp. out let points : Phase / Neutral 4.0 m m2 Earth 2.5 m m2

Two nos. of 15 Amps. Socket out let connected in parallel from DB to first outlet

Phase /Neutral 4.0 m m2 Earth 2.5 m m2

from first outlet to second outlet. Phase / Neutral 2.5 m m2 Earth 2.5 m m2

Light, fans, exhaust fan, 5 Amp. On board plug point, two way light points, bell point etc from switch to outlet. Phase / Neutral 1.5 m m2 Earth 1.5 m m2 FromD.B. to switch board – lighting / 5 A socket etc – i.e. circuit mains part of point wiring Phase / Neutral 2.5 m m2 Earth 2.5 m m2

15/20 Amps. Socket outlet for AC (Single Phase/Three Phase) / Geyser Phase / Neutral 4.0 m m2 Earth 2.5 m m2

15/20 Amps. Socket outlet for appliances or looped from sockets with 4 sq mm ckt. Phase / Neutral 2.5 m m2 Earth 2.5 m m2

Separate pipes shall be laid for off wires and circuit mains.

Circuit mains of same phase shall be drawn in one pipe with prior permission/discussion with the consultant.

Separate phase, neutral and earthing wire of sizes recommended by consultant shall be drawn for each and every circuit mains.

Mains for lighting and on board plug points shall be of one-size higher wires than those used in off.

The point definition shall be conducing and wiring from D.B. to S.B. and there from to final outlet point including switches and accessories, junction boxes, fan boxes, zarri work with cement –sand etc of Proposed make.

C. MODE OF MEASUREMENT

The items shall be measured on unit basis or on mtr basis as per BOQ.

LIGHT FIXTURES

A. SPECIFICATIONS

Light fixtures as mentioned in the BOQ with the catalogue nos and makes shall be installed. The fixtures shall be complete with ballast and shall be prewired by the manufacturer. Fans of the Proposed makes and size shown in the drawing shall be used and install in the hook type
M.S. box used by the CLIENT.

WORKMANSHIP

The fixture shall be installed on wall / ceiling as directed and as per manufacturer's instruction, with necessary accessories for surface, concealed, suspended from ceiling, bracket mounting etc. The job also includes connection of fixture with respective outlet point with heat resistant wires through heat resistance sleeve and PVC connector. The exhaust fan shall be installed complete with M.S. angle iron mounting frame/ ring, G.I. louvers, wire mesh and plug at the end of the cord including wiring &earthing etc. Proper earthing shall beprovided to the fixtures
MODE OFMEASUREMENT

The unit rate shall be considered for fitting one fixture. The rate shall include following All fixing accessories, mounting bracket, ballast condensers and control gear wherever applicable. Supplying andfixing Ball and socket joints wherever required. Earthing of fittings.

Electrical connections to fittings/fans from the junction box/ceiling rose. Installation and interconnection of Electronic regulators for ceiling fans. Supplying and fixing 300 mm. GI down rod for ceiling fans.

Item No: 60

CIRCULAR INLINE FAN(CHECK)

Description

Exhaust Fan should comply with IS: 2312-1967.

- Inline centrifugal duct fan is a straight through radial fan. It is compact, with a high capacity and very easy to install. The fan can cope with high pressure and long duct runs, whilst still operating at an acceptable sound level.
- The fan speed can be controlled by voltage or frequency variation regulators. Several fans can be connected to the same controller provided the total nominal current of the fans does not exceed the rating of controller.

- The Circular Inline fans are moisture resistant and are approved for installing in humid or damp environments. The fans are rated IP44 when installed in a duct system. They must not be used for transporting grinding dust, soot or similar air borne particles. The casing is manufactured from pre-galvanized steel. Automatic thermo-contacts open if the temperature within the motor windings becomes excessive. Fan is equipped with CE certified external rotor single phase asynchronous motor.

Structure:

- Motor – Adopted by single-phrase asynchronous external rotor motor. The motor and impeller are directly pressed together by machine, so that can reduce the fan's cubage, stay stable performance with high efficiency and long durability.
- Impeller – Backward-curved impeller matches well with the metal housing to maximize the air flow and efficiency, and to minimize the noise level.
- Abs plastic housing – Use fine material (quality deep-material to stretching by machine. Spraying painted surface has strong resistance. Computerized fluid-channel design makes maximum efficiency for the impeller.
- Power box – Metal power box. Quality fire-proof, safety for usage. And easy to disassemble.

The design of metal housing, together with high efficient motorized impeller make the inline duct fan superior to others at the aspects of bulk, weight, vibration, noise, durability, efficiency and safety. It's widely used at hotel, auditorium, station, supermarket, airport and other public occasions.

Usage/Application	Office
Size	Office & Home
Brand	WADBROS IMPORTS & EXPORTS
Fan Type	Ducting Fan
Power	51(H),46(M),42(L) W
Current	0.280(H),0.200(M),0.190(L) Amps
Speed	2450(H),2050(M),1650(L) RPM
Type	Duct Mounted Fan
Product Type	Duct Exhaust Fan

Color	White
Electric Current Type	AC
Material	ABS Plastic
Wiring	Copper
Warranty	2 Years
Air Flow	550(H),440(M),340(L) m3/h
Frequency	50 Hz
Diameter	300 X 150 mm

WAPCOS
(A Government of India Undertaking)

Selection of contractor for Repair / Renovation works of Toilet blocks in Boys hostel at Gujarat National Law University Campus

VOLUME III – FINANCIAL PROPOSAL

WAPCOS LIMITED
515, 5th Floor, Shree UGATI Corporate Park Opp. Pratik Mall, Koba-Gandhinagar Road, Kudasan, Dist: Gandhinagar, Gujarat-382421Tele: 079-23600292Tele fax: 079-23600352
Email: gandhinagar@wapcos.co.in

SECTION-IX: FINANCIAL PROPOSAL (VOLUME-III)

1.0 Letter of Transmittal for Financial Bid

Date: _____

To,
WAPCOS Limited
Sub: Financial Bid for the "Repair / Renovation works of Toilet blocks in boys hostel at Gujarat National Law University"

Dear Sir,
With reference to your NIT document dated ……., I/we, having examined the Bidding Documents and understood their contents, hereby submit my/our Bid for the aforesaid Project. The Bid is unconditional and unqualified.

1. I / We acknowledge that the WAPCOS will be relying on the information provided in the BID and the documents accompanying the BID for selection of the Contractor for the aforesaid Project, and we certify that all information provided in the Bid are true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying the BID are true copies of their respective originals.

2. The BID Price has been quoted by me / us after taking into consideration all the terms and conditions stated in the NIT, draft Agreement, our own estimates of costs and after a careful assessment of the site and all own the conditions that may affect the project cost and implementation of the project.

3. I/ We acknowledge the right of the Authority to reject our BID without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.

4. In the event of my/ our being declared as the Selected Bidder, I/we agree to enter into a Agreement in accordance with the draft that has been provided to me/us prior to the BID Due Date. We agree not to seek any changes in the aforesaid draft and agree to abide by the same.

5. I / We shall keep this offer as specified in the NIT.

6. I / We hereby submit our BID and offer a BID Price of Rs. .....including Goods and Services Tax (Rs..... in words) for undertaking the aforesaid Project in accordance with the Bidding Documents and the Agreement.

