INDIAN INSTITUTE OF MANAGEMENT MUMBAI
Vihar Lake Road, Powai, Mumbai-400087

TENDER DOCUMENT

FOR

Special Repair works in Savitribai Phule Girls Hostel, Swami Vivekananda Hall Boys hostel, Children's Park and Modular Fencing Work in Anand Vihar in IIM Mumbai.

NIT No.: WAP/INFS-1/IIMM/R&M/2025/04
Date: 25.03.2025

Project Management Consultant

76-C, Institutional Area, Sector - 18
Gurugram-122015, Haryana
Email: wapcosiimm@gmail.com
Website: www.wapcos.co.in

March 2025

TABLE OF CONTENT

NOTICE INVITING e-TENDER (NIT)

NIT No. WAP/INFS-1/IIMM/R&M/2025/04 **Dated : 25.03.2025**

WAPCOS Limited (A Govt. of India Undertaking), on behalf of Indian Institute of Management Mumbai, Vihar Lake Road, Powai, Mumbai invites Online Electronic Tenders on **Item Rate Mode** from experienced and competent bidders, meeting prescribed qualifying criteria as mentioned in tender document.

<table>
<tr><td>1.</td><td>Name of Work / Project</td><td>:</td><td>Special Repair works in Savitribai Phule Girls Hostel, Swami Vivekananda Hall Boys hostel, Children's Park and Modular Fencing Work in Anand Vihar in IIM Mumbai.</td></tr>
<tr><td>2.</td><td>Site / Location</td><td>:</td><td>IIM Mumbai, Vihar Lake Road, Mumbai</td></tr>
<tr><td>3.</td><td>Website for Viewing tender/ Corrigendum/ Addendum</td><td>:</td><td>www.wapcos.co.in and https://etenders.gov.in/eprocure/app</td></tr>
<tr><td>4.</td><td>Website for Procurement, Downloading & Uploading/ Submission of tender documents/ Corrigendum's/ Addendums</td><td>:</td><td>https://etenders.gov.in/eprocure/app
(Central Public Procurement (CPP) Portal)</td></tr>
<tr><td>5.</td><td>Estimated Cost of Work</td><td>:</td><td>Rs. 1,55,45,962.00/- excluding GST
<table>
<tr><th>S. No</th><th>Name of work</th><th>Estimated Cost excl GST (Rs,)</th></tr>
<tr><td>1</td><td>Part-A: Repair & renovation of Savitribai Phule Girls Hostel</td><td>43,34,811.00</td></tr>
<tr><td>2</td><td>Part B: Repair & renovation of Swami vivekananda Hall Boys hostel</td><td>67,04,134.00</td></tr>
<tr><td>3</td><td>Part C: Repair of Existing solar Heating system in Savitribai Phule Girls Hostel</td><td>15,36,607.00</td></tr>
<tr><td>4</td><td>Part D: Repair, Renovation & Installation of Modular fencing around Children Park / Kids Play Area</td><td>11,97,934.00</td></tr>
<tr><td>5</td><td>Part E: Installation of Modular fencing work & gates in Anand Vihar</td><td>17,72,476.00</td></tr>
<tr><td></td><td>Total (Rs.)</td><td>1,55,45,962.00</td></tr>
</table></td></tr>
<tr><td>6.</td><td>Cost of Tender Document</td><td>:</td><td>Rs. 5,000/- (Non Refundable) to be paid in the form of be Banker's Cheque/ Account Payee Demand Draft in the favour of WAPCOS Limited payable at Gurugram or pay online through NEFT/ RTGS in the following account before the last date of technical bid submission
Account Number – 193502000000405
A/c Holder – WAPCOS Limited
Bank Name – Indian Overseas Bank
Branch name: NHB Gurugram
IFSC code: IOBA0001935</td></tr>
<tr><td>7.</td><td>Amount of Earnest Money</td><td>:</td><td>Rs 3,11,000/- in the form as per the NIT.</td></tr>
</table>

<table>
<tr><td></td><td>Deposit</td><td></td><td>EMD shall be deposited in the form of Account Payee Demand Draft, Fixed Deposit Receipt, Bank Guarantee from nationalized/ scheduled commercial banks safeguarding the purchaser's interest in all respects in favour of "WAPCOS Limited" payable at Gurugram and submitted in sealed envelope cover before the last date of technical bid submission.</td></tr>
<tr><td>8.</td><td>Project Completion Period</td><td>:</td><td>Overall 6 Months from the Date of Commencement/ 15 days from Date of award including Monsoon. The individual Timelines of each work is as follows:
<table>
<tr><th>S. No</th><th>Name of work</th><th>Time of completion from the date of commencement</th></tr>
<tr><td>1</td><td>Part-A: Repair & renovation of Savitribai Phule Girls Hostel</td><td>4 Months (2 months for all internal works)</td></tr>
<tr><td>2</td><td>Part B: Repair & renovation of Swami vivekananda Hall Boys hostel</td><td>4 Months (2 months for all internal works)</td></tr>
<tr><td>3</td><td>Part C: Repair of Existing solar Heating system in Savitribai Phule Girls Hostel</td><td>2 months. (During vacations April 2025 to May 2025)</td></tr>
<tr><td>4</td><td>Part D: Repair, Renovation & Installation of Modular fencing around Children Park / Kids Play Area</td><td>6.0 Months</td></tr>
<tr><td>5</td><td>Part E: Installation of Modular fencing work & gates in Anand Vihar</td><td>6.0 Months</td></tr>
</table></td></tr>
<tr><td>9.</td><td>Validity of Bid/Tender</td><td></td><td>120 Days</td></tr>
<tr><td>10.</td><td>Pre-Bid Meeting</td><td>:</td><td>No,
The bidder may send their Pre-bid queries in writing on wapcosiimm@gmail.com at least 7 days before the Bid submission date.</td></tr>
<tr><td>11.</td><td>Last date & time of Procurement / download of tender Document</td><td>:</td><td>As per CPP Portal
The bidder must officially procure/download the tender documents from the CPP portal of WAPCOS before the last date and time of sale of tender document in order to bid.</td></tr>
<tr><td>12.</td><td>Offline Submission of Technical document, Tender Fees, EMD, and Pass phrases etc. as detail in Tender</td><td></td><td>Within 24 hours of last due date on CPP Portal to following address:
WAPCOS Limited
Addl. Chief Engineer, INFS-I Division
76-C, Institutional Area, Sector – 18, Gurugram-122015, Haryana</td></tr>
<tr><td>13.</td><td>Last date & time for online submission of Technical & Financial Bid.</td><td>:</td><td>As per CPP Portal</td></tr>
<tr><td>14.</td><td>Online Opening of Technical Bid</td><td>:</td><td>As per CPP Portal</td></tr>
<tr><td>15.</td><td>Online Opening of Financial Bid</td><td>:</td><td>To be Intimated to Technical Qualified Bidders.</td></tr>
</table>

16.	WAPCOS Contact information	:	WAPCOS Limited INFS-I Division 76-C, Institutional Area, Sector - 18 Gurugram-122015, Haryana Email: wapcosiimm@gmail.com Contact No. +91-9414986475- For tender related query

If the office of WAPCOS Limited, Gurugram 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 shall be followed up to submission of tender and it will be the part of tender. The full details about the work, specifications, Drawings, terms and conditions shall be available in the Tender Document.

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.

IMPORTANT POINTS

1.1 The bidder should be an Indian Registered Company under Companies Act 1956/ 2013 Proprietorship Firm/ Partnership Firm.

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 WAPCOS Ltd./ IIM Mumbai 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./ IIM Mumbai for rejection of his Bid and will not be bound to accept the lowest or any other tender.

1.4 IIM Mumbai shall be the Tender Accepting Authority.

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/ IIM Mumbai 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 sign the integrity Agreement, 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.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the WAPCOS.

Additional Chief Engineer
For and on behalf of WAPCOS LIMITED

SECTION– I

INSTRUCTIONS TO BIDDER

SECTION– I
INSTRUCTIONS TO BIDDER

1.0 SPECIAL INSTRUCTIONS TO BIDDERS FOR E-TENDERING

1.1 GENERAL

The Special Instructions (for e-Tendering) supplement 'Instruction to Bidders', as given in these Tender Documents. Submission of Online Bids is mandatory for this Tender.

E-Tendering is a new methodology for conducting Public Procurement in a transparent and secured manner. For conducting electronic tendering, bidders shall use the portal https://etenders.gov.in/eprocure/app. Tender is invited in Single Stage -Two Envelope system, one Technical Bid and second as Financial bid.

1.2 SPECIAL INSTRUCTIONS TO BIDDERS FOR E-TENDERING

Instructions for Online Bid Submission

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal. More information useful for submitting online bids on the CPP Portal may be obtained at: https://etenders.gov.in/eprocure/app .

Registration

i. Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: https://etenders.gov.in/eprocure/app) by clicking on the link "**Online bidder Enrollment**" on the CPP Portal which is free of charge.

ii. As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

iii. Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.

iv. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra etc.), with their profile.

v. Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.

vi. Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

Searching For Tender Documents

i. There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.

ii. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e- mail in case there is any corrigendum issued to the tender document.

iii. The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

Preparation of Bids

i. Bidder should take into account any corrigendum published on the tender document before submitting their bids.

ii. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

iii. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.

iv. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

Note: My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in My Documents space, this does not automatically ensure these Documents being part of Technical Bid.

Submission of Bids

i. Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

ii. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

iii. Bidder has to select the payment option as "offline" to pay the tender fee / EMD as applicable and enter details of the instrument.

iv. Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected. – Not Applicable

v. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format

with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BoQ file, open it and complete the white colored (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

vi. The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

vii. All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128-bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid opener's public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

viii. Upon the successful and timely submission of bids (i.e. After Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

ix. The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

Assistance to Bidders

i. Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

ii. Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

For any technical related queries please call at 24 x 7 Help Desk Number:
0120-4001 002
0120-4001 005
0120-6277 787
International Bidders are requested to prefix +91 as country code
Email Support:
For any Issues or Clarifications relating to the published tenders, bidders are requested to contact the respective Tender Inviting Authority
Technical - support-eproc@nic.in
Policy Related - cppp-doe@nic.in

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) The Schedule of Quantity is given in **Section XI**. The tenderer has to quote their offer in Item Rate in Schedule of Quantities. The Item-Rate shall be quoted up to 2 decimals. The tenderer shall quote rate(s) in figures as well as in words. In case of any discrepancy between the two, rate(s) quoted in

words shall prevail. In case of discrepancy between quoted rate and amount, rate shall prevail. The payment will be made as per the actual work done and item wise measurement basis. Bidders are advised to examine the available Cost Index/ Market Rate while submitting the tender.

b) Bidders are advised to quote their rates including the lead/lift/carriage of material at site as per the site conditions. No request for the lead/lift carriage shall be considered after the award of the work.

c) 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, and conditions of contract, local conditions and other factors having bearings on the execution of the work.

d) 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.

e) 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.

f) 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.

g) 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.

h) 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 & drawings covered in the tender.

3.0 EARNEST MONEY DEPOSIT (EMD)

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

The EMD may be accepted only in the following forms:

- **Banker's cheque of a Scheduled Bank.**
- **Demand Draft of a Scheduled Bank.**
- **Fixed Deposit Receipt (FDR) of a Scheduled Bank in the name of WAPCOS Ltd.**

A part of earnest money is acceptable in the form of bank guarantee (in the specified format) also. In such cases 50% of earnest money or Rs. 20 lakh whichever is less, will have to be deposited in shape prescribed above and balance can be accepted in form of bank Guarantee issued by a scheduled bank as per the format mentioned in the tender (**Appendix-I).** The Bank Guarantee submitted as a part of Earnest Money shall be valid for a period of **SIX MONTHS** or more from the date of submission of the tender.

The EMD of unsuccessful tenderer(s) will be refunded after finalization of tender process. The Earnest Money deposit submitted by the successful tenderer shall be retained by WAPCOS Limited until the Performance Bank Guarantee (PBG) is submitted. EMD shall not carry any interest.

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 will 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 LOI/Contract. In case the LOI/Contract is silent in this regard then within 15 days after award of contract.
iii. The successful Tenderer shall not accept the LOI within 15 (Fifteen) days from receipt of the same. If failed, the EMD shall be forfeited and the award of work may be liable to be cancelled.

4.0 COST OF BIDDING

The Bidder shall bear all costs associated with the preparation & submission of the Bid as well as costs associated for facilitating the evaluation. WAPCOS Ltd 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 will be forfeited.

7.0 ANNEXURES

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

ANNEXURE - I	: GUARANTEE BONDS / AFFIDAVIT FOR WORK
ANNEXURE – II	: GUARANTEE BOND FOR WATER PROOFING TREATMENT
ANNEXURE – III	: PERFORMANCE SECURITY

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

SECTION– II

SELECTION AND QUALIFYING CRITERIA

SECTION-II
SELECTION AND QUALIFYING CRITERIA

1. SITE VISIT

Intending Bidder(s) are advised 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 ground & sub-soil (so far as is practicable), the form & nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. 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.

Site visit is to understand the actual scope of work, site condition, details & levels of already constructed structure & balance works to be done and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The site visit may be conducted by the bidder any time before the last date of submission of the bid. **Before site visit, the bidder may request at email ID mentioned in NIT (wapcosiimm@gmail.com) for site visit mentioning the date & time of visit**. Accordingly, it is advised to bidders to visit the site with proper authorization letter of bidder representative from Bidder Company/ agencies. Bidder representative will submit the authorization letter to WAPCOS representative (Contact No. for Site visit Addl Chief Engineer – Mob. +91 85272 10511.