Yours faithfully,

Date: (Signature, name and designation of the Authorized signatory)

Place: **Name and seal of Bidder**

2.0 Price Schedule

Sr. No.	Item Description	Qty	Unit	Rate	Amount
A	**CIVIL WORK**				
	SANITARY FIXTURES & FITTINGS				
1	Providing laying and jointing in true line and level **U.P.V.C. Pipe** SCH-40 for internal use & SH- 80 (external use for cold water including fittings & bends make ASHIRVAD/ PRINCE / SUPREME / ASTRAL / FINOLEX or equivalent as approved by Architect In Charge. Pipe shall be fixed on the wall with the help of clamp at every two meter C/C or shall be concealed as directed including necessary fittings etc. including jointing with one step UPVC pipe solvent cement, testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials. Make ASTRAL UPVC pressure pipe - or equivalent as approved and selection by architect.				
1.1	15 mm dia	200	RMT		
1.2	25mm dia.	320.000	RMT		
1.3	32mm dia.	200.000	RMT		
1.4	40mm dia	10.000	RMT		
1.5	50mm dia	270.000	RMT		
1.6	65mm dia	190.000	RMT		
1.	110mm dia	4	R		

7		48.00	MT		
1.8	160mm dia	200.00	RMT		
2	Providing ,Fixing, testing and commissioning of High density low noise **multi layer pipes having external layer PP, middle layer mineral reinforced PP, internal layer -PP one/two end socket** with special ring fittings of specified diameter with all necessary specials, bend , reducers, elbow, y & T connections , traps of same material with push fit socket with special ring etc. OR jointing with two step cement solvent specifications, drawings, details as directed by Architect In Charge. Make ASTRAL - SILENCIO-6RFT DS or equivalent as approved and selection by architect.				
2.1	50 mm dia.	10	RMT		
2.2	75 mm dia.	10	RMT		
2.3	110 mm dia.	8	RMT		
2.4	160 mm dia.	8	RMT		
3	Providing and fixing Chlorinated Polyvinyl Chloride **(CPVC) pipes**, SDR- 11 having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Architect In Charge. Make ASTRAL-CVPC PRO -SDR 11 or equivalent as approved and selection by architect.				
3.1	20 mm dia	32	Rmt		
3.2	25 mm dia	24	Rmt		
3.3	32 mm dia	40	Rmt		
4	Providing and fixing floor mounted **Water** Closet size 550x365x390mm including flushing system set soft seat cover P trap including jointing the trap with soil pipe in cement mortar 1:1 (1 cement : 1 find sand) , making leakage proof of all fittings (i) in white color. Make - UFC JAQUEL- floor mounted ewc P trap - 5201 or equivalent as approved and selection by architect.	85.00	Nos		
5	Providing and fixing wall mounted **wash basin** 400x550x130mm without integrated pedestal white having 35 mm C.P. brass pillar tap hole , fixing to the	52.	EACH		

	wall using with SS rag bolts & suitable accessories making good the walls wherever require:, including **32mm Brass Full Thread Waste Coupling 3"** , White Vitreous China wash basin size 535x400 mm with single hole. Make UFC JAQUEL-WALL HUNG BASIN 5504 - WHITE , waste coupling-100	00			
6	Providing and fixing Brass **pressmatic auto closing Pillar Faucet** with push type knob , 7.5 ± 2.5 second flow time with base flange, integrated honeycomb structured aerator , plastic cartridge in mirror polished chrome to the wash basin and connected to the supply line complete with required fittings ,for utility area basins, of approved quality and conforming to Manufacturers Standards. Make UFC JAQUEL- PRESSMATIC PILLAR COCK-602 or equivalent as approved and selection by architect.	52.00	EACH		
7	Providing, fixing and testing and commissioning of 15mm **CP brass angle cock** with brass wall flange & quarter turn lever operating knob , with ceramic spindle complete as per drawing and details.(for wash basin control valves Make UFC JAQUEL- antique ANGULAR STOP COCK-1804 or equivalent as approved and selection by architect.	52.00	EACH		
8	Providing and fixing 15MM **brass 2 way** Bib **cock** with wall flange and aerator, quarter turn lever operating knob, with ceramic spindle, in mirror polished chrome, connected to the supply line complete. With required fittings, for utility area WC, of approved quality and conforming to Manufacturers Standards. Make UFC JAQUEL- antique BIB COCK-1801 or equivalent as approved and selection by architect.	85.00	EACH		
9	Metropole Flush valve concealed push type (dual flush 40 mm) in mirror polished chrome, with wall flange, with required fittings, of approved quality and conforming to Manufacturers Standards. Make UFC JAQUEL-metropole dual flush -513 - or equivalent or as approved and selection by architect.	85.00	EACH		
10	Providing, Stop cock consisting sleeve, lever, flange and concealed part suitable for 25 mm pipeline with inner head all fittings complete as per specification/drawings and details. Make UFC JAQUEL-stop cock 20 mm -1822 or equivalent as approved and selection by architect.	12.00	EACH		
11	Providing, Installation, testing & commissioning of heavy quality brass drain Valve screw down type of 40 mm size with screwed/flanged ends, factory tested, etc. complete as per specification and to the satisfaction of Project Manager. (Water Supply Riser) for all depth/ heights and lead. Make zoloto/Honeywell, JAQUEL or equivalent as approved and selection by architect.	8.00	EACH		
11.1	Providing, Installation, testing & commissioning of heavy quality brass **drain Valve** screw down of 32 mm size with screwed/flanged ends, factory tested, etc. complete as per specification and to the satisfaction of Project Manager. (Water Supply Riser) for all depth/ heights and lead. Make zoloto/Honeywell, JAQUEL or as approved and selection by architect.	8.00	EACH		
12	Providing and Fixing flush **valve** 25mm with round flange for urinal with GI inlet connection pipe & Urinal spreader with necessary bolt washers, make Cera or equivalent.	72.0	EACH		

	Make JAQUEL elite spreader 360 & metropole 501 or equivalent as approved and selection by architect.	0			
13	Providing and Fixing **Soap Dish** in Polished chrome of approved make and conforming to Manufacturers Standards. As per approved and selection by architect / consultant. Make UFC JAQUEL-soap dish -113 or equivalent as approved and selection by architect.	52.00	EACH		
14	Providing and fixing 450mm **Long Braided Hose pipe** with M10X1 Nipple, 15mm Nut, O-Ring & Rubber Washer (Suitable for Wash Basin, Kitchen Sink etc) of approved make and conforming to Manufacturers Standards. Make UFC JAQUEL or as approved and selection by architect.	52.00	EACH		
15	Providing and fixing CP Brass **Brass Bottle Trap (Silver) Bottle Trap with 12" pipe of same** of approved quality & **make UFC JAQUEL-bottle trap -5914 or equivalent as approved and selection by architect.**	1.00	EACH		
16	Providing and fixing **Flexible pipe 32MM DIA P.V.C. waste pipe 1.5 mtr long** for sink or wash basin or urinal including P.V.C. waste fittings complete. Make UFC JAQUEL or equivalent as approved and selection by architect.	124.00	EACH		
17	Providing, fixing and testing and commissioning of Health faucet with full CP brass body with 1 metre PVC Silver foil connection pipe & full brass stand with all fittings complete as per specification / drawings and details. As per approved and selection by architect/consultant - make UFC JAQUEL-bidet spray -251	85.00	Nos		
18	Providing and fixing **C.P. Full brass towel ring complete** with C.P. brass brackets fixed to wooden plugs with C.P. brass screws. Make UFC JAQUEL-towel ring -110 or equivalent as approved and selection by architect.	52.00	Nos		
19	Providing and fixing **plain P TRAP high riser** size 110x110 ,110x160 mm OR according to pipe outlet size and inlet size , of self cleansing design with screwed down or hinged square jali 110x110mm with vent arm complete, including cost of cutting and making good the surfaces and floors. make ASTRAL - SILENCIO or equivalent as approved and selection by architect.	88.00	Nos		
20	Providing and fixing **MULTI FLOOR trap** size 110X75X50 mm spigot type OR according to pipe outlet size and inlet size & number of connection of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors Make ASTRAL - SILENCIO or equivalent as approved and selection by architect.	56.00	Nos		
21	Providing and fixing **NHANI trap** size 110X75 mm OR according to pipe outlet size and inlet size & number of connection of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors. Make ASTRAL - SILENCIO or equivalent as approved and selection by architect.	120.00	Nos		
22	Providing and fixing 100 mm sand cast Iron grating for gully trap. Make ASTRAL/ashirvad/prince - or equivalent as approved and selection by architect.	8.00	Nos		
23	Providing & fixing **PVC Cowl** on PVC ventilating pipes and verticals for soil and waste Pipes & Rain water pipes at top level/ terrace level, as specified and	32.	Nos		

	required, etc. complete. (A) 110 mm diameter Make ASTRAL/ashirvad/prince - or equivalent as approved and selection by architect	00			
24	Providing & fixing **PVC Cowl** on PVC ventilating pipes and verticals for soil and waste Pipes & Rain water pipes at top level/ terrace level, as specified and required, etc. complete. (A) 75 mm diameter Make ASTRAL/ashirvad/prince - or equivalent as approved and selection by architect	40.00	Nos		
25	Re-fixing existing mirror to wooden cleats with new C.P. brass screws and washers complete	52.00	EACH		
	DEMOLITION WORK				
26	**Dismantling sanitary fittings** like wash basin. W. C. Pan Indian & European Type Flushing tank, etc. including stacking the materials with all lead and lift.	189.00	EACH		
27	**Demolition of Brick work** and stone masonry including stacking of serviceable materials and disposal of unserviceable materials with all lead and lift.(ii) In Cement Mortar.	8.00	CUM		
28	**Filling available excavated earth** (excluding rock) in trenches. plinth, sides of foundations etc. in layers not exceeding 20cm. in depth consolidating each disposited layer by ramming and watering	120.00	CUM		
29	**Dismantling stone slab** flooring laid in cement mortar including stacking of serviceable material and disposal of unserviceable material	128.00	SQM		
30	**Dismantling tile work** in floors and roofs laid in cement mortar including stacking material within 50 metres lead.	3520.80	SQM		
31	**Taking out existing wooden door** shutter, repair by cutting, painting etc. and refixing of repaired door shutters to existing door frames, including replacement of hinges with screws, etc. as required, all complete as per the direction of the Engineer-in-charge.	257.60	SQM		
32	**Removing and scraping of old deteriorated plaster** of any thickness fromm wall / R.C.C member including stacking of serviceable material and disposal of unserviceable from site of work with all lead and lift	48.0	SQM		

		0			
33	Dismantling C.I. or asbestos rain water pipe with fittings and clamps including stacking the material within 50 metres lead : **150 mm dia pipe**	80.00	RMT		
34	**Cutting holes** up to 15x15 cm in R.C.C. floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including finishing complete so as to make it leak proof.	80.00	EACH		
	FINISHING WORK				
35	Providing **waterproofing treatment** in two coats for sunken slab areas, bathrooms floor and walls, balconies, chajjas, exposed roofs before laying of screeds, water tanks (underground or external), lift pits, after preparing and cleaning the surface The surface must be perfectly cured and dry, solid (i.e. free of weak or easily removable parts) and free from oil, grease, paint and de-bonding agent. The recommended mixing ratios are shall follows the manufacturers standards or as indicated on packaging. Apply the first coat about 1 – 2 mm thick, pressing down to ensure maximum adhesion to the surface. Aqua-stop AR1 mesh, submerge the reinforcing mesh fully in the first layer of freshly applied Aqua-stop Nanoflex®,pressing down with the trowel. The second coat of Aquastop Nanoflex®. Apply a continuous, even layer about 2 – 3 mm thick covering the surface completely.				
35.1	water proofing with eco kerapalst p6 + AQUA STOP120 or equivalent make for bathroom and sunken area as well as vertical surfaces like walls , sunk beams make **kerakall or equivalent as approved and selection by architect.**	1456.80	SQM		
36	**12 mm cement plaster** of mix : 1:4 (1 cement: 4 fine sand)	2380.80	SQM		
37	**12 mm cement plaster** finished with a floating coat of neat cement of mix : 1:4 (1 cement: 4 fine sand)	96	SQM		
38	**6 mm cement plaster** 1:3 (1 cement: 3 fine sand) finished on top on walls , R.C.C. slabs and beams.		X		
38.1	Extra for providing and mixing **water proofing materia**l in cement plaster work in proportion recommended by the manufacturers **make kerakall eco p6 or equivalent as approved and selection by architect**		Y		
		32.00	**TOTAL(X+Y)**		
39	Providing and injecting approved **grout** in proportion recommended by the manufacturer into **cracks / honey-comb area of concrete / masonry** by suitable				

	gun/pump at required pressure including cutting of nipples after curing etc. complete as per directions of Engineer-in-Charge. (The payment shall be made on the basis of actual weight of approved grout injected.)				
39.1	Stirrer mixed **SBR Polymer** (of approved make) modified Cement slurry made with Shrinkage Compensating Cement in concrete/RCC work.	40.00	KG		
40	Providing and laying Ceramic glazed wall tiles of size 300x600 mm (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colors, shades White, Ivory, Grey, Fume Red Brown or any laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand), mixed with water proofing chemical compound excluding pointing the joints make tile AGL TILE 300X600 GVT or equivalent as approved and selection by architect	2395.20	SQM		
41	Providing and laying **anti skid glazed vitrified floor tiles Size of Tile 600 x 600 mm** size (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colors and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), excluding pointing the joints make tile AGL TILE 600X600 GVT or equivalent as approved and selection by architect	1121.20	SQM		
42	Providing and laying **Ceramic glazed colored wall tiles of size 300 x 600 mm or 300 x 300mm** (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colors, shades White, Ivory, Grey, Fume Red Brown or any laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand), mixed with water proofing chemical compound **excluding** pointing the joints **make tile AGL TILE or equivalent as approved and selection by architect**	96.00	SQM		
43	**Grouting the joints of flooring tiles** having joints of 3 mm width, using **epoxy grout** mix of 0.70 kg of organic coated filler of desired shade (0.10 kg of hardener and 0.20 kg of resin per kg), including filling / grouting and finishing , epoxy grout shall be 4mm and rest of the depth of groove will be filled with cement grout complete as per direction of Engineer-in-charge **make dubond or equivalent as approved and selection by architect**	1642.80	SQM		
44	**Brick work 7 cm thick** with common burnt clay F.P.S. (non modular) brick of class designation 7.5 in cement mortar 1:3 (1 cement : 3 coarse sand) in superstructure above plinth level and upto floor five level.	16.00	SQM		
45	**VENT:**-Providing and fixing standard extruded of **aluminum section** of size 63.50 x 38.10 x 1.95 mm(of Jindal Section no:4605, @ Wt 1.094Kg /Rmt with color anodized aluminum frame with 5 mm thick transparent bronze color tinted float glass with color anodized aluminum frame for ventilation with 5 mm thick frosted glass as details etc complete for. window	8.00	SQM		
46	Renewing glass panes, with putty and nails wherever necessary including racking out the old putty : Float glass panes of nominal thickness 4 mm (weight not less than 10kg/sqm)	10.00	SQM		
	METAL WORK				

47	**Providing and fixing Metal suspension system** for drainage pipe 50 mm -75mm ,110mm to 160 mm respectively ,pipe should be clamped using electro-galvanized pipe hanger clamps of size according to the pipe dia in true horizontal level and proper alignment with desire slope by maintain spaces between pipes , pipe clamps directly screwed to mtr electro-galvanized threaded road which are then screwed to the anchor bolt with sleeves or plug which are fastened to the ceiling by mechanical equipment with care the holes are then injected with **hilti** chemical grouting, finishing & making good complete for all heights .making good to damage to the RCC will paid by contractor. zinc coated slotted strips of 400mm length are installed at the required space to support the system ,The work shall be carried out as per specifications of Indian standards of steel work & drawing and as per directions of the architect -in-Charge.all necessary hexagonal bolts lock nut, sleeves, rawl plug, dash fasteners, etc are included in above work. above single set of suspension system consisting of 4 diff size of pipe clamps , 4 theared road **make ASHIRVAD, ASTRAL, HILTI or equivalent as approved and selection by architect**	144.00	SET		
48	**METAL WORK-** Providing, fabricating, transporting and fixing in position M.S. Structural Work (for Any Height) for all type of section for desired pattern, made up from **MS Angle or L Sections**, MS tubes, channel sections, flat, square bars, round bars, standard steel sections, fitted with necessary banding, welding, holdfast, M.S. hinges, gusset plate including all necessary fixtures & fastening, locking arrangement like anchor bolts or similar etc complete. as per drawing Rate including two or more coats of synthetic enamel paint over a primer of Zinc Chr. as per architectural dwg.(M.R)	48.00	KG		
49	Providing and **fixing tiled false ceiling** of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm center to center and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanized butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by architect-in-charge.				
49.1	**GI Metal Ceiling Lay in** plain regular edge Global white color tiles of size 595x595 mm, and 0.5 mm thick with 8 mm drop; made of G I sheet having galvanizing of 100 gms/sqm (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending make super sill or equivalent as approved and selection by	199.00	SQM		