2. QUALIFYING CRITERIA: ONLINE TECHNICAL BID SUBMISSION

The intending bidders must read the terms & conditions of tender documents carefully. He should only submit his 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 and clearly marked page no. and sign & stamp on each page of the Technical Bid *(MANDATORY)*.**

Table 2: Format of Check List

S.N	Particular of Document	Yes	No	Page Nos. (from – to)
a)	Authorization Letter to sign the Tender on bidder's original letter head or Power of attorney or Board Resolution from the competent authority of the firm.			
b)	Scanned copy of EMD of amount as mentioned in NIT.			
c)	Scanned copy of Demand Draft for Tender Fees of the amount as mentioned in NIT.			
d)	Letter of Transmittal for Technical Bid in prescribed format on bidder's original letter Head **(Form-1).**			
e)	Yearly Turnover and Audited Balance Sheet for Last 3 (three) years ending on the financial year 2023-24.			
	• The Bidder should not have incurred any loss in more than two financial years out of last 5 financial			

	years ending on 31.03.2024. Audited Balance Sheet and Profit & Loss account (for 5 years) must be submitted with Bid.			
	• **Turnover:** Average annual financial turnover of the Bidder should be at least 50% of the Estimated Value of work during immediate last 3 consecutive financial years i.e. 2021-22, 2022-23 & 2023-24. Certificate issued by Chartered Accountant with registration number, seal and UDIN must be submitted.			
f)	Name, Address, details of the Organization, Name(s) of the Owner/Partners/Promoters and Directors of the firm / company. **(Form-B)**			
g)	Bidder should not be blacklisted/ debarred by any government/ semi government department/ PSU. Bidders shall give undertaking for not being involved in any form of corrupt and fraudulent practices. **(Form-C).**			
h)	Letter of understanding of the project site on bidder's Letter Head **(Form-D).**			
i)	'No Deviation Certificate' in prescribed format in Bidder's Letter Head **(Form-E).**			
j)	Consent Letter to execute the Integrity Pact **(Form-F).**			
k)	Bidder shall submit Information on litigation history, liquidated damages, disqualification etc. in bidder Letter Head **(Form-G)**.			
l)	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 issued by nationalized or schedule Commercial bank 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 of Tender)** from Banker **in Original** for a sum of at least 40% of the Estimated Value of work. **(Form-I).** **The Date of Solvency Certificate shall be after the date of publication of NIT**			
m)	The Bidder as a Prime Contractor should have satisfactorily completed any similar work in the last seven years ending on the last date of bid submission of value with any State/ Central Government Organization/ PSU/ Govt. Autonomous Body One work of at least 80% of Estimated value of Project Or Two works of at least 60% of Estimated Value of Project Or Three works of at least 40% of Estimated Value of Project			

	(Form-J) **Similar work means "Repair & Renovation/ Upgradation/ New construction works for any Building with Structure including Electrical, Plumbing works for any State/ Central Government Organization/ PSU in India.** The bidder shall submit **Completion Certificate(s)** along with Supply Order from respective Owner(s)/Client(s).			
n)	The bidder shall have completed atleast one work of New/ Repair of existing Solar Heating System with any Organization of more than 10 lacs value in the last 7 years. or In case the bidder does not have the experience of Solar Heating System, he may associate with any Agency having experience of New/ Repair of existing Solar Heating System with any Organization of more than 10 lacs value in last 7 years by submitting A Memorandum of Understanding on non-judicial stamp paper of Rs. 100/- (Notarized) along with the Technical Bid with all the documentary proof of such experience. The Associated Agency shall not be allowed to be changed after award of work.			
o)	~~The bidder should have a back-end support agreement/ arrangement for services including supply of spare parts etc. with the Original Equipment Manufacturer (OEMs) which includes the post-sales support activities for the entire warranty period.~~ ~~**Valid documentary proof:**~~ ~~- The Manufacturer's undertaking letter~~			
p)	Copy of P.F and PAN Number.			
q)	**Goods and Service Tax (GST):** Bidders are advised to get themselves registered for GST, 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 under GST as per Govt. norms before submission of bills.			
r)	The bidder should be an Indian Registered Company under Companies Act 1956/2013 Proprietorship Firm/ Partnership Firm/ Limited company private or public or corporation. 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.			
s)	Each page of the all Volume of Tender document & Addendum/ Corrigendum shall be digitally signed 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 Limited **(To be submitted Online only. Not required in Offline Submission)**			

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 of work, it may be rejected. This process is to assure that only technical acceptable bids are considered for the tendered work.

Contractors who fulfill the above requirements shall be eligible to apply.

3. OFFLINE SUBMISSIONS OF DOCUMENTS

The Bidder shall submit following Document offline also.

1) **All the documents in Original, which is uploaded as Technical Bid (See Checklist,** In Qualifying Criteria: Online Technical Bid Submission **of Section-II, Table-2) shall be submitted with page numbering in** separate sealed envelope clearly labeled 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. **All the pages of the Technical Bid must be stamped & signed**. The Bid shall be liable to be rejected if not page numbered and Stamped with signature.

2) **EMD & Tender submission fee in Original** in separate sealed envelope clearly labeled as "EMD & TENDER FEE" for the work (Write Name of Work/Project as mentioned in NIT) along with Details of Bidders Address, Phone, and E-mail on Envelope.

NOTE: Above two envelopes shall be submitted in one single envelope clearly labeled as "Documents for Offline Submission" for the Work (Write Name of Work/Project as mentioned in NIT) along with Details of Bidders Address, Phone, and E-mail on Envelope.

The offline submissions (duly stamped & signed) as mentioned above shall be submitted on WAPCOS address as per date & time mentioned in NIT. In case of non-submission of above offline documents, bids are liable to be rejected.

Note: *W*APCOS reserves the right to waive minor deviations/submissions if they do not materially affect the capability of the Tenderer to perform the contract.

4. CONTENTS OF FINANCIAL BID

The Financial Bid should be uploaded separately along with Technical bid before last date & time of submission of Tender Document.

The quoted cost filled in Summary of Cost, by bidders, should include all associated costs with the project including any out of pocket / mobilization expenses/ Custom duty (if any), Buildings and other construction workers' welfare cess, TDS, taxes (except GST) if any applicable as per Govt. terms, shall be paid by the Contractor. The Goods and Services Tax (GST) is included in the quoted cost.

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 be reimbursed to the Agency only after uploading of bills by Contractor on GST Portal "to avail Input benefit of GST" as per IIM Mumbai Procedures.

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 in force on the date of submission of bid or to be newly / amended introduced during the execution of the Contract.
The tenderer shall quote cost 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 by the IIM Mumbai directly to the contractor as per the schedule of stage wise payment.

The Summary of cost to be filled for this tender is attached in Microsoft Excel format, bidder shall quote the amount only in soft format to avoid mistakes. The bidder will upload same filled soft Microsoft Excel copy during uploading of financial bid.

5. OPENING OF FINANCIAL BID

The financial bids of the technically qualified bidders shall be opened at the notified date & time after technical evaluation stage.

6. AWARD CRITERIA

After closing of Technical & Financial Bid process, WAPCOS Ltd. shall recommend the successful bidder to Indian Institute of Management Mumbai for further award the contract to the bidder whose tender has been determined to be substantially responsive, complete and in accordance with the tender document, and whose total evaluation price for the undertaking the project as detailed in the scope of work is the lowest (L1). If the financial bids of lowest two bidders are equal, then the tender will be treated as cancelled and shall be re-tendered as per the WAPCOS rules. IIM Mumbai/ PMC reserves the right to negotiate with the L-1 Bidder if the rates quoted are found unreasonably high.

IIM Mumbai shall issue the Letter of Award to the successful bidder and further the Agreement shall be signed between the IIM Mumbai and the successful bidder.

However, WAPCOS / IIM Mumbai reserves the right to reject the Lowest bidder or to cancel the Tender, without assigning any reason(s) whatsoever.

For & on behalf of Tenderer

(Authorized Signatory)

SECTION – III

GENERAL CONDITIONS OF CONTRACT

SECTION – III
GENERAL CONDITIONS TO CONTRACT

1.0 GENERAL RULES AND DIRECTIONS

General Rules & 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	Any person who submits a tender shall fill up the usual printed form, stating at what rate he is willing to undertake each item of the work. Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort, including conditional rebates, will be summarily rejected. 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 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 online. The lowest tender shall be decided on the basis of revised offer. In case all the lowest contractors those have same tendered amount (as a result of their quoted rate of individual items), refuse to submit revised offers, then tenders are to be recalled after forfeiting 50% of EMD of each lowest contractors. Contractor, whose earnest money is forfeited because of non-submission of revised offer, or quoting higher revised rate(s) of any item(s) than their respective original rate quoted already at the time of submission of his bid shall not be allowed to participate in the retendering process of the work.
	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 as per NIT.
	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.	Deleted
	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.
	9A	Use of correcting fluid, anywhere in tender document is not permitted. Such tender is liable for rejection.
	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.
	10A	Deleted
	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.
	12A	Deleted
	13.	i. The Contractor, whose tender is accepted, will be required to furnish performance guarantee of 5% (Five Percent) of the tendered amount within the period specified in Special Conditions of Contract. This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 10,000/-) or Deposit at call receipt of any scheduled bank/Banker's cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form.

		ii. 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 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 mentioned above. The Security amount will also be accepted in cash or in the shape of Government Securities. Fixed Deposit Receipt of a Scheduled Bank or State Bank of India will also be accepted for this purpose provided confirmatory advice is enclosed.
	14.	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.
	15.	All the taxes including GST applicable in respect of this contract shall be payable by the Contractor and WAPCOS/ IIM Mumbai will not entertain any claim whatsoever in respect of the same.
	16.	The contractor shall give a list of WAPCOS/ IIM Mumbai employees related to him.
	17.	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.
	18.	The tender for composite work includes construction of balance civil work, water supply and sanitation, electrification work, HVAC, Building Management System, External Development Works, horticulture work, roads, paths etc. and allied works. The tenderer apart from being a registered contractor (B&R) of appropriate class, 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.
	19.	Deleted
	20.	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/ IIM Mumbai 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 IIM Mumbai 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:- i. **"Client/ Employer"** shall mean "Director, Indian Institute of Management Mumbai" having address at 1st Floor, NITIE Admin Block, Powai, Mumbai, IIM Mumbai, Vihar Lake Rd, Maharashtra 400087 & include their successors & permitted assigns as well as their authorized officer / representatives, for execution of the Work / Project as mentioned in NIT. ii. The "**PMC/ Company / WAPCOS**" shall mean WAPCOS Limited. iii. "Principal Client Owner" shall mean "IIM Mumbai" having their office at Powai, Mumbai & include their successors & permitted assigns as well as their authorized officer / representatives, for execution of the Work / Project as mentioned in NIT. iv. 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. v. 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. vi. The **Bidder** 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 who are participating in Bidding process and will Execution the project after award of the works as Contractor. vii. The **Engineer-in-Charge** shall 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 viii. **Accepting Authority** shall mean the authority mentioned in Special Conditions of Contract. ix. **Tenderer / Bidder** shall mean the firm/party who intends to participate in this Notice Inviting Tender. x. **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. xi. **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.

		xii. **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 upto the date of receipt of the tender. xiii. **District Specifications** shall means the specifications followed by the State Government in the area where the work is to be executed. xiv. The **Contractor/Successful Bidder** shall mean the firm or company whose bid has been found responsive by WAPCOS and accepted by IIM Mumbai and 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. xv. **Consultant** shall mean WAPCOS or any consultant nominated by the WAPCOS xvi. **Tendered value** means the value of the entire work as stipulated in the letter of award. xvii. **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 contract documents except standard specifications 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 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) **rates & prices** 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 Adjustment of Errors	8.	The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in 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, the Specifications and/ or the Drawings, the following order of preference shall be observed:- i. Description of Schedule of Quantities 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 15 days from the stipulated date of start of the work, sign the contract consisting of:- i. The notice inviting tender, all the documents including corrigendum, drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto. ii. Agreement & acceptance of the following: a) Various standard clauses with corrections up to the date stipulated in Special Conditions of Contract along with annexures thereto. b) Safety Codes. c) Model Rules for the protection of health, sanitary arrangements for workers employed WAPCOS or contractors. d) Contractor's Labour Regulations. e) List of Acts and omissions for which fines can be imposed. f) 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

i. The contractor shall submit an irrevocable **Performance Guarantee of 5% (Five percent) of the tendered amount** to IIM Mumbai 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. 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.

ii. This guarantee shall be in the form of Cash (in case guarantee amount is less than Rs. 10,000/-) or Banker's Cheque /Demand Draft (in case guarantee amount is less than Rs. 1,00,000/-) or Fixed Deposit Receipts or Guarantee Bonds of any Nationalized/ scheduled commercial Bank in accordance with the form annexed hereto. In case a fixed deposit receipt of any Bank is furnished by the contractor to the IIM Mumbai as part of the performance guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the IIM Mumbai to make good the deficit.

iii. **The Performance Guarantee shall be initially valid up to 60 days beyond the stipulated date of completion plus 1 year claim period beyond that**. In case the time for completion of work get 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. However, in case of contracts involving maintenance of building and services/any

other work after construction of same building and services/other work, then 50% of Performance Guarantee shall be retained as Security Deposit. The same shall be returned year wise proportionately.

iv. The Engineer-in-Charge shall not make a claim under the performance guarantee except for amounts to which the IIM Mumbai 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 IIM Mumbai 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.

v. 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 and shall be absolutely at the disposal of IIM Mumbai.

vi. The Performance Guarantee shall be refunded to the Contractor soon after the completion of works and issuance of the completion certificate.