	architect				
B	**PAINT & POLISH WORK**				
50	Applying priming coat: With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanized iron/ steel works make deluxe or equivalent as approved and selection by architect	40.000	SQM		
51	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @ 0.80 ltr/10 sqm of approved brand and manufacture	40.000	SQM		
52	Scraping oil paint from steel and other metal surface and making the surface even (with Hand Scraping.)	40.000	SQM		
53	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : Water thinnable cement primer	2347.20	SQM		
54	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	160	SQM		
55	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour. Two coats make deluxe or equivalent as approved and selection by architect	2347.20	SQM		
56	Removing dry or oil bound distemper by a washing and scraping and sand papering the wall surface smooth including necessary repairs to scratches complete.	2347.20	SQM		
57	Melamine polishing on wood work (one or more coat). **make deluxe or equivalent as approved and selection by architect**	40.000	SQM		
B	**TOTAL PAINT & POLISH WORK**				
C	**ELECRTICAL WORK**				
58	Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA polyester powder coated and high U.V. & corrosion resistance with diffuser and/or Polycarbonate optics with company mark / name 120 to 300 V, Power Factor more than 0.9, THD < 10 %, CCT 4000 K to 6500K, Uniformity ratio >0.7, Luminaire efficacy> 85				

	lumens/watt , LED driver efficiency > 85 % CREE / OSRAM / PHILIPS Lumileds / NICHIA / SEOUL/Bridgelux(U.S.A.) make LED used for luminaire. (Each fitting required LM-79 & LM-80 Certificates)				
	C) Square/ Circular Surface/Recessed Mounted Downlight with provision for spring loaded mounting clips complete. © 20-24 watts, Surge-4 KV Cat-lll make BAJAJ ,WIPRO OR equivalent or as per slection by architect	144.00	EACH		
59	Point wiring for Light / Bell with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multistrand copper wires, in following type of pipe to be erected concealed in/ on surface on wall/ceiling complete with 6A Modular type switch / bell push & accessories and earth continuity of following type, erected on PVC / Metallic box, single mounting base frame covered with textured/metallic front plate modules erected on / in wall / ceiling as per pipe erected, with necessary Lamp holder/ceiling rose / H.D.Connector as directed.				
	(a) With medium class Rigid PVC pipe and accessories Cat. III	144	PT		
60	Supply and Installation of Circular Inline exhaust fan for toilet Exhaust. Toilet exhaust system should be connected with PVC rigid pipe of 6" and Disk valve mechanism to maintain proper exhaust. Fan discharge is covered with protection grill and Air should be discharge open to sky. Specification : shall as follows Fan Type- Ducting Fan, Power- 2600/2080 RPM , Frequency 50 Hz , fan size -150 mm , air delivery- 500 CMH , Type -Duct Mounted Fan, Product Type Duct Exhaust Fan , Color White , Electric Current Type AC , Material- ABS Plastic , Wiring Copper Warranty 2 Years , Diameter 300 X 150 mm make- WAD IL-15 WAD BROS or equivalent as approved and selection by architect	16	NOS		
61	Point wiring for FAN with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (Green) both are of .ISI marked 1.1 KV Grade FRLS PVC insulated multistrand copper wires, in following type of pipe to be erected concealed in / flushed on wall/ceiling complete with 6A Modular type switch and hum free EME four or more step type electronic fan regulator with separately mounted and accessories with earth continuity of following type erected on PVC / Metallic box, single mounting base frame covered with textured/metallic front plate modules erected on / in wall / ceiling as per pipe erected. With necessary ceiling rose / H.D. Connector as directed.				
	(a) with medium class Rigid PVC pipe and accessories Cat. III	16.00	PT		
C) TOTAL ELECTRICAL WORK					

3.0 SUMMARY OF COST

Particulars	Total Quoted Amount (INR) as attached BOQ	
	In words	**In Figures**
A) Cost of Civil Works		
B) Cost of Paint & Polish Works		
C) Cost of Electrical Works		
Total cost (A+B+C) of work for Repair & Renovation of Toilet		
Applicable GST & Other Taxes		
Total		

- The estimated cost mentioned in NIT is based on the rates of item of works in R&B & GWSSB SOR and Non-R&B & GWSSB SOR items and these rates were inclusive of Sales Tax/ VAT, Octroi, Purchase Tax, Turnover Tax, Excise Duty and any other tax applicable. However, in view of implementation of GST w.e.f. 01.07.17 by Govt. of India, bidders are advised to quote their rates considering the positive (+ve) / negative (-ve) cost impact on their rates in present scenario.
- The quoted rate filled in Schedule of Quantities, should include all costs associated with the project including any out of pocket/mobilization expenses, Taxes if any applicable as per Govt. terms, shall be paid by the Contractor including Goods and Services Tax (GST). No extra payment on this account will bemade to the contractor.
- It is mandatory to bidders to deposit GST within time limit framed by Govt. of India, if applicable.
- The tenderer shall quote rates up to zero decimal and as well as in words. In case of any discrepancy rate quoted in words shall prevail.

4.0 PAYMENT SCHEDULE

4.1 Back to back payment:

"The Associate/Sub-consultant / Sub-Contractor acknowledge that under the present Contract/Agreement/Work Order/Arrangement, WAPCOS is only working as intermediary between (Name of Client) being Principal Employer/Client and Associate/Sub-consultant/Sub-Contractor. Thus the Associate / Sub-consultant / Sub-Contractor unconditionally acknowledges that the payments under the present Contract/Agreement/Work Order/Arrangement shall be made proportionately by WAPCOS only on back to back basis i.e., after 21days' subject to receipt of payment from GNLU being Principal Employer/Client. The Associate/Sub-consultant/Sub-Contractor also unconditionally agree that in the event the payment or part thereof, under the present Contract/Agreement/Work Order/Arrangement is not received from (Name of Client) (Principal Employer/Client), then WAPCOS &/or any of its Employee/Officer shall not be responsible to pay any amount to Associate/Sub-consultant/Sub-Contractor. The said condition shall supersede any and all other conditions of Contract/Agreement/Work Order/Arrangement between the parties."

4.2 Payment Breakup

Stage	Sr. No.	Milestone	% payment	Cumulative Percentage payment
Stage-1	(i)	Advance against submission of Bank Guarantee	5%	5%
Stage-2	(ii)	Supply of all required Material at Site	20%	25%
	(iii)	Up to installation of all fixtures, devices, finish works, all services, plumbing, and other allied works etc. (Completion of all works as per BOQ).	50%	75%
	(vi)	Performance test & Commissioning, acceptance by client	10%	85%
	(v)	Taking over, obtaining of occupancy certificate, clearance form Fire department, Completion of warrantee certificates, statutory NOC and any other required documentation.	12.5%	97.5%
Stage-3		After completion of defect liability period	2.5%	100%

The above Payment Breakup shall be reference as guiding factor only. However, the payment shall be made in accordance with the Clause 48: Payment of Section III: General Condition of Contract.

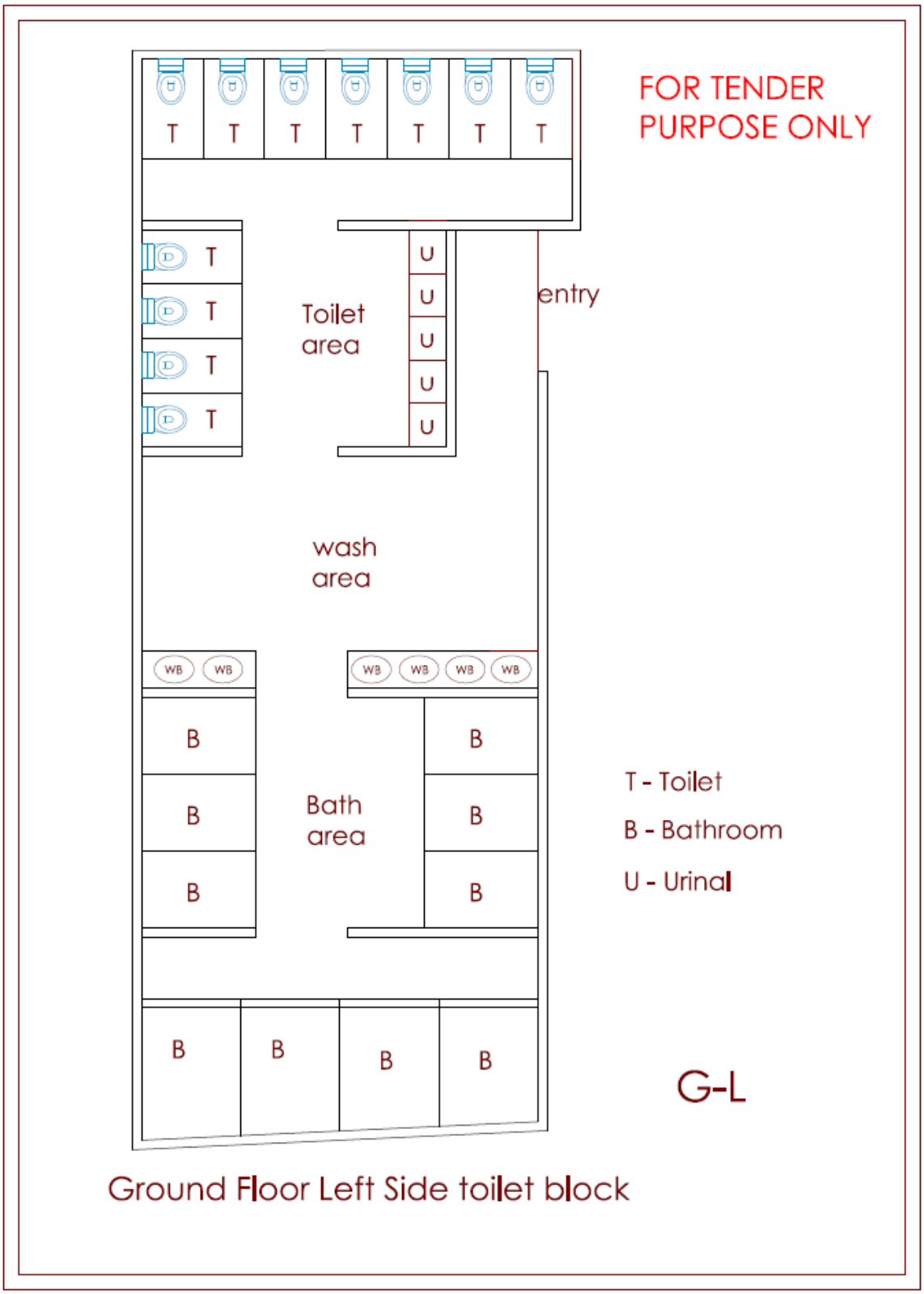
WAPCOS

(A Government of India Undertaking)

Selection of contractor for Repair / Renovation works of Toilet blocks in Boys hostel at Gujarat National Law University Campus

VOLUME IV – DRAWINGS

WAPCOS LIMITED
515, 5th Floor, Shree UGATI Corporate Park Opp. Pratik Mall, Koba-Gandhinagar Road, Kudasan, Dist: Gandhinagar, Gujarat-382421Tele: 079-23600292Tele fax: 079-23600352
Email: gandhinagar@wapcos.co.in


FOR TENDER PURPOSE ONLY
T
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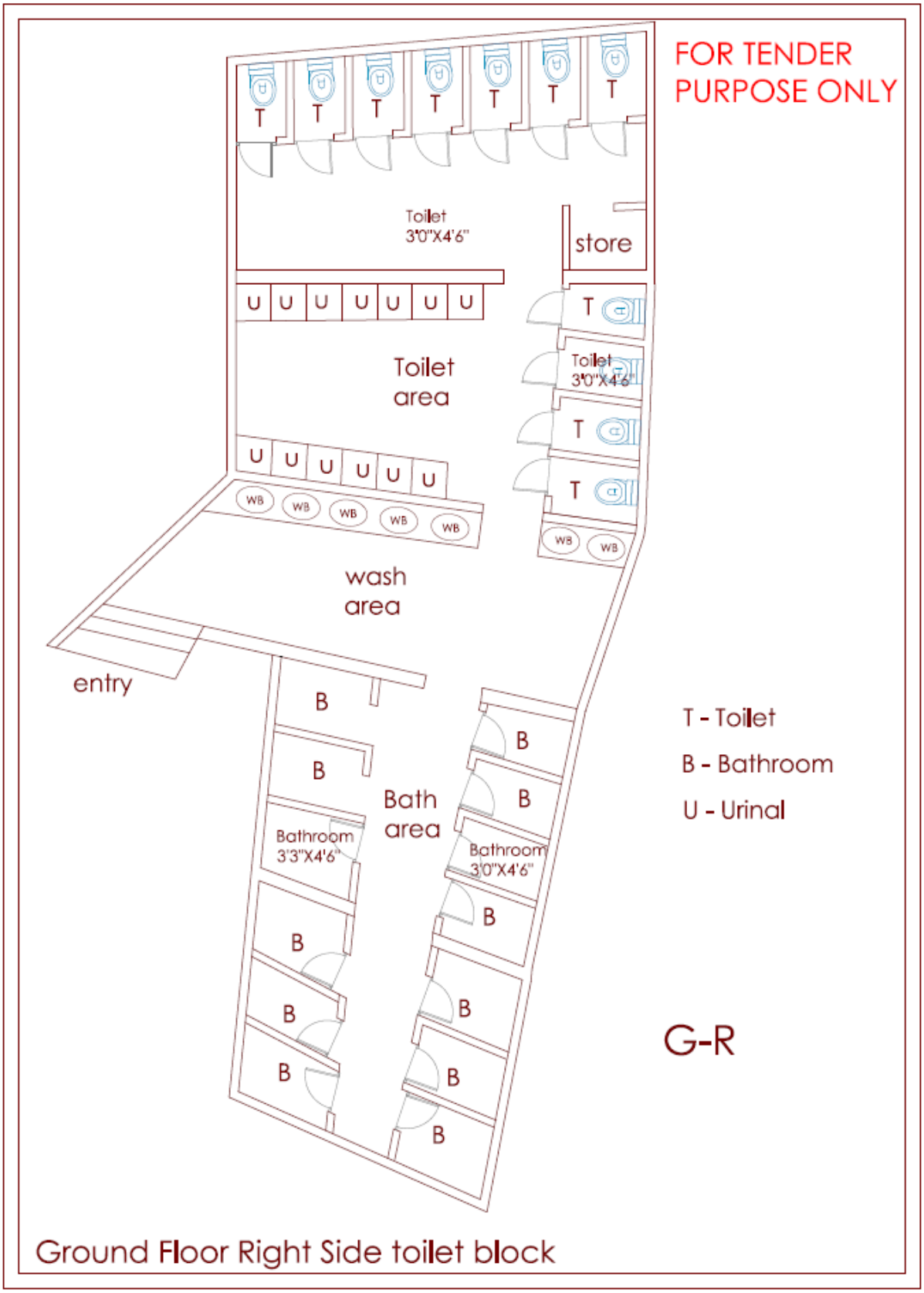
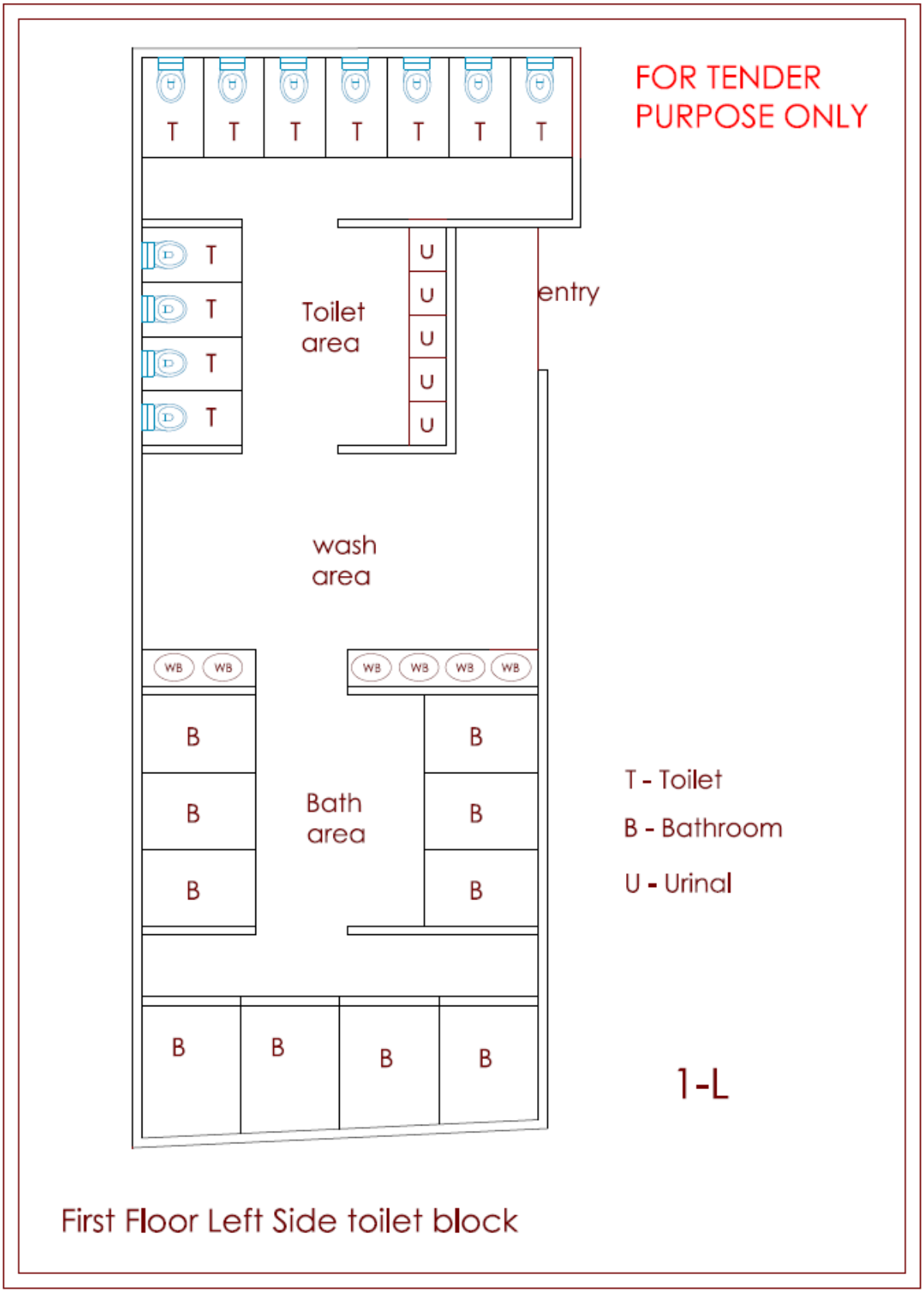
Toilet area
entry
wash area
WB
WB
WB
WB
WB
WB
B
B
B
B
B
B
Bath area
B
B
B
B
B
B
T - Toilet
B - Bathroom
U - Urinal
G-L
Ground Floor Left Side toilet block