CLAUSE 1A: RECOVERY OF SECURITY DEPOSIT

The person/persons whose tender(s) may be accepted (hereinafter called the contractor) shall permit at the time IIM Mumbai of making any payment to him for work done under the contract to deduct a sum at the rate of 5% of the gross amount of each running and final bill till the sum deducted will amount to security deposit of 5% of the tendered value of the work. Such deductions will be made and held by IIM Mumbai by way of Security Deposit unless he/they has/have deposited the amount of Security at the rate mentioned above in cash or in the form of Government Securities or fixed deposit receipts. In case a fixed deposit receipt of any Bank is furnished by the contractor to the IIM Mumbai as part of the security deposit and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the IIM Mumbai to make good the deficit.

All compensations or the other sums of money payable by the contractor under the terms of this contract may be deducted from, or paid by the sale of a sufficient part of his security deposit or from the interest arising therefrom, or from any sums which may be due to or may become due to the contractor by IIM Mumbai on any account whatsoever and in the event of his Security Deposit being reduced by reason of any such deductions or sale as aforesaid, the contractor shall within 10 days make good in cash or fixed deposit receipt tendered by the State Bank of India or by Scheduled Banks endorsed in favour of IIM Mumbai, any sum or sums which may have been deducted from, or raised by sale of his security deposit or any part thereof. The security deposit shall be collected from the running bills and the final bill of the contractor at the rates mentioned above.

The security deposit as deducted above can be released against bank guarantee issued by a scheduled bank, on its accumulations to a minimum of Rs. 5 lac subject to the condition that amount of such bank guarantee, except last one, shall not be less than Rs. 5 lac. Provided further that the validity of bank guarantee including the one given against the earnest money shall be in conformity with provisions contained in clause 17 which shall be extended from time to time depending upon extension of contract granted under provisions of clause 2 and clause 5.

The Security Deposit shall be released after successful completion of Defect Liability Period of 1 Year.

In case of contracts involving maintenance of building and services/any other work after construction of same building and services/other work, then 50% of Performance Guarantee shall be retained as Security Deposit. The same shall be returned year wise proportionately.

Note-1: Government papers tendered as security will be taken at 5% (five per cent) below its market price or at its face value, whichever is less. The market price of Government paper would be ascertained by the Divisional Officer at the time of collection of interest and the amount of interest to the extent of deficiency in value of the Government paper will be withheld if necessary.

Note-2: Government Securities will include all forms of Securities mentioned in Rule No. 274 of the G.F. Rules except fidelity bond. This will be subject to the observance of the condition mentioned under the rule against each form of security.

Note-3: Note 1 & 2 above shall be applicable for both clause 1 and 1A

CLAUSE 2: COMPENSATION FOR DELAY

lf 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 justified extended date of completion as per clause 5 (excluding any extension under Clause 5,51 as well as any extension granted under clauses 12 and 15, he shall, without prejudice to any other right or remedy available under the law to the Government on account of such breach, pay as compensation the amount calculated at the rates stipulated below as the authority specified in schedule 'F' may decide on the amount of Tendered Value of the work for every completed day month (as determined) that the progress remains below that specified in Clause 5 or that the work remains incomplete.

(i) **Compensation for delay of work @ 0.50% of the total project cost per week 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 Sectional part of work as mentioned In Schedule 'F' for which a separate period of completion is originally given.

In case no compensation has been decided by the authority in Schedule 'F' during the progress of work, this shall be no waiver of right to levy compensation by the said authority if the work remains incomplete on final justified extended date of completion. If the Engineer in Charge decides to give further extension of time allowing performance of work beyond the justified extended date, the contractor shall be liable to pay compensation for such extended period. If any variation in amount of contract takes place during such extended period beyond justified extended date and the contractor becomes entitled to additional time under clause 12, the net period for such variation shall be accounted for while deciding the period for levy of compensation. However, during such further extended period beyond the justified extended period, if any delay occurs by events under sub clause 5.2, the contractor shall be liable to pay compensation for such delay.

Provided that compensation during the progress of work before the justified extended date of completion for delay under this clause shall be for non-achievement of sectional completion or part handing over of work on stipulated/justified extended date for such part work or if delay affects any other works/services. This is without prejudice to right of action by the Engineer in Charge under clause 3 for delay in performance and claim of compensation under that clause

In case action under clause 2 has not been finalized and the work has been determined under clause 3, the right of action under this clause shall remain post determination of contract but levy of compensation shall be for days the progress is behind the schedule on date of determination, as assessed by the authority in Schedule F, after due consideration of justified extension. The compensation for delay, if not decided before the determination of contract, shall be decided after of determination of contract.

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 Government. In case, the contractor does not achieve a particular milestone mentioned in schedule F, 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 as above With-holding 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: In case, the contractor completes the work ahead of stipulated date of completion or justified extended date of completion as determined under clauses 5.3, 12 & 15, 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. Provided that justified time for extra work shall be calculated on pro-rata basis as cost of extra work X stipulated period /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 'Schedule F'.

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 un workman 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 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 or section of work with individual date of completion on or before the stipulated or justified extended date, on or before such date of completion; and the Engineer in Charge without any prejudice to any other right or remedy under any other provision in the contract has given further reasonable time in a notice given in writing in that behalf as either mutually agreed or in absence of such mutual agreement by his own assessment making such time essence of contract and in the opinion of Engineer-in-Charge the contractor will be unable to complete the same or does not complete the same within the period specified.

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 PMC/ IIM Mumbai 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 IIM Mumbai.

vi. If the contractor shall enter into a contract with IIM Mumbai 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 IIM Mumbai 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 (excluding part(s) of work assigned to other agency(s) by the contractor as per terms of contract), transfers, sublet (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 IIM Mumbai shall have powers:

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

a) To determine the contract as aforesaid so far as performance of work by the Contractor is concerned (of which determination notice in writing to the contractor under the hand of the Engineer• in-Charge shall be conclusive evidence). Upon such determination, the Earnest Money Deposit, 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 Government.

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.

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

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 by giving notice to the other party stating the reasons. 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 lac	15 days
b)	If the Tendered value of work is more than Rs.45 lac and up to Rs. 2.5 Crore	21 days
c)	If the Tendered value of work exceeds Rs. 2.5 Crore :	30 days

Neither party shall claim any compensation for such eventuality. This clause is not applicable for any breach of the contract by either party

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

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 Schedule 'F' or the extended time in accordance with these conditions shall be the essence of the Contract, The execution of the work shall commence from such time period as mentioned in schedule 'F' or from the date of handing over of the site, notified by the Engineer-in-Charge, whichever is later. However, the handing over of site by the Engineer in Charge, in full or in part (if so provided in contract), shall be completed within two months from issue of acceptance letter. If the Contractor commits default in commencing the execution of the work as aforesaid, the performance guarantee shall be forfeited by the Engineer in Charge and shall be absolutely at the disposal of the Government without prejudice to any other right or remedy available in law.

5.1 As soon as possible but within twenty one days of award of work and in consideration of
a) Schedule of handing over of site as specified in the Schedule 'F'
b] Schedule of issue of designs as specified in the Schedule 'F'

(i) The Contractor shall submit a Time and Progress Chart for each mile stone. The Engineer-in-Charge may within 30 days thereafter, if required modify, and communicate the program approved to the contractor failing which the program submitted by the contractor shall be deemed to be approved by the Engineer-in Charge. The work programme shall include all details of balance drawings and decisions required to complete the contract with specific dates by which these details are required by contractor without causing any delay in execution of the work. 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 Schedule 'F'.

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. 2500/- (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 above programme.

(ii) In case of non-submission of construction programme by the contractor the program approved by the Engineer-in-Charge shall be deemed to be final.

(iii) The approval by the Engineer-in-Charge of such programme shall not relieve the contractor of any of the obligations under the contract.

(iv) The contractor shall submit the Time and Progress Chart and progress report using the mutually agreed software or in other format decided by Engineer-in-Charge 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. 2500/ - (for works costing upto Rs. 20 Crores) I Rs. 5000/- (for works costing more than Rs. 20 Crores) shall be made on per week or part 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 IIM Mumbai to supply or
(vii) non-availability or break down of tools and Plant to be supplied or supplied by IIM Mumbai or
(viii) Any other cause like above 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 Engineer in-Charge for entry in the hindrance register (physical or web-based as prescribed in schedule F) 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. The contractor shall have no claim of damages for extension of time granted or rescheduling of milestone/s for events listed in sub clause 5.2.

5.3 In case the work is hindered by any reasons, in the opinion of the contractor, by the Department or for someone for whose action the Department is responsible, the contractor may immediately give notice thereof in writing to the Engineer-in-Charge in the same manner as prescribed under sub Clause 5.2 seeking extension of time or rescheduling of milestone/s. The authority as indicated in Schedule 'F' shall, if justified, give a fair and reasonable extension of time and reschedule the mile stones for completion of work after due consideration of the same within 30 days of receipt of such request. In event of non-application by the contractor for extension of time E-in-C after affording opportunity to the contractor may give, supported with a programme, a fair and reasonable extension within a reasonable period of occurrence of the event.

Such extension of time or rescheduling of milestone/s shall be without prejudice to any other right or remedy of the parties in contract or in law; provided further that for concurrent delays under this sub clause and sub clause 5.2 to the extent the delay is covered under sub clause 5.2 the contractor shall be entitled to only extension of time and no damages

5.4 Request for rescheduling of Mile stones or 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 forms i.e. Form of application by the contractor for seeking rescheduling of milestones (Appendix-XVI) or Form of application by the contractor for seeking extension of time (Appendix -XVII) respectively to the authority as indicated in Schedule 'F'. The Contractor shall indicate in such a request the period by which rescheduling of milestone/s or extension of time is desired.

With every request for rescheduling of milestones, or if at any time the actual progress of work falls behind the approved programme by more than 10% of the stipulated period of completion of contract, the contractor shall produce a revised programme which shall include all details of pending drawings and decisions required to complete the contract and also the target dates by which these details should be available without causing any delay in execution of the work. A recovery as specified in Schedule 'F' shall be made on per day basis in case of delay in submission of the revised programme.

5.4.1 In any such case the authority as indicated in Schedule 'F' may give a fair and reasonable extension of time for completion of work or reschedule the mile stones. Such extension or rescheduling of the milestones shall be communicated to the Contractor by the authority as indicated in Schedule 'F' in writing, within 30 days of the date of receipt of such request from the Contractor in prescribed form. In event of non-application by the contractor for extension of time E-in-C after affording opportunity to the contractor, may give, supported with a programme (as specified under 5.4 above), a fair and reasonable extension within a reasonable period of occurrence of the event.

5.5 In case the work is delayed by any reasons, in the opinion of the Engineer-in-Charge, by the contractor for reasons beyond the events mentioned in clause 5.2 or clause 5.3 or clause 5.4 and beyond the justified extended date; without prejudice to right to take action under Clause 3, the Engineer-in-Charge may grant extension of time required for completion of work without rescheduling of milestones. The contractor shall be liable for levy of compensation for delay for such extension of time.

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 PMC 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 PMC 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 IIM Mumbai 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 sheet 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 sheet 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 IIM Mumbai a computerized measurement book, duly bound, and with its pages 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 pages machine numbered, should be 100% correct, and no cutting or over-writing in the measurements 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 PMC separately his computerized Abstract of Cost and the bill based on these measurements, duly bound, and its pages machine numbered along with two spare copies of the bill. Thereafter, this bill will be processed by the PMC for payment by IIM Mumbai

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 Engineer-In-Charge 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. One lac or less till after the whole of the work shall have been completed and certificate of completion given. For work estimated to cost over Rs. One lac, 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 Department 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 Schedule 'F', 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, 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 or his Asstt. Engineer together with the account of the material issued by the department, 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. In case of delay in payment of intermediate bills after 45 days of submission of bill by the contractor provided the bill submitted by the contractor found to be in order, a simple interest @ 10% per annum shall be paid to the contractor from the date of expiry of prescribed time limit which will be compounded on yearly basis.

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 IIM Mumbai 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 Asstt. Engineer 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 to be submitted by the contractor within 10 days of the interim payment. In case of delay in submission of bill by the contractor a simple interest @ 10% per annum shall be paid to the Government from the date of expiry of prescribed time limit which will be compounded on yearly basis.

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 IIM Mumbai 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 of 0.1 % of Tendered Value or limit prescribed in Schedule F whichever is more as may be fixed by the Superintending Engineer concerned and in this respect the decision of the Superintending Engineer shall be final and binding on the contractor.

The contractor shall submit completion plans for Internal and External Civil, Electrical and Mechanical Services within thirty days of the completion of the work, provided that the service plans having been issued for execution by the Engineer-in-Charge, unless the contractor, by virtue of any other provision in the contract, is required to prepare such plans.

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 one month of the date of the final certificate of completion furnished by the Engineer-in-Charge. 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 hereinunder, 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 IIM Mumbai and dismantled materials.

a)	Tendered value of work is up to Rs. 45 lac	2 months
b)	If the Tendered value of work is more than Rs. 45 lac 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 IIM Mumbai or his signature on the bill or other claim preferred against IIM Mumbai 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 favor of the bank; registered financial, co-operative or thrift societies or recognized financial institutions any rights or equities vis-à-vis the IIM Mumbai

CLAUSE 10: MATERIALS SUPPLIED BY IIM Mumbai

Materials which IIM Mumbai will supply are shown in Special Conditions of Contract (SCC) which also stipulates quantum, place of issue and rate(s) to be charged in respect thereof. The contractor shall be bound to procure them from the Engineer-in-Charge.