FOR TENDER PURPOSE ONLY
T
Toilet 3'0"X4'6"
store
U
Toilet area
WB
wash area
entry
B
Bath area
Bathroom 3'3"X4'6"
Bathroom 3'0"X4'6"
T - Toilet
B - Bathroom
U - Urinal
G-R
Ground Floor Right Side toilet block


FOR TENDER PURPOSE ONLY
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Toilet area
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WB
WB
B
B
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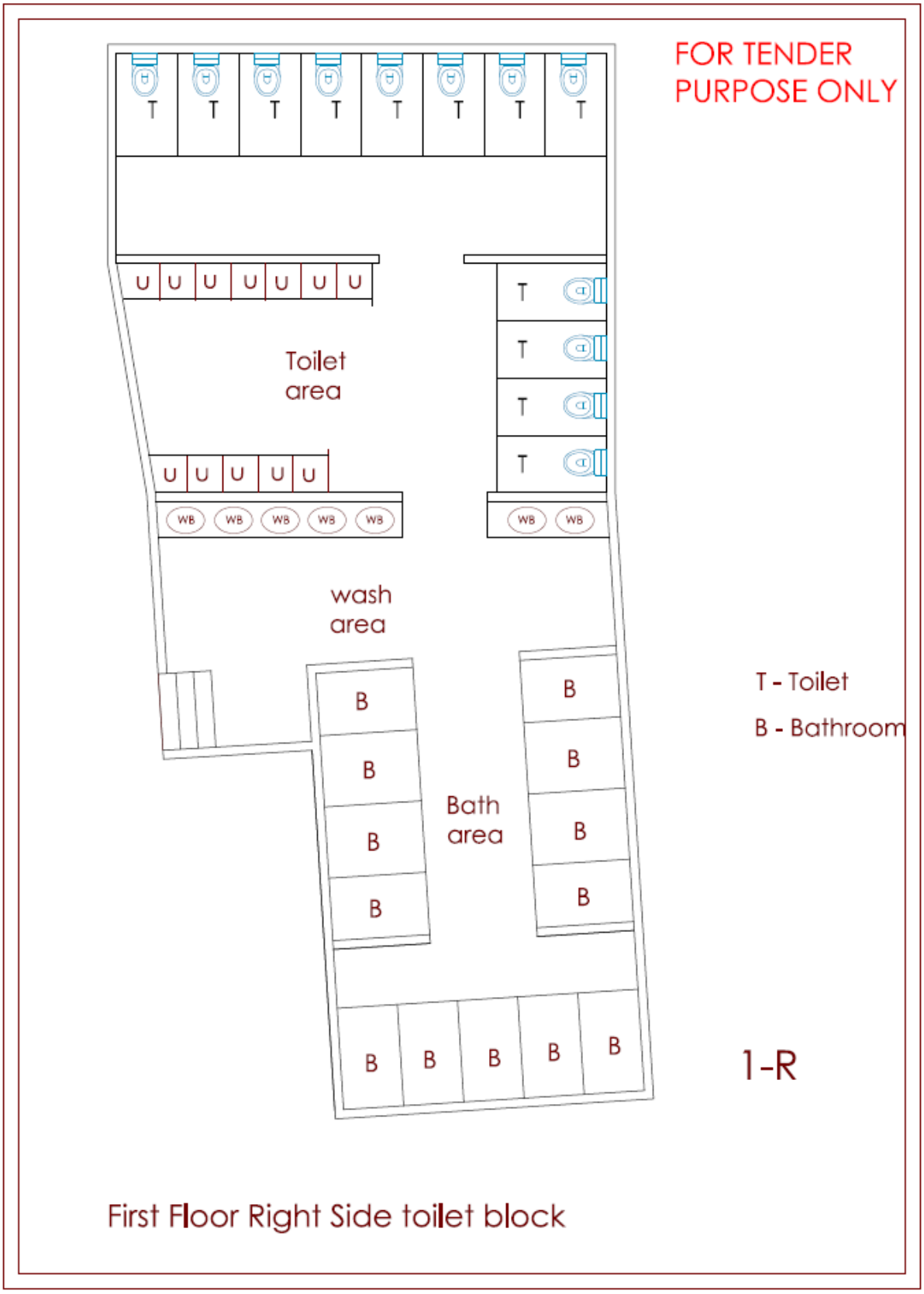
B
Bath area
T - Toilet
B - Bathroom
U - Urinal
1-L
First Floor Left Side toilet block


FOR TENDER PURPOSE ONLY
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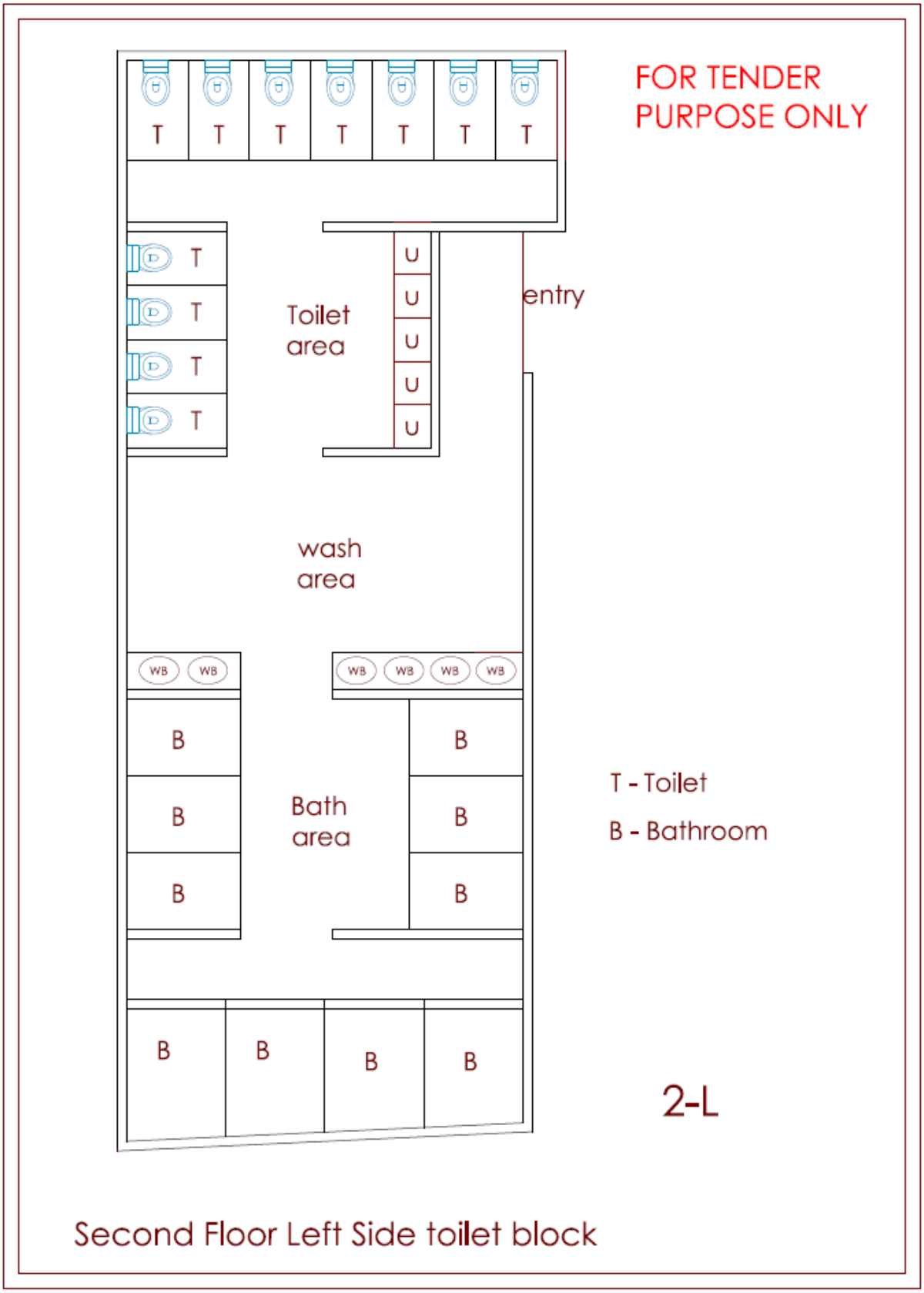
Toilet area
WB
wash area
B
Bath area
T - Toilet
B - Bathroom
1-R
First Floor Right Side toilet block


FOR TENDER PURPOSE ONLY
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Toilet area
entry
wash area
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Bath area
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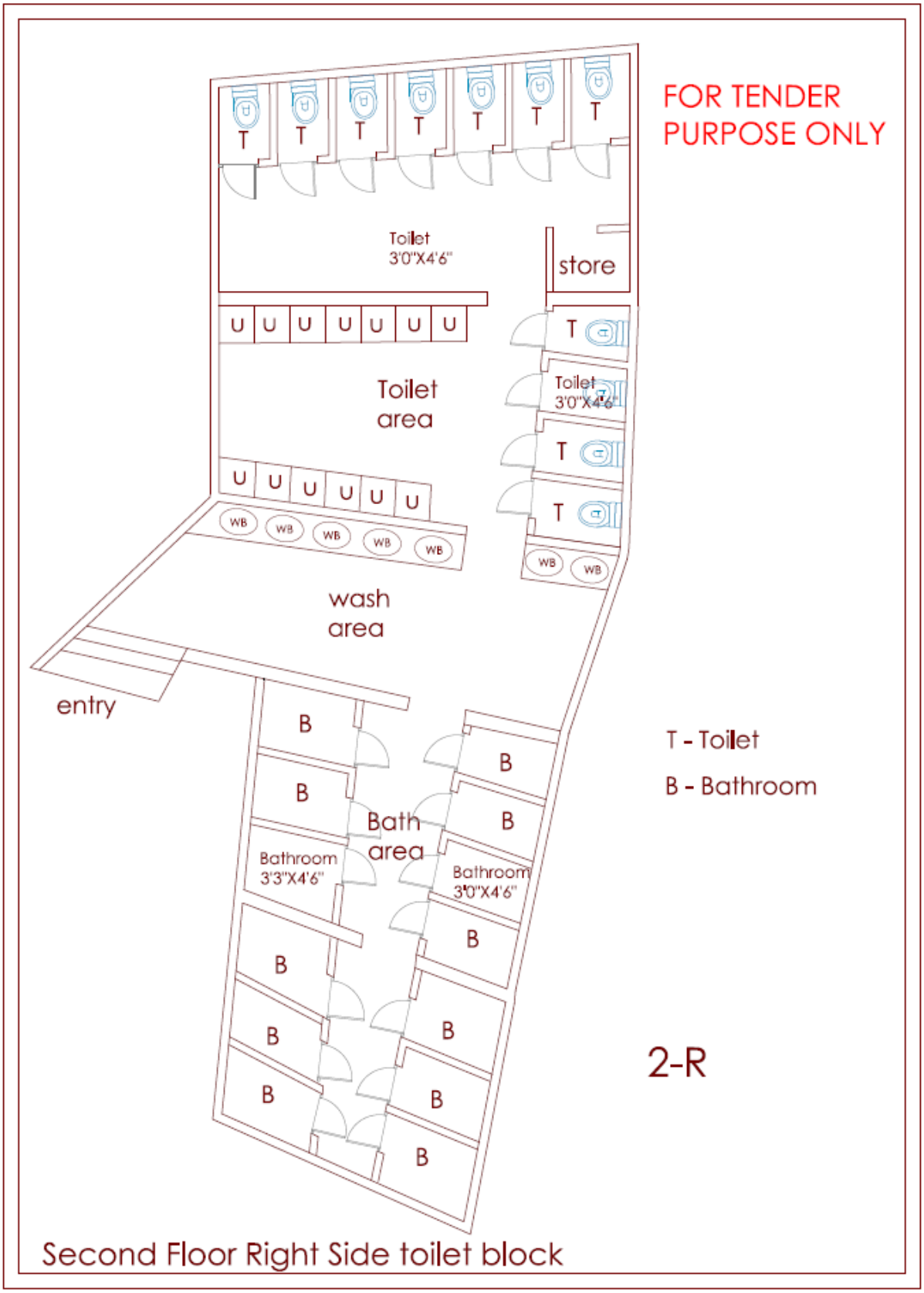
T - Toilet
B - Bathroom
2-L
Second Floor Left Side toilet block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Toilet 3'0"X4'6"
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Toilet area
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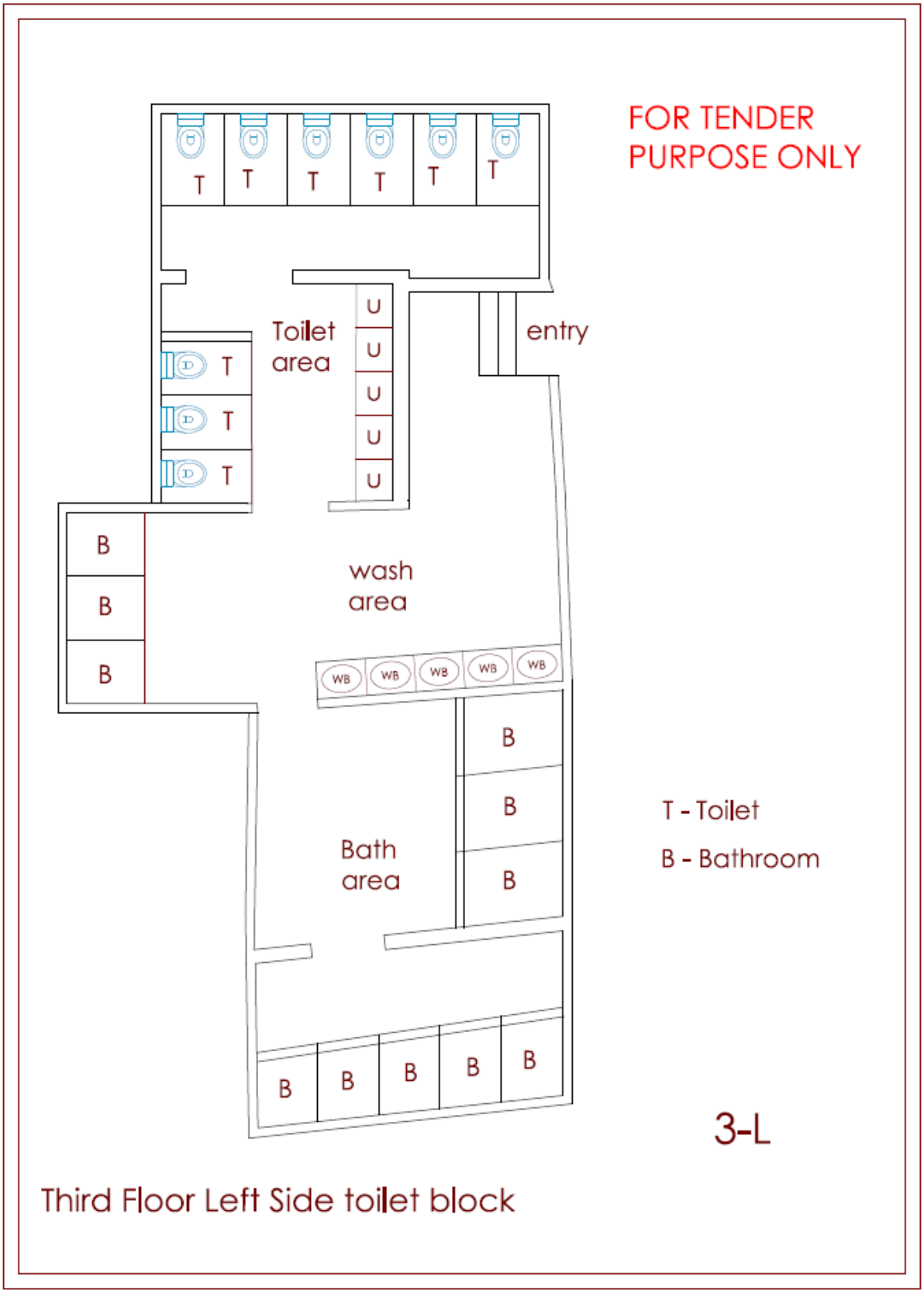
wash area
entry
Bath area
Bathroom 3'3"X4'6"
Bathroom 3'0"X4'6"
T - Toilet
B - Bathroom
2-R
Second Floor Right Side toilet block