As soon as the work is awarded, the contractor shall finalize the programme for the completion of work as per clause 5 of this contract and shall give his estimates of materials required on the basis of drawings/or schedule of quantities of the work. The Contractor shall give in writing his requirement to the Engineer-in-Charge which shall be issued to him keeping in view the progress of work as assessed by the Engineer-in-Charge, in accordance with the agreed phased programme of work indicating monthly requirements of various materials. The contractor shall place his indent in writing for issue of such materials at least 7 days in advance of his requirement.

Such materials shall be supplied for the purpose of the contract only and the value of the materials so supplied at the rates specified in the aforesaid schedule shall be set off or deducted, as and when materials are consumed in items of work (including normal wastage) for which payment is being made to the contractor, from any sum then due or which may therefore become due to the contractor under the contract or otherwise or from the security deposit. At the time of submission of bills, the contractor shall certify that balance of materials supplied is available at site in original good condition.

The contractor shall submit along with every running bill (on account or interim bill) material wise reconciliation statements supported by complete calculations reconciling total issue, total consumption and certified balance (diameter/section-wise in the case of steel) and resulting variations and reasons therefore. Engineer-in-Charge shall (whose decision shall be final and binding on the contractor) be within his rights to follow the procedure of recovery in clause 42 at any stage of the work if reconciliation is not found to be satisfactory.

The contractor shall bear the cost of getting the material issued, loading, transporting to site, unloading, storing under cover as required, cutting assembling and joining the several parts together as necessary. Notwithstanding anything to the contrary contained in any other clause of the contract and (or the CPWA Code) all stores/materials so supplied to the contractor or procured with the assistance of the IIM Mumbai shall remain the absolute property of IIM Mumbai and the contractor shall be the trustee of the stores/materials, and the said stores/materials shall not be removed/disposed off from the site of the work on any account and shall be at all times open to inspection by the Engineer-in-Charge or his authorized agent. Any such stores/materials remaining unused shall be returned to the Engineer-in- Charge in as good a condition in which they were originally supplied at a place directed by him, at a place of issue or any other place specified by him as he shall require, but in case it is decided not to take back the stores/materials the contractor shall have no claim for compensation on any account of such stores/materials so supplied to him as aforesaid and not used by him or for any wastage in or damage to in such stores/materials.

On being required to return the stores/materials, the contractor shall hand over the stores/ materials on being paid or credited such price as the Engineer-in-Charge shall determine, having due regard to the condition of the stores/materials. The price allowed for credit to the contractor, however, shall be at the prevailing market rate not exceeding the amount charged to him, excluding the storage charge, if any. 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 account for contravention of the terms of the licenses or permit and/or for criminal breach of trust, be liable to IIM Mumbai for all advantages or profits resulting or which in the usual course would have resulted to him by reason of such breach. Provided that the contractor shall in no case be entitled to any compensation or damages on account of any delay in supply or non-supply thereof all or any such materials and stores provided further that the contractor shall be bound to execute the entire work if the materials are supplied by the IIM Mumbai within the original scheduled time for completion of the work plus 50% thereof or schedule time plus 6 months whichever is more if the time of completion of work exceeds 12 months, but if a part of the materials only has been supplied within the aforesaid period, then the contractor shall be bound to do so much of the work as may be possible with the materials and stores supplied in the aforesaid period. For the completion

of the rest of the work, the contractor shall be entitled to such extension of time as may be determined by the Engineer-in-Charge whose decision in this regard shall be final and binding on the contractor.

The contractor shall see that only the required quantities of materials are got issued. Any such material remaining unused and in perfectly good/original condition at the time of completion or determination of the contract shall be returned to the Engineer-in-Charge at the stores from which it was issued or at a place directed by him by a notice in writing. The contractor shall not be entitled for loading, transporting, unloading and stacking of such unused material except for the extra lead, if any involved, beyond the original place of issue.

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 IIM Mumbai

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 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 and other bought out items, at the discretion of IIM Mumbai, 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 in Annexure XVIII by the Engineer-in-Charge, shall be entitled to be paid during the progress of the execution of the work up to 75% 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.

(ii) MOBILISATION ADVANCE

Mobilization advance not exceeding 10% 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 in two or more installments to be determined by the Engineer-in- Charge at his sole discretion. The first installment of 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. The second and subsequent installments shall be released by the Engineer-in-Charge only after the contractor furnishes a proof of the satisfactory utilization of the earlier installment to the entire satisfaction of the Engineer-in-Charge.

Before any installment of advance is released, 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. This (Bank Guarantee from Scheduled Bank for the amount equal to 110% of the balance amount of advance) shall be kept renewed from time to time to cover the balance amount and likely period of complete recovery.

(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 Value 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 IIM Mumbai 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.

(iv) INTEREST & RECOVERY

The mobilization advance and secured advance in (i) & (ii) 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 contractors 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, if the price of any material incorporated in the works (excluding the materials covered under Clause lOCA 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 variation of rates in GST applicable on such material(s) being considered under this clause) 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.

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 sales tax/VAT, Central/State Excise/Custom Duty), IIM Mumbai 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 85% of the value of the work executed during period under consideration shall not exceed the percentage as specified in Schedule F, and the increase/decrease in labour shall be considered on the minimum daily wages in rupees of any unskilled mazdoor, fixed under any law, statutory rule or order.

CLAUSE 10CA: 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 IIM Mumbai 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 IIM Mumbai PROPERTY

The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work, etc. as IIM Mumbai property and such materials shall be disposed off to the best advantage of IIM Mumbai 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.

At least to 10% of prescribed Tests as per Central Public Works Department Manual/IS Codes/MORTH of construction materials shall be carried out from the outside approved/NABL recognized Laboratory as may be approved by PMC without any extra expenditure to IIM Mumbai.

The Contractor shall establish a field test laboratory on the site with latest equipment's for carrying out field tests of construction materials and will maintain proper records of all the test results.

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 –

A. For Project and Original Works

In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in schedule F, 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.

B. For Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration:

In the case of Extra Item(s) being the schedule items (Delhi Schedule of Rates items), these shall be paid as per the schedule rate plus cost index (at the time of tender) plus/minus percentage above/ below quoted contract amount.

Payment of Extra items in case of non-schedule items (Non-DSR items) shall be made as per the prevailing market rate.

12.2(b)Deviations, Substituted Items and Pricing.

A. For Project and original works:
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) (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).

B. For Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration:
In the case of Substitute Item(s) being the schedule items (Delhi Schedule of Rates items), these shall be paid as per the schedule rate plus cost index (at the time of tender) plus/minus percentage above/ below quoted contract amount. Payment of Substitute in case of non-schedule items (Non-DSR items) shall be made as per the prevailing market rate.

12.2(c) Deviations Deviated Quantities, Pricing.

A. For Project and original works:
In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in schedule F, 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.

B. For Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration:
In the case of contract items, which exceed the limits laid down in schedule F, the contractor shall be paid rates specified in the schedule of quantities.

The prescribed time limits for finalizing rates for Extra Item(s), Substitute Item(s) and Deviated Quantities of contract items are as under:
(i) If the Tendered value of work is up to Rs. 45 lac : 30 days.
(ii) If the Tendered value of work is more than Rs 45 lac and up to Rs. 2.5 Crore : 45 days.
(iii) If the Tendered value of work exceeds Rs. 2.5 Crore : 60 days.

12.3 A. For Project and original works:
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 Schedule F, 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.

B. For Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration:
In case of decrease in the rates prevailing in the market of items for the work in excess of the limits laid down in Schedule F, 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 every three months, 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.

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. **(This clause 12.6 is Not Applicable)**

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

If at any time after acceptance of the tender or during the progress of work, the purpose or object for which the work is being done changes due to any supervening cause and as a result of which the work has to be abandoned or reduced in scope the Engineer-in-Charge shall give notice in writing to that effect to the contractor stating the decision as well as the cause for such decision 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 and, in addition, a reasonable amount as certified by the Engineer-in-Charge for the items hereunder mentioned which could not be utilized on the work to the full extent in view of the foreclosure;

(i) Any expenditure incurred on preliminary site work, e.g. temporary access roads, temporary labour huts, staff quarters and site office; storage accommodation and water storage tanks.

(ii) IIM Mumbai shall have the option to take over contractor's materials or any part thereof either brought to site or of which the contractor is legally bound to accept delivery from suppliers (for incorporation in or incidental to the work). For materials taken over or to be taken over by IIM Mumbai, cost of such materials as detailed by Engineer-in- Charge shall be paid. The cost shall, however, take into account purchase price, cost of transportation and deterioration or damage which may have been caused to materials whilst in the custody of the contractor.

(iii) If any materials supplied by IIM Mumbai are rendered surplus, the same except normal wastage shall be returned by the contractor to IIM Mumbai at rates not exceeding those at which these were originally issued, less allowance for any deterioration or damage which may have been caused whilst the materials were in the custody of the contractor. In addition, cost of transporting such materials from site to IIM Mumbai stores, if so required by IIM Mumbai, shall be paid.

(iv) Reasonable compensation for transfer of T & P from site to contractor's permanent stores or to his other works, whichever is less. If T & P are not transported to either of the said places, no cost of transportation shall be payable.

The contractor shall, if required by the Engineer- in-Charge, furnish to him, books of account, wage books, time sheet and other relevant documents and evidence as may be necessary to enable him to certify the reasonable amount payable under this condition.

The reasonable amount of items on (i), (iv) and (v) above shall not be in excess of 2% of the cost of the work remaining incomplete on the date of closure, i.e. total stipulated cost of the work as per accepted tender less the cost of work actually executed under the contract and less the cost of contractor's materials at site taken over by the IIM Mumbai as per item (ii) above. Provided always that against any payments due to the contractor on this account or otherwise, the Engineer-in-Charge shall be entitled to recover or be credited with any outstanding balances due from the contractor for advance paid in respect of any tool, plants and materials and any other sums which at the date of termination were recoverable by the IIM Mumbai from the contractor under the terms of the contract.

In the event of action being taken under Clause 13 to reduce the scope of work, the contractor may furnish fresh Performance Guarantee on the same conditions, in the same manner and at the same rate for the balance tendered amount and initially valid up to the extended date of completion or stipulated date of completion if no extension has been granted plus 60 days beyond that. Wherever such a fresh Performance Guarantee is furnished by the contractor the Engineer-in-Charge may return the previous Performance Guarantee.

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

If contractor:

(i) 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

(ii) 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 IIM Mumbai, 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 IIM Mumbai 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 IIM Mumbai 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 IIM Mumbai in completing the part work/ part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by IIM Mumbai as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to IIM Mumbai 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

(i) 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.

(ii) 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.

(iii) 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 sub-Para (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 IIM Mumbai or where it affects whole of the works, as an abandonment of the works by IIM Mumbai, 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 IIM Mumbai, 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 IIM Mumbai for the loss suffered by him on account of delay by IIM Mumbai 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 IIM Mumbai. 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-ln-charge, his authorized subordinates in charge of the work and all the superior officers, officer of the Quality Assurance Unit of the PMC or any organization engaged by the IIM Mumbai 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 IIM Mumbai 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 one year from the date of completion of development and construction works. During this period the Contractor will get the defects rectified without any cost to IIM Mumbai. 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 IIM Mumbai.

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 portions 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, IIM Mumbai is obliged to pay compensation to a workman employed by the contractor, in execution of the works, IIM Mumbai will recover from the contractor, the amount of the compensation so paid; and, without prejudice to the rights of the IIM Mumbai under sub-section (2) of Section 12, of the said Act, IIM Mumbai 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 IIM Mumbai to the contractor whether under this contract or otherwise. IIM Mumbai 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 IIM Mumbai full security for all costs for which IIM Mumbai might become liable in consequence of contesting such claim.

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

ln 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, IIM Mumbai 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, IIM Mumbai 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 IIM Mumbai under sub-section(2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, IIM Mumbai 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 IIM Mumbai to the contractor whether under this contract or otherwise IIM Mumbai 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 IIM Mumbai full security for all costs for which IIM Mumbai 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 fulfill 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

(i) 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.

(ii) 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.

(iii) 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 IIM Mumbai 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.

(iv) (a) 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.

(b) 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.

(v) 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.

(vi) The contractor shall indemnify and keep indemnified IIM Mumbai 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.

(vii) 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.

(viii) 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.

(ix) 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 IIM Mumbai, 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 PMC/ IIM Mumbai 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 - upto 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 as shown in appendix -I and II, 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 PMC/ IIM Mumbai, 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 Fd huts and sanitary arrangements be remodelled 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 19 H

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.

(i) (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.

(ii) (a) 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.
(b) The contractor(s) shall provide each hut with proper ventilation.
(c) All doors, windows, and ventilators shall be provided with suitable leaves for security purposes.
(d) 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

(iii) **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.

(iv) The site selected for the camp shall be high ground, removed from jungle.

(v) **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 him to the Municipality/authority. The contractor shall provide one sweeper for every eight seats in case of dry system.

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

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

(viii) **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 19 I

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 upto 5% of tendered value of work may be imposed by the IIM Mumbai whose decision shall be final both with regard to the justification and quantum and be binding on the contractor.

However, IIM Mumbai, 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, it's 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 paid by 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 19L: Contribution of EPF and ESI

The ESI and EPF contributions on the part of employer in respect of this contract shall be paid by the contractor. These contributions on the part of the employer paid by the contractor shall be reimbursed by the Engineer-in-charge to the contractor on actual basis**.**

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 IIM Mumbai 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 IIM Mumbai shall have power to adopt the course specified in Clause 3 hereof in the interest of IIM Mumbai and in the event of such course being adopted, the consequences specified in the said Clause 3 shall ensue.

CLAUSE 22

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 IIM Mumbai 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 - DELETED

Amicable Resolution and Mediation

Save where expressly stated to the contrary in the Contract, any dispute, difference or controversy of whatever nature between the Parties, howsoever arising under, out of or in relation to the Contract including disputes, if any, with regard to any acts, decision or opinion of IIM Mumbai'Representative and so notified in writing by either Party to the other (the "Dispute") shall in the first instance be attempted to be resolved amicably in accordance with the procedure set out in this clause.

Either Party may require such Dispute to be referred to a person (not connected with work directly) nominated by each Party, for amicable settlement. Upon such reference, the two shall meet at the earliest mutual convenience and in any event within [30 (thirty)] days of such reference to discuss and attempt to amicably resolve the Dispute.

In the event that the Dispute in question is not resolved amicably within 30 (thirty) days of such meeting between the Parties, either Party may refer the Dispute to arbitration in accordance with [Arbitration Procedure].

Arbitration Procedure

Save where expressly stated to the contrary in the Contract, any Dispute shall be finally settled by binding arbitration under the Arbitration and Conciliation Act 1996 by sole arbitrator appointed by Director, IIM Mumbai

Place of Arbitration

The place of arbitration shall be Mumbai.

English Language

The request for arbitration, the answer to the request, the terms of reference, any written submissions, any orders and awards shall be in English and, if oral hearings take place, English shall be the language to be used in the hearings.

Enforcement of Award

The Parties agree that the decision or award resulting from arbitration shall be final and binding upon the Parties and shall be enforceable in accordance with the provisions of the Arbitration and Conciliation Act.

Performance during Arbitration

Pending the submission of and/or decision on a Dispute and until the arbitral award is published, the Parties shall continue to perform their respective obligations under the Contract without prejudice to a final adjustment in accordance with such award.

CLAUSE 26: CONTRACTOR INDEMNIFY IIM MUMBAI AGAINST PATENT RIGHTS

The contractor shall fully indemnify and keep indemnified the IIM Mumbai 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 IIM Mumbai 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 IIM Mumbai 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 IIM Mumbai 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 IIM Mumbai 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 finalisation 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 IIM Mumbai 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 PMC/ IIM Mumbai 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 IIM Mumbai will be kept withheld or retained as such by the Engineer-in-Charge or IIM Mumbai 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 IIM Mumbai 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) IIM Mumbai 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 IIM Mumbai 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 IIM Mumbai 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 IIM Mumbai on the one hand and the contractor on the other under any term of the contract permitting payment for work after assessment by IIM Mumbai.

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 PMC or any other contracting person or persons through Engineer-in-Charge against any claim of the Engineer-in-Charge or IIM Mumbai 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 IIM Mumbai 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 IIM Mumbai will be kept withheld or retained as such by the Engineer-in-Charge or the IIM Mumbai 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 IIM Mumbai 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.

(i) That the water used by the contractor(s) shall be fit for construction purposes to the satisfaction of the Engineer-in-Charge.

(ii) 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 IIM Mumbai subject to the following conditions:-

(iv) The water charges @ 1 % shall be recovered on gross amount of the work done.

(v) The contractor(s) shall make his/their own arrangement of water connection and laying of pipelines from existing main of source of supply.

(vi) IIM Mumbai 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

(i) 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.

(ii) 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 IIM Mumbai either by issue from IIM Mumbai stocks or purchase made under orders or permits or licences issued by IIM Mumbai, 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 IIM Mumbai 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 IIM Mumbai 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

(ii) 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 IIM Mumbai over and above the T&P stipulated for issue, the IIM Mumbai 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.

(iii) Plant and Machinery when supplied on hire charges shown in Schedule 'C' shall be made over and taken back at the IIM Mumbai 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.

(iv) 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 IIM Mumbai.

(v) The hire charges shall be recovered at the prescribed rates from and inclusive of the date the plant and machinery made over upto 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 get 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 IIM Mumbai shall be final and binding on the contractor.

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

(vii) 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 IIM Mumbai against any loss or damage caused to the plant and machinery either during transit or at site of work.

(viii) 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.

(ix) 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.

(x) 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.

(xi) 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 PMC on behalf of IIM Mumbai 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).

(xii) 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.

(a) 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 IIM Mumbai 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.

(xiii) 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.

(xiv) 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 IIM Mumbai plant and machinery in question have, in fact, remained idle with the contractor because of the suspension

(xv) In the event of the contractor not requiring any item of plant and machinery issued by IIM Mumbai 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, affecting the 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

(i) The contractor undertakes to make arrangement for the supervision of the work by the firm supplying the tar or bitumen used.

(ii) 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 IIM Mumbai, 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.

(iii) 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

(i) 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.

(ii) 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

(i) All the taxes including GST applicable in respect of this contract shall be payable by the Contractor and IIM Mumbai or the PMC will not entertain any claim whatsoever in respect of the same.

(ii) 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 IIM Mumbai 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 IIM Mumbai 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

(i) All tendered cost shall be inclusive of all taxes and levies (including GST) 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 IIM Mumbai attributable to delay in execution of work within the control of the contractor.

(ii) 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/ IIM Mumbai and shall also furnish such other information/document as the Engineer-in-Charge may require from time to time.

(iii) 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 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/ IIM Mumbai shall have the option of terminating the contract without compensation to the contractor.

CLAUSE 40: IF RELATIVE WORKING IN WAPCOS/ IIM MUMBAI 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/ IIM Mumbai. Any breach of this condition by the contractor would render him liable to be debarred from tendering in WAPCOS/ IIM Mumbai 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 gazetted rank or other gazetted 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

(ii) 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/ IIM Mumbai 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 lappages, 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. sheet 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. sheet it shall be 10%), such determination & comparison being made diameter wise & category wise.

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

(iii) 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 non-scheduled 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.

(iv) The said action under this clause is without prejudice to the right of the IIM Mumbai 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 reconstruction of all works ordered by the Engineer-in-Charge, such payments being in addition to compensation upto 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 upto Rs. 5,000/- and by the IIM Mumbai 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 IIM Mumbai 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

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 (centimeters) 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 stabilized 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 architects / 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:

- Clear vegetation only from areas where work will start right away
- Vegetate / mulch areas where vehicles do not ply.
- Apply gravel / landscaping rock to the areas where mulching / paving is impractical
- 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%
- 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:
    a) Any dusty materials before transferring, loading and unloading
    b) Area where demolition work is being carried out
    c) Any un-paved main haul road
    d) Areas where excavation or earth moving activities are to be carried out
- The contractor shall ensure that the speed of vehicles within the site is limited to 10 km/hr.
- All the construction purposed Vehicles must have valid PUC. If any vehicle found without valid PUC entered into IIM Mumbai campus, a penalty of Rs. 5000/- for each instance shall be recovered from the contractor.
- 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.

- 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
- Provide hoardings of not less than 3m high along the site boundary, next to a road or other public area
- Provide dust screens, sheeting or netting to scaffold along the perimeter of the building Cover stockpiles of dusty material with impervious sheeting
- 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:

- Guarding all parts of dangerous machinery.
- Precautionary signs for working on machinery
- Maintaining hoists and lifts, lifting machines, chains, ropes, and other lifting tackles in good condition.
- Durable and reusable formwork systems to replace timber formwork and ensure that formwork where used is properly maintained.
- Ensuring that walking surfaces or boards at height are of sound construction and are provided with safety rails or belts.
- Provide protective equipment; helmet etc.
- Provide measures to prevent fires. Fire extinguishers and bucket of sand to be provided in the fire-prone area and elsewhere.
- 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 equipments with proper access and proper maneuverability of the vehicles carrying the materials. While planning the layout, the requirements of various materials, components and equipments 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 utilisation 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 labeled 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. (see appendix)

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 andover. 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 non-serviceable (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. Contractor shall collect the relevant material certificates to prove the same

a) All cement used at site for reinforced concrete, precast members, mortar, plaster, building blocks, etc. shall be PPC (Ordinary Portland Cement). The PPC must meet the requirements of IS 1489: 1991. (Minimum 25% replacement of cement with fly ash in PPC (Portland Pozzolona Cement) by weight of the cement used in the overall RC for meeting the equivalent strength requirements).

b) 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.

c) 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.

d) 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.

e) 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.

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

g) 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.

h) 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.

i) 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.

j) The contractor shall ensure that all composite wood products/agro-fibre 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 workers 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-in-charge, 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 for further submission to IIM Mumbai 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 IIM Mumbai; 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 and recommend to IIM Mumbai.
  (d) Confirmation by the Contractor of any amounts due and owing from the Contractor to IIM Mumbai 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 [14 (fourteen)] Business Days of receipt of the Contractor's Request for Payment under Clause 48(2) [Contractor's Application for Payment], WAPCOS Limited Representative shall review such request and, shall issue to the Contractor, a Certificate of Payment certifying what amounts IIM Mumbai 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 may recommend IIM Mumbai to withhold payment to the Contractor, WAPCOS Limited may recommend IIM Mumbai to 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 IIM Mumbai 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 and approval by IIM Mumbai.

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 certify and recommend the IIM Mumbai to 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 [15 (fifteen)] Business Days from the date of such Certificate of Payment.

5. Back to Back Payment

The Associate/Sub-consultant/sub-contractor unconditionally acknowledges that under the present contract/agreement/work order/arrangement, WAPCOS is only working as intermediary between IIM Mumbai being Principal Employer/Client and Associate/ sub-consultant /sub-contractor. Thus the Associate/ sub-consultant /sub-contractor also unconditionally acknowledges that the payment under the present contract/ agreement/ Work Order /Arrangement shall be made directly by IIM Mumbai 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 IIM Mumbai (Principal Employer/Client), then WAPCOS &/or any of its Employer/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.

CLAUSE 49: Arbitration Clause

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 convince 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 o 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 either 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 o date).

e) It is also acknowledged and accepted that WAPCOS is only working as intermediary between the Associate/Sub-Consultant/Sub-Contractor and the IIM Mumbai (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 cost 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 purpose 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 law of India and the Parties submit to sole & exclusive jurisdiction of courts at Delhi"

CLAUSE 50: Make in India

Public Procurement (Preference to Make in India)
The bidder must comply with Order Nos. P-45021/112/2020-PP(BE-II)(E-43780) dated 24.08.2020, 28.08.2020, and 31.08.2020 and also Make in India Order No. P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, Government of India and any amendments thereon. The details available on ministry website.

Self-certification that the item offered meets the minimum local content of 50% giving details of the location(s) at which the local value addition is made in case the bidder wishes to avail the benefits under the make in India policy, if applicable.

In cases of procurement for a value in excess of ₹10crores, the local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a

practicing cost account or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content to avail the benefits under the make in India policy, if applicable.

Government has issued Public Procurement (Preference to Make in India) [PPP-MII] Order 2017 vide the Department for Promotion of Industry and Internal Trade (DPIIT) Order No.P45021/2/2017-B.E.-II dated 15.06.2017 and subsequent revisions vide Order No.45021/2/2017PP(BE-II) dated 28.05.2018, 29.05.2019, 04.06.2020 and 16.09.2020 to encourage 'Make in India' and to promote manufacturing and production of goods, services and works in India with a view to enhancing income and employment. This Order is issued pursuant to Rule 153 (iii) of the General Financial Rules 2017. The salient features of the aforesaid Order are as under:

The Order is applicable for procurement by Ministry / Department / attached / subordinate office of, or autonomous body controlled by, the Government of India and includes Government companies as defined in the Companies Act.

In procurement of all goods, services or works in respect of which the Nodal Ministry/Department has communicated that there is sufficient local capacity and local competition, only 'Class-I local supplier', as defined under the Order, shall be eligible to bid irrespective of purchase value.

The margin of purchase preference shall be 20%. 'margin of purchase preference' means the maximum extent to which the price quoted by a local supplier may be above the L1 for the purpose of purchase preference. Ministry of Electronics and Information Technology is the Nodal Ministry for implementation of the Electronic Product Notifications issued in furtherance of PPPMII Order 2017.

Classes of Local Suppliers based on local content as per the revised PPP-MII Order dated 04.06.2020 issued by the Department for Promotion of Industry and Internal Trade (DPIIT) are as under:

- Class-I Local supplier - a supplier or service provider, whose goods, services or works offered for procurement, has local content equal to or more than 50%.
- Class-II Local supplier - a supplier or service provider, whose goods, services or works
- Offered for procurement, has local content more than 20% but less than 50%.
- Non-Local supplier - a supplier or service provider, whose goods, services or works offered for procurement, has local content less than or equal to 20%.
- Only 'Class-I local supplier' and 'Class-II local supplier' shall be eligible to bid in procurement of all goods, services or works, and with estimated value of purchases less than Rs. 200 crore.

CLAUSE 51: Provision as per Rule 144(xi) of GFR

F.N0.6/18/2019-PPD Ministry of Finance Department of Expenditure Public Procurement Division 161, North Block, New Delhi 23rd July, 2020 Office Memorandum Subject: Insertion of Rule 144 (xi) in the General Financial Rules (GFRs), 2017 Rule 144 of the General Financial Rules 2017 entitled 'Fundamental principles of public buying', has been amended by inserting sub-rule (xi) as under:

Notwithstanding anything contained in these Rules, Department of Expenditure may, by order in writing, impose restrictions, including prior registration and/or screening, on procurement from bidders from a country or countries, or a class of countries, on grounds of defence of India, or matters directly or indirectly related thereto including national security; no procurement shall be made in violation of such restrictions.

The order available on the Ministry of Finance Department of Expenditure Public Procurement Division website.

SECTION– IV

SPECIAL CONDITIONS OF CONTRACT

SECTION–IV

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/added 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		
5	**Office Inviting Tender** Additional Chief Engineer (INFS-1) WAPCOS Limited 76-C, Institutional Area, Sector - 18 Gurugram-122015, Haryana Email: wapcosiimm@gmail.com	
8	Schedule of Materials to be issued to the Contractor	Not Applicable
DEFINITIONS		
Added	'Principal Client/ Owner/ Employer' means IIM Mumbai 'PMC: WAPCOS Limited	
2(iii)	Work / Project Means: *"Special Repair works in Savitribai Phule Girls Hostel, Swami Vivekananda Hall Boys hostel, Children's Park and Modular Fencing Work in Anand Vihar in IIM Mumbai"*	
2(iv)	Site / Location Means IIM Mumbai, Vihar Lake Road, Powai, Mumbai	
2 (vi)	**Engineer-In-Charge** Will be intimated to the successful Bidder at the time of issue of Notice to Proceed the works.	
2 (vii)	**Tender Accepting Authority** Chief Administrative Officer, IIM Mumbai	
2 (x)	**Market Rate** Percentage on cost of materials and labour to cover all overheads and profits	15% (Provided that no extra overheads and profits shall be payable on the part(s) of work assigned to other agency(s) by the contractor as per terms of contract.)
2(xi)	Standard Schedule of Rates Schedule of Rates (Civil) Schedule of Rates (Electrical)	 DSR 2023 DSR (E&M) 2022
2(xvi)	Date of Commencement of work	Within 15 days after date of award of Work. The Works
CLAUSES OF CONTRACT		
Clause 1	**Performance Guarantee** i. Performance Guarantee. ii. Performance guarantee if contractor quotes abnormally low iii. Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance.	Applicable 3% of Tendered Value Not Applicable 15 days

Clause No.	Description	Applicability/Modified/ Added
	iv. Validity of Performance Guarantee v. Return of Performance Guarantee	The Performance Guarantee shall be initially valid 60 days beyond the stipulated date of completion plus 1 year claim period beyond that. Soon after the completion & commissioning of works and issuance of the completion certificate.
Clause 1A	**Security Deposit**	**Applicable** 5% of Tendered Value
	Release of Security Deposit	25% after DLP of 1st Year. 25% after DLP of 2nd Year 50% after DLP of 3rd Year
Clause 2	**Compensation for Delay**	**Applicable and Modified** Timely completion of the work is very much/strictly essential due to time constraints 0.50% of the total project cost per Week. (Maximum up to 10% of the Project Cost)
Clause 2A	Incentive for Early Completion	Not Applicable
Clause 5	Time and Extension for Delay	**Applicable**
	Number of days from the date of issue of letter of acceptance for reckoning date of start	15 days
	Stipulated time of completion of project	**As Mentioned in NIT**
Clause 7	Payment on Intermediate Certificate to be Regarded as advance	Not Applicable
New Clause 7A (Added)	Payment	It is clearly agreed and understood by the Contractor that notwithstanding anything to the contrary that may be stated in the agreement between IIM Mumbai and the Contractor; the contractor shall become entitled to payment only by the IIM Mumbai for the work done by the contractor after certification from WAPCOS. Any delay in the release of payment by the client/ Owner/ Funding Agency 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 at their Bank account by IIM Mumbai.
Clause 10	Materials Supplied by WAPCOS	Not Applicable
Clause 10A	**Materials to be Provided by Contractor**	**Applicable** In addition, The contractor shall get the testing of materials from NABL accredited Laboratory and carry out the tests in presence of WAPCOS Officials during the normal working hours.
Clause 10 B(ii)	**Mobilization Advance**	**Not Applicable**
Clause 10 B(iii)	Plant Machinery & Shuttering Material Advance	Not Applicable
Clause 10 B(iv)	Recovery of Mobilization advance	**Not Applicable**

Clause No.	Description	Applicability/Modified/ Added
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** The following is added: All works are to be executed in accordance with the specifications, drawings. Details of items & specifications mentioned elsewhere etc. given with this tender document and after vetting of design/drawing by IIT/NIT/VJTI (to be engaged by contractor at their cost & risk). In case specification of any item is not clear, CPWD Specifications 2019 (or any latest version) Vol. I to II with up to date correction slips issued on the last date of submission of tender for Civil 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**. Second paragraph "the completion cost---- of tendered amount" will be omitted.
	Clause 12.1	Not applicable
	Clause 12.2(a)	Modified as "In the case of extra item(s) (items that are completely new and not in the scope of works as per tender condition), the rates for extra items shall be determined on basis of latest DSR (Delhi Schedule of rates). In case extra items, which are not available in DSR, MCGM SOR followed by PWD Maharashtra SSR shall be adopted. If its not available in all these three Schedule of rates, market rates shall prevail with proper justification of rates and the contractor shall be paid in accordance with rate approved by IIM Mumbai.
	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 DSR item, the rates for substituted items shall be determined on basis of latest DSR (Delhi Schedule of rates) + Cost Index as approved by WAPCOS/ IIM Mumbai. • In this case of substituted item(s) being Non DSR item, MCGM SOR, PWD Maharashtra SSR item shall be followed and if not available in all of these, the market rate shall prevail with proper justification of rates and the contractor shall be paid in accordance with rate approved by WAPCOS.

Clause No.	Description	Applicability/Modified/ Added
		• 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/ IIM Mumbai. Accordingly the plus/minus difference of payment will be made to the Contractor for the substituted quantities.
	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 **Clause 12.5** Deviation limit beyond which clause 12.2 & 12.3 shall apply for foundation work (except earth work) Deviation limit for items in 100% earth work sub head of DSR or related items	Project & Original Works and Maintenance Works 100% 100% 100% Modified as "In case of deviated item(s) beyond the %age mentioned above (Non Scheduled item within DSR 2023) the contractor may within fifteen days of receipt of the order or occurrence of the item(s) claim rates, on basis of MCGM SOR/ PWD Maharashtra SSR and if not available in these SOR, then supported by the proper analysis on basis of market rates. Contractor shall be paid in accordance with rates approved IIM Mumbai. In case of deviated item, beyond the % mentioned above, being the scheduled item (Delhi Schedule of Rates 2023), these shall be paid at rates of the scheduled rates plus the applicable cost index (excluding applicable GST).
Clause 15A	Compensation in case delay supply of material	Not Applicable
Clause 17	Contractor liable for Damages, Defects during Defect Liability Period **Defect Liability Period**	**Applicable** Added/Modified: Three years from the date of successful completion of each component of the project in all respect along with submission of all required documents i.e. As Built Drawings, Inventory List, Guarantee/Warrantee Bonds, Certificates & Invoices of Equipment's, Lock & Key of each room and NOCs from various Departments.
Clause 18	Contractor Supply Tools & Plants Etc.	Applicable
Clause 25	Settlement of Disputes & Arbitration	Not Applicable
Clause 27	Lump sum Provisions in Tender	Not Applicable
Clause 30	Employment of coal mining or controlled area labour not permissible	Not Applicable

<table>
<tr><th>Clause No.</th><th>Description</th><th>Applicability/Modified/ Added</th></tr>
<tr><td>Clause 33</td><td>Return of surplus material</td><td>Not Applicable</td></tr>
<tr><td>Clause 34</td><td>Hire of plant and Machinery</td><td>Not Applicable</td></tr>
<tr><td>Clause 36(i)</td><td colspan="2">Requirement of Technical Representative(s)

<table>
<tr><th rowspan="2">S. No.</th><th colspan="2">Requirement of Technical Staff</th><th rowspan="2">Minimum Experience (Yrs.)</th><th rowspan="2">Designation of Technical Staff</th></tr>
<tr><th>Minimum Qualification</th><th>Numbers</th></tr>
<tr><td>1.</td><td>Graduate in Civil Engineering</td><td>1</td><td>10</td><td>Project Manager</td></tr>
<tr><td>2.</td><td>Degree in Electrical Engineering</td><td>1</td><td>05</td><td>Site Engineer (Electrical)</td></tr>
<tr><td>4</td><td>Diploma/ Degree (Civil)</td><td>1</td><td>03</td><td>Site Supervisor</td></tr>
</table>
Curriculum Vitae along with Educational Certificates shall be submitted along with the bid.</td></tr>
<tr><td>Clause 42</td><td>Return of Material & Recovery for Material Issued</td><td>Not Applicable</td></tr>
<tr><td>Clause 43</td><td>Compensation During War Like Situation</td><td>Not Applicable</td></tr>
<tr><td>Clause 46</td><td>Insurance</td><td>Applicable</td></tr>
<tr><td>Clause 47</td><td>Conditions Specific to Green Buildings Practices</td><td>Applicable</td></tr>
<tr><td>Clause 49</td><td>Arbitration Clause</td><td>Yes, Applicable</td></tr>
</table>

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 IIM Mumbai or any statuary committee or by any duly authorized representative of IIM Mumbai, 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 and modification as suggested by the above teams/ group/ individual. 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 IIM Mumbai or third party authorized by IIM Mumbai or any statuary committee, will be carried out or replaced by the Contractor at his own risk and cost.

2. The Construction/Execution Work may be subject to deletion from scope of work as per the desire/requirement from Client **"Indian Institute of Management Mumbai".** In such cases before/during the construction, the contractor is not liable for any financial claim or damage charges or any claim whatsoever. The time extension will be granted to the contractor in such circumstances.

3. The construction work will only be commenced by the Contractor only after the approval/vetting of drawings from the concerned local authorities/ IIM Mumbai or any other department as per statuary requirement.

4. The contractor shall deploy the resources at site to start/resume the construction activities as per the availability of the clear & after the clearance from the Owner of the project, land/land clear from hindrance and subsequent written approval from PMC/ IIM Mumbai. No claim shall be entertained for idle labour, idle machinery, idle technical / non-technical staff, idle T&P if any, due to delay in start of the works.

5. **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 works components shall not be considered**. Contractor shall also provide necessary Completion Certificates/NOCs (if required) 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 Three year after such handing over.

6. If any dispute/ hindrance may arise during construction due to any reason whatsoever, the contractor is not liable for any financial claim for damages due to such circumstances.

7. The contractor shall provide fully equipped office for Engineer- in-charge & site engineers/ client along with facility of 24 hours electric with Power Backup/Inverter, drinking water supply, sanitary, internet facilities, one inspection vehicle suitable for hilly area, office furniture – tables, chairs, almirah for storage of documents etc., desktop computers/laptop of latest version/configuration along with printers (for A4 & A3 both b/w & colored printing) with internet connection and any other miscellaneous requirement as directed by Engineer-in-charge for finalizing immediate technical solutions/decisions on the site, so that the work progress may not be hampered. An amount equal to 1% of the gross amount of running account bills and final bill will be deducted, if above facilities are not provided at site.

8. 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.

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

10. 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.

11. Quoted amount 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. Quoted amount by the contractor shall be all inclusive and shall apply to all heights lifts, leads and depths of the building and nothing extra shall be payable on this account. The Contractor is advised to visit the sites before quoting the rates.

12. IIM Mumbai is revamping their campus shortly with the world class amenities. Therefore, it is desired that the quality of materials and workmanship provided by the bidder should be of Highest standard. If at any time it is observed that any of the parameter for achieving the quality in respect of material and workmanship are compromised by the contractor , The work shall be rejected and shall be carried out on the risk and cost of contractor.

13. The contractor shall make his own arrangements for obtaining electric connection and water Connection/arrangement (if required). The water charges and electricity charges as charged by the IIM Mumbai. and Local Authorities will be paid by the Contractor. No dispute in this regard shall be entertained.

IIM Mumbai may allow the contractor to use the existing connection of IIM Mumbai. In that case, the contractor shall tap from the facility after obtaining the approval from Engineer-In Charge and shall install a separate Sub- Meter for the same. The Total Units consumed shall be billed at Rs. 14.50/ Kwh (Unit) and shall be deducted from the RA Bill to be paid to the contractor. However, Contractor is responsible for making such arrangement and no delay is acceptable in case IIM Mumbai do not permit the contractor to use their Power Supply connection.

14. The Contractor shall dispose off all the dismantled materials, debris, garbage, waste outside of the campus of the works at his own cost as per the rules and regulations of State Government with the permission of IIM Mumbai and provide clear and clean site at the time of handing over the works.

15. The payment of final bill will be made by IIM Mumbai after successful completion and handing over of the works with complete satisfaction of Engineer In-Charge as well as IIM Mumbai.

16. 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.

17. The contractor shall be entirely and exclusively responsible for the horizontal, vertical and other alignment, the level and correctness of every part of the work and shall rectify effectively any errors or imperfections therein. Such rectifications shall be carried out by the contractor at his own cost to the instructions and satisfaction of the Engineer-in-Charge.

18. The cost/rates quoted by the contractor are deemed to be inclusive of site clearance, setting out work, profile, establishment of reference bench mark, spot levels, construction of all safety and protection devices, barriers, earth embankments, preparatory works, all testing of materials working during monsoon, working at all depths, height and locations etc. unless specified in the schedule of quantities.

19. Royalty at the prevailing rates wherever payable shall have to be paid by the contractor on the boulders, metal, shingle, sand and bajri etc. or any other material collected by him for the work direct to revenue authorities and nothing extra shall be paid by the IIM Mumbai/WAPCOS for the same.

20. The contractor shall provide at his own cost suitable weighing, surveying and leveling and measuring arrangements as may be necessary at site for checking. All such equipment shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account.

21. (a) The 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 work of water supply, internal sanitary installation and drainage work etc. shall be carried out as per local Municipal Corporation or such local body Bye-laws. Water tanks, taps, sanitary, water supply and drainage pipes and fittings etc. should conform to bye laws and specification

as applicable. The contractor should engage plumbing and sanitary agency approved by PMC/ IIM Mumbai, which should have requisite T&P, skilled workers and experience for which necessary certificates & document proof shall be submitted within one month of the start of work. The contractor shall get the materials (fixtures / fittings) tested agencies approved by PMC/ IIM Mumbai. as required at his own cost.

(c) 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.

22. 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/Architect. 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.

23. The contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by PMC/ IIM Mumbai.

24. 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.

25. The contractor shall have to make approaches road 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.

26. No payment shall be made for any damage caused by rain, snowfall, flood or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the govt. property and work for which the payment has been advanced to him under the contract and he shall make good the same at his risk and cost. The contractor shall be fully responsible for safety and security of his material, T&P, Machinery brought to the site by him.

27. All mass Reinforced Cement Concrete work shall be design mix concrete of specified grade. Initial Design Mix shall be carried out from the Govt. approved Laboratory/NABL Accredited Lab/NIT/IIT, The contractor shall install on site automatic batching plant of sufficient capacity for production of design mix concrete which shall be used in the work.

28. Various factory made materials shall be procured from reputed and approved manufacturers or their authorized dealers. List of such approved manufacturers is provided in the tender document.

29. Contractor shall have to execute a Guarantee Bond in respect of Water Proofing works as per Performa attached in this Tender Document. He shall also have to execute guarantee bonds for water supply and sanitary installations work as per Performa attached in this Tender Document.

30. 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.

31. 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. Non-standard materials shall not be accepted.

32. 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.

33. 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.

34. The contractor shall invariably prepare the samples of finishing items i.e. flooring of different types, external & internal finishing i/c colour scheme of paint, tiles in dado, flooring in platforms & staircase, water supply & sanitary fittings and any other item 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.

35. One sample quarter/room complete in all shape for each category, shall be prepared by the contractor and got approved from Engineer-in-charge in writing. The contractor shall be allowed to proceed with further quarters only after getting the sample quarters 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.

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

37. 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.

38. 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 IIM Mumbai.

39. 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. The suitable water for construction shall be arranged by Contractor at his own cost and nothing extra shall be paid to the contractor on this account.

40. The material shall conform to the quality and make as per attached list attached in the tender document. 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 provisions of Clause 10A of the General Conditions of Contract for Central PWD works shall be applicable on the materials of "**Preferred Make**" also.

41. It must be ensure 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.

42. 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.

43. 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 IIM Mumbai/ PMC giving details to indicate that the brand proposed to be used is equivalent to the brands mentioned in the agreement.

44. SPECIAL CONDITIONS FOR STEEL REINFORCEMENT BARS

a) The Contractor shall procure primary TMT bars of Fe 550D, at the discretion of Engineer-In-Charge, from SAIL, Tata Steel Ltd., RINL, Jindal Steel & Power Ltd. and JSW Steel Ltd. The Contractor may also procure IS marked TMT bars of various grades from the steel manufactures or their authorized dealers (as per following selection criteria) have valid BIS license for IS: 1786 -2008 (Amendment -1 November 2012) from the producers fulfilling the following criteria.

b) The procured steel should have following qualities: -

(i) Excellent ductility, bend ability and elongation of finished product due to possible refining technology.
(ii) Consumption of steel should be accurate as per design.
iii) Steel should have no brittleness problem in finished product.
iv) Steel should carry the quality of corrosion and earthquake resistance.
v) Quality steel with achievement of proper level of sulphur and phosphorus as per IS: 1786-2008.

c) Selection criteria of steel manufacturers: shall have the following selection criteria of steel manufactures: -

i) Steel producers of any capacity using iron ore/ processed iron ore as the basis raw material adopting advance refining technologies as given hereunder:
(1) DRI-EAF = Direct Reduced Iron – Electric arc furnace.
(2) BF-BOF = Blast furnace – Basic oxygen furnace
(3) CORES-BOF = COREX - Basic oxygen furnace

For production of liquid steel to finish product at single/multiple locations with NABL or any other similarly placed accrediting Government body which operates in accordance with ISO/IEC 17011 and accredits labs as per ISO/IEC 17025 conforming to IS: 1786-2008 (Amendment -1 November 2012). Following is the check lists for incorporation any quality steel producer for technical assessment.

Sl.	Item	Checkpoint	Remarks
1	Steel producer having manufacturing facilities at Plant	a. Factory address and Registration no.	
		b. Certificate of manufacturing process	
		c. Refining process of steel producer	
		c.1 BF-BOF route	
		c.2 Corex-BOF route	
		c.3 DRI-EAF route	
		d. With documentary evidence either for BOF or EAF	
		e. Steel plant having infrastructure for producing	

		Sponge iron, billet and TMT Rebars	
		f. Production and Quality Flow Chart	
		g. Plant Evaluation and Process Verification	
		h. List of Plant & Machinery	
2	Established	**Document verification for:**	
		a. Govt./PSU Approvals	
		b. Supply orders of TMT Re– bars in Govt. Projects (Minimum–5 years)	
		c. Verification of direct supply orders to any State/Central Govt. Department	
		d. User Certificate issued by any Govt. Department e. directly	
3	Indigenous	**Documents evidence like:**	
		a. Certificate of Incorporation	
		b. Memorandum of Articles of Association	
		c. Credit rating of the company from CARE/CRISIL/ICRA should not be C/D grade (minimum last 3 years)	
	Reliable	a. Test Results from Govt./NABL accredited laboratories	
4		b. In –house testing facility for physical/chemical tests (NABL accredited)	
		c. Calibration certificates	
		d. List of lab Equipment:	
		e.1 Spectrometer	
		e.2 Computerized UTM	
5.	Use of Iron – Ore/ Processes Iron are as basic raw materials	Verification of Iron–Ore / Process iron ore invoices	
6.	In house rolling facility	Plant verification to identify in house rolling facilities, production of liquid steel and crude steel	

7.	Licenses and Certificates	a.ISO 9001:2015 Certification	
		b.ISO 14001:2004 Certification	
		c.OHSAS 18001:2007 Certification	
		d.IS 1786:2008 (TMT Re-bars	
		e.IS 2830:1992(Billets)	
8.	Product Range	TMT Re–bars FE 415/415D/500/500D/550/550D	
		CRS (Corrosion Resistant) & EQR (Earthquake Resistant) TMT Re-Bar Size 8to36 mm dia.	

Note:

1. DRI-EAF-> Direct Reduce Iron-Electric ARC Furnace
2. BF-BOF-> Blast Furnace-Basic Oxygen Furnace
3. COREX BOF-> COREX Furnace-Basic Oxygen Furnace.

b) The PMC shall approve the steel manufacturers prior to procurement and it shall be the responsibility of the Contractor to obtain the proposed manufacturer, much in advance so as not to hamper progress of the site Work.

c) The Contractor shall have to obtain and furnish test certificates to the PMC in respect of all supplies of steel brought by him to the site of work.

d) Samples shall also be taken and got tested by the Engineer-in-charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the Contractor does not conform to the specifications, the same shall stand rejected, and it shall be removed from the site of work by the Contractor at his cost within a week time on written orders from the Engineer-in-charge to do so.

e) The steel reinforcement bars shall be brought to the site in bulk supply of 10 tonnes or more, as decided by the PMC.

f) The steel reinforcement bars shall be stored by the Contractor at site of work in such a way as to prevent their distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

g) For checking nominal mass, tensile strength, bend test, re-bend test etc. specimens of sufficient length shall be cut from each size of the bar at random, and at frequency not less than that specified below:

Size of bar	For consignment below 100 ton	For consignment above 100 ton
Under 10 mm dia bars	One sample for each 25 ton or part thereof	One sample for each 40 Ton or part thereof
10 mm to 16 mm dia bars	One sample for each 35 Ton or part thereof	One sample for each 45 Ton or part thereof

Over 16 mm dia bars	One sample for each 45 Ton or part thereof	One sample for each 60 Ton or part thereof

h) The Contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the Contractor.

i) The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in Clause 10 A of the General Conditions of the Contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 38 of the General Conditions of the Contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations, recovery at the rate so prescribed shall be made. In case of excess consumption, no adjustment needs to be made.

j) The steel brought to site and the steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.

k) For the purpose of payment, the actual weight of reinforcement steel shall be worked out as below:

To arrive at unit weight for the purpose of payment three random samples each of 1 meter length shall be collected for each diameter of re-bar from every consignment received at site. Actual weight of three specimens for each diameter shall be taken and average weight calculated and recorded. The average weight so arrived at shall be compared with the theoretical weight of that particular diameter of rebar. Actual or theoretical weight whichever is less shall be considered for making payment for that consignment. However final payment shall be made on the basis of weighted average of all the consignment. The decision of the Engineer-in-charge as regards the random samples and average weight shall be final and binding on the Contractor and no claim of any kind shall be entertained in this regard.

45. CONDITIONS WHERE CEMENT IS TO BE PROCURED BY THE CONTRACTOR :

a) The Contractor shall procure 43/ 53 grade ordinary Portland cement conforming to IS 8112/Portland Pozzolana Cement conforming to IS: 1489 (Part -I) as required in the work, from reputed manufacturers of cement such as ACC, Ultratech, Vikram, Shree Cement, Ambuja, Jaypee Cement, Century Cement & J.K. Cement or from any other reputed cement Manufacturer having a production capacity not less than one million tonnes per annum as approved by ADG for that sub region.

b) 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 manufacturer(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 manufacturers, given by the tenderer, fully or partially. The supply of cement shall be taken in 50 kg. bags bearing manufacturer's name and ISI marking.

c) Samples of cement arranged by the Contractor 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 a week's time of written order from the Engineer- in-charge to do so.

d) The cement shall be brought at site in bulk supply of approximately 50 tonnes or as decided by the Engineer- in- charge.

e) The cement shall be got tested by the Engineer-in-charge and shall be used on the work only after satisfactory test results have been received. The Contractor shall supply free of charge the cement

required for testing including its transportation cost to testing laboratories. The cost of tests shall be borne by the Contractor.

f) The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the Contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 38 of the Contract and shall be governed by conditions laid therein. In case the cement consumption is less than the theoretical requirement including permissible variation, recovery at the rate prescribed in Schedule F shall be made. In case of excess consumption, no adjustment shall be made.

g) Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-Charge.

h) Damaged cement, noticed if any shall be removed from the site immediately by the Contractor on receipt of a notice from the Engineer-in Charge. In the absence of compliance within 3 days of receipt of such notice, the Engineer-in-charge shall be at liberty to get the same removed from the site at the cost of the Contractor.

46. 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 PMC/ IIM Mumbai along with necessary issue of material under joint custody.

47. After the building is completed, the contractor shall be responsible to attend & rectify the defects pointed out by PMC/ IIM Mumbai and then hand over the building to the client. Nothing extra shall be paid on this account.

48. Contractor should hand over the warranty of the specialized items to the IIM Mumbai. Contractor shall submit all the Guarantee/ Warranty bond for various materials as per Item specification.

49. 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.

50. All running account bills preferred by the contractor for advance payments shall be processed only if PMC/IIM Mumbai is satisfied that up to 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.

51. CONSTRUCTION VEHICLES TYRE WASHING FACILITIES

All the vehicles leaving the site shall be loaded in such a manner that the excavated materials, mud or debris will not be deposited on roads. All such loads shall be covered or protected to prevent dust being emitted. The wheels of all vehicles shall be washed properly before leaving the site to avoid the deposition of mud and debris on the roads. The contractor shall provide a wash pit and a wheel washing facility with high pressure water jets for this purpose. Also, the contractor shall make necessary arrangements for sweeping and removal of mud from roads if it is deposited even after washing of wheels of vehicles leaving site. A penalty of Rs 10,000 per day for violation of such measures shall be levied. Nothing extra shall be paid for providing and maintaining this facility.

52. The huts for labour are not to be erected at the site of work by the contractors. He is required to make his own arrangements for labour accommodation and nothing extra shall be paid by IIM Mumbai on this account. However, Vendor shall be given Space for keeping various materials, cement/ steel store Inside of

IIM Mumbai campus. Also for keeping chowkidar, site office, lab, samples room, toilets for labour etc., working yard and other essential requirements such as cement store for day to day requirement, some space shall be made available inside the campus. All labour and staff of contractor shall possess valid identity cards such as Aadhar Card, Voter Card etc. Before tendering, he shall visit the site and assess the manner in which he is able to arrange the above facilities. The Engineer-in-Charge shall in no way be responsible for any delay on these accounts and no claim, whatsoever, on these accounts shall be entertained. The contractor has to built his site office for housing their staff and engineers, sample rooms, testing laboratories, conference hall etc.

52. The contractor shall provide one sample each from at least three (3) preferred makes for an item for approval of Engineer In charge.

53. The contractor needs to submit BOQ and detailed specification of items within 03 Months of issuance of LOA. The detailed Specification of each item will be approved by Engineers In charge in consultation with IIM Mumbai.

54. Preference to Make In India

1. The provisions of revised 'Public Procurement (Preference to Make in India) Order 2017 Revision' issued by Department of Industrial Policy and Promotion under Ministry of Commerce and Industry vide letter no.-P45021/2/2017-PP (BE-II) as amended on 16.09.2020 shall be applicable to the bidding process and award of the contract shall be done accordingly.

2. Verification of Local Content

i. The bidder at the time of tender, bidding or solicitation shall be required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement of the tender. They shall also give details of the location(s) at with the local value addition is made.

ii. In cases of procurement for a value in excess of Rs 10 Crores, the bidder shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

54. Rule 144 (xi) in General Financial Rules (GFRs) 2017

i. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority.

ii. "Bidder "(including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.

iii. "Bidder from a country which shares a land border with India" for the purpose of this Order means:-

a) An entity incorporated, established or registered in such a country; or b) A subsidiary of an entity incorporated, established or registered in such a country; or

c) An entity substantially controlled through entities incorporated, established or registered in such a country; or

d) An entity whose beneficial owner is situated in such a country; or

e) An Indian (or other) agent of such an entity; or

f) A natural person who is a citizen of such a country; or

g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

iv. The beneficial owner for the purpose of clause 33 (iii) above will be as under:

1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercise control through other means.

Explanation-
2. "Controlling ownership interest" means ownership of or entitlement to more than twenty- five per cent. Of shares or capital or profits of the company;
3. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;
4. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
5. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone of together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profit of such association or body of individuals;
6. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
7. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
v. An Agent is a person employed to do any act for another, or to represent another in dealings with third person. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

55. All payments in the form of Monthly bills and Final bills are subjected to the submittal of the following documents to PMC by the Contractor and verification of the said documents by owner/client of the respective billing month:

i) Compliance Reports to all Non-Compliance Reports (NCR), Red Flag Report or any such reports issued by owner/client, PMC and/or the TPQA Consultant;

ii) All Quality Test Reports

iii) Monthly Progress Report (Physical and financial)

iv) Inspection reports towards site and material

v) Copy of Inspection Register

vi) Copy of Site Order Book

vii) All other relevant documents which shall be communicated by owner/client/PMC before commencement of any work

55. For Industrial Kitchen work: -

1) After the work is completed, it shall be ensured that the installation is tested and commissioned. The Contractor shall carry out documentation and obtain all necessary permissions/Licence/ NoC for operation of Commercial Kitchen, Gas Bank etc. from any Central/ State Statuary bodies.

2) **Training**

After the work is commissioned, the contractor shall give handholding support and 1 month training to the IIM Representative for operation of all the Kitchen Appliamces and Equipments. If contractor fails to provide any training a fees of Rs. 5,00,000/- shall be deducted from the RA Bill.

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, UPVC WINDOWS, ROCK WOOL INSULATION AND POLYURETHENE FOAM/ FALSE CEILING MATERIAL

The agreement made this _____ day of _____ two thousand and _____ between _____ S/o _____ (hereinafter called the GUARANTOR of the one part) and the IIM Mumbai (hereinafter called the Client 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 Client 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 Client 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 Client 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 Client BY_____ _____ in the presence of:
1. _____
2. _____

Annexure – IV
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 IIM Mumbai 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 IIM Mumbai.

I / We also indemnify the IIM Mumbai 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.

SECTION – VI

FORMS

"FORM-1"

LETTER OF TRANSMITTAL FOR TECHNICAL BID

(On Bidder **Original** *Letter Head)*

To
Additional Chief Engineer
INFS-I Division
WAPCOS Limited
76-C, Institutional Area, Sector - 18
Gurugram-122015, Haryana
Email: wapcosiimm@gmail.com

Subject: Submission of bids for (Name of the Work/ Project)

Sir,

Having examined the details given in tender document for the above work, I/we hereby submit the relevant information.

1. I/we hereby certify that all the statement made and information supplied in the enclosed Forms A to H and accompanying statement are true and correct.
2. I/we have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
3. I/we submit the requisite certified solvency certificate and authorize the WAPCOS Ltd. to approach the Bank issuing the solvency certificate to confirm the correctness thereof. I/we also authorize WAPCOS Ltd. to approach individuals, employers, firms and corporation to verify our competence and general reputation.
4. I/we submit the following certificates in support of our suitability, technical knowledge and capability for having successfully completed the following eligible similar works:

Name of work	Certificate from

Certificate:
It is certified that the information given in the enclosed eligibility bid are correct. It is also certified that I/we shall be liable to be debarred, disqualified / cancellation of enlistment in case any information furnished by me/us found to be incorrect.

Enclosures:
Seal of bidder

Date of submission: Signature(s) of Bidder(s).

FORM-A

FINANCIAL INFORMATION

[To be submitted on Letter Head of Bidder OR Letter Head of CA]

Years	**Gross Annual Turnover**	**Profit/Loss (After Tax)**
2019-2020		
2020-2021		
2021-2022		
2022-2023		
2023-2024		

Signature of Chartered Accountant
(with Seal)
UDIN No.

Signature of Bidder(s)
(with Seal)

Note: Details to be furnished duly supported by figures in balance sheet/ profit & loss account for the last five years duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department (Copies to be attached). UDIN No. has to be mentioned in the Certificate. Original Certificate is required to be submitted along with the bid.

FORM- B

STRUCTURE & ORGANISATION

(On Bidder **Original** *Letter Head)*

S.No.	Particulars	Details Submitted by Bidder
1.	Name & address of the bidder	
2.	Contact Details a) Telephone no. b) Fax no c) Email id d) Website	
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 Government Body (attach attested photocopy)	
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.	Any other information considered necessary but not included above.	

Signature of Bidder(s)

FORM-C

FORMAT FOR NO-CONVICTION CERTIFICATE

[To be submitted on Bidder's **Original** Letter Head]

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 the 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-D

FORMAT FOR UDERSTANDING THE PROJECT SITE

[To be submitted on Bidder's **Original** Letter Head]

To
Addl. Chief Engineer
INFS-I Division
WAPCOS Limited
76-C, Institutional Area, Sector - 18
Gurugram-122015, Haryana
Email: wapcosiimm@gmail.com

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 Buildings
- 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.
- Existing electrical supply line/ substation to connect the proposed building and allied works to make the building functional after taking proper permission and approvals from the concerned Departments
- Position of existing underground & overhead HT/ LT electric lines
- Safety of Surrounding structures during excavation and during execution of work
- Hindrances, if any, which may arise during the execution of work

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. I / We hereby confirm that no extra/additional cost shall be claimed on above aspects

Yours faithfully,

Date:

Place:

(Signature, name and designation of the Authorized signatory)
Name and seal of Bidder z

FORM-E

FORMAT FOR NO DEVIATION CERTIFICATE

[To be submitted on Bidder's **Original** Letter Head]

To,
Additional Chief Engineer (INFS-I)
WAPCOS Limited
76-C, Institutional Area, Sector - 18
Gurugram-122015, Haryana
Email: wapcosiimm@gmail.com

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.

Yours faithfully,

Date: (Signature, name and designation of the Authorized signatory)

Place: **Name and seal of Bidder**

FORM-F

FORMAT FOR INTEGRITY PACT

[To be submitted on Bidder's **Original** Letter Head]

To,
WAPCOS Limited,
76-C, Sector 18,
Institutional Area
Gurgaon-122015, Haryana

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 at **Enclosure-I.**

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**

Enclosure-I
INTEGRITY AGREEMENT
[To be submitted on Bidder's **Original** Letter Head or Stamp Paper]

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

BETWEEN

WAPCOS Limited (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 WAPCOS Limited on behalf of 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 participate 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 willful 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:

(2) 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.

(3) 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.

(4) 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

(1) 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.

(2) 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:

FORM-G

FORMAT FOR LITIGATION HISTORY, LIQUIDATED DAMAGES, DISQUALIFICATION

[To be submitted on Bidder's **Original** Letter Head]

To,
INFS-I Division
WAPCOS Limited
76-C, Institutional Area, Sector - 18
Gurugram-122015, Haryana
Email: wapcosiimm@gmail.com

Subject: Litigation History, Liquidated Damages, Disqualification for ---------- (Name of Work /Project)

It is hereby declared that our firm (Name of firm with address--------) neither disqualified, nor have any Litigation history and no Liquidated Damage imposed on the firm by any Department.

Yours faithfully,

Date: (Signature, name and designation of the Authorized signatory)

Place: **Name and seal of Bidder**

FORM-H

MANUFACTURER'S UNDERTAKING

(To be submitted on the Letterhead of the manufacturer)

-Deleted-

FORM-I

FORMAT FOR SOLVENCY CERTIFICATE

SOLVENCY CERTIFICATE

To,
The Additional Chief Engineer (INFS-1)
WAPCOS Limited,
76-C, Sector 18, Gurugram-122015

Name of Work: **Special Repair works in Savitribai Phule Girls Hostel, Swami Vivekananda Hall Boys hostel, Children's Park and Modular Fencing Work in Anand Vihar in IIM Mumbai.**

This is to certify that to the best of our knowledge and information M/s _____ 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 for the work **"Special Repair works in Savitribai Phule Girls Hostel, Swami Vivekananda Hall Boys hostel, Children's Park and Modular Fencing Work in Anand Vihar in IIM Mumbai"**

(Signature) For the Bank with seal
Name:
Designation:
Power of Attorney No.:

Note:
Solvency Certificate should be in Original on letter head of the Bank.
The date of Solvency Certificate shall be after the publication of the tender.

FORM-J

DETAILS OF ANY CIVIL WORK COMPLETED DURING THE SEVEN YEARS

Sl No.	Name of The work & location	Owner or sponsoring organization	Cost of Work (in Crores)	Date of Commencement as per Contract	Stipulated Date of Completion	Actual Date of Completion	Litigation/ Arbitration cases which are over and Litigation/Arbitration cases pending/ in progress with details	Name & address/ telephone number of Executive Engineer/ Project Manager or equivalent to whom reference shall be made	Remark / Reasons for delay and compensation charged if any
1	2	3	4	6	7	8	9	10	11
DETAILS OF SIMILAR ELIGIBLE CIVIL WORK COMPLETED DURING THE SEVEN YEARS									
1.									
2.									
3.									
4.									
5.									
DETAILS OF WORKS FOR "SOLAR HEATING SYSTEM"									
1.									

(Signature of Bidders)

FORM –H

(MOU BY BIDDER WITH AGENCY FOR SPECIALISED JOB for Solar Water Heating system) TO BE SUBMITTED ON A 100 Rs. STAMP PAPER AND DULY NOTARISED OR REGISTERED)

MEMORANDUM OF UNDERSTANDING

This memorandum of understanding (hereinafter referred to as MOU) is made and entered into this _____ day of _____ by and between _____. Having their registered office at _____ (Hereinafter referred to as _____) and _____ having its registered office at _____ (hereinafter referred to as _____) hereinafter collectively referred to as the parties and individually as a Party.

AND WHEREAS, WAPCOS Limited on behalf of Indian Institute of Management Mumbai, (hereinafter referred to as the "PMC") has invited bids for **"_____Name of work"** (hereinafter referred to as the: Project")

WHEREAS, M/s. _____ is desirous to submit the Bid Application for the Project. The condition of the Bid Document permits collaboration with a _____Specialized Job Agency having experience in "Installation/ Repair of Solar Water Heating System"

WHEREAS, _____ (Party, I) intends to associate with _____ (Name of Agency) in the form of Collaboration, Being an experienced Specialized Job Agency agrees to collaborate with _____ (Party I) for carrying out "Installation/ Repair of Solar Water Heating System"

NOW, THEREFORE, in consideration of the mutual promise and covenants set forth herein, the Parties hereby agree that:

1) _____ (Party, I) will include _____ (Specialized Job Agency in the Bid submitted to the PMC as a Collaborator.
2) This MOU is considered to be exclusive and irrevocable for the present project. It is hereby agree that both parties will work in a joint effort to bid for the Tender, and if successful, _____ _____ (Specialized Job Agency) will carrying out "Design, Assessment for Repair of Solar Water Heating System in Girls Hostel" and supporting back up and to give technical assistance in execution of the project.
3) _____ (Specialized Job Agency) confirm that they are capable of carrying out supply, erection, testing & commissioning of Specialized Job Agency & supporting back up and to give technical assistance in execution of the project.(Inclusive of all support backup infrastructure.)

4) _____ (Specialized Job Agency) undertakes that the Specialized Job being offer conform to all the technical specification requirement set forth in the tender and further agree to abide by with the execution schedule (pertaining to timely completion of Setting up of ("Installation/ Repair of Solar Water Heating System") agreed.

5) The scope of either parties is as under _____ (Party – I) shall be responsible for **Construction & maintenance of Civil and other works** and _____ (Specialized Job Agency) shall be responsible for "Installation/ Repair of Solar Water Heating System" and its maintenance for 3 Years. Both the parties under the contract undertake not to communicate to third party any part of this agreement or information which is Technical, financial or otherwise which will be exchanged between the parties during the period of this agreement and 5 (five) years thereafter without prior approval of the IIM Mumbai/ PMC providing the information, except as may be required for the contract bid submission and execution.

This MOU shall be terminated if _____ (Party-I) is not awarded with the work and _____ (Specialized Job Agency) shall be free to associate with any other contractor.

IN WITNESS WHEREOF,

The parties hereto have duly executed this MOU through their authorized representatives as on day and year written above.

For and on behalf of

Party I,	Party II (Specialized Job Agency)
Authorized