FOR TENDER
PURPOSE ONLY
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Toilet
area
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entry
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B
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wash
area
WB
WB
WB
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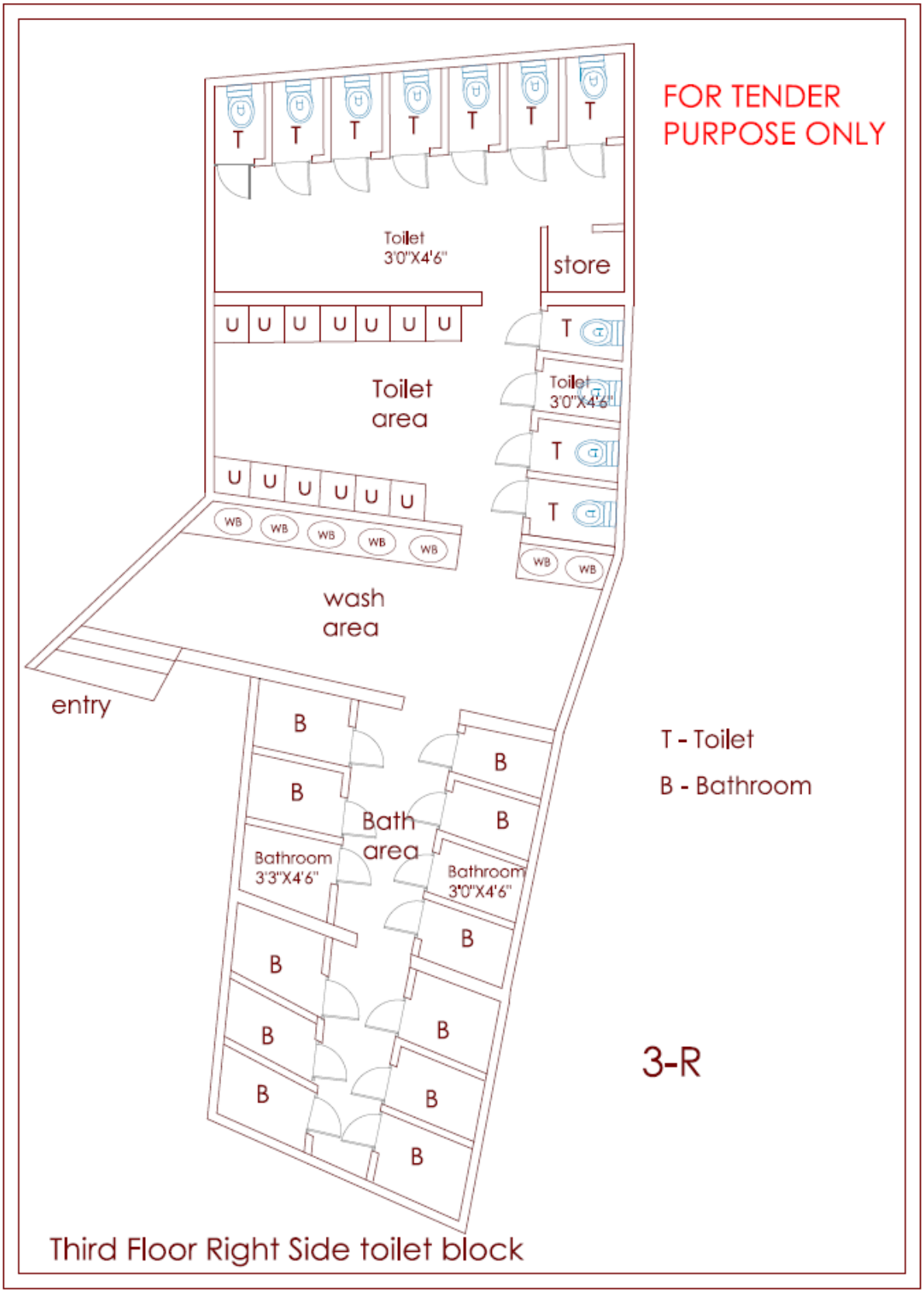
WB
B
B
B
Bath
area
B
B
B
B
B
T - Toilet
B - Bathroom
3-L
Third Floor Left Side toilet block


FOR TENDER PURPOSE ONLY
T
Toilet 3'0"X4'6"
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Bathroom 3'3"X4'6"
Bathroom 3'0"X4'6"
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3-R
Third Floor Right Side toilet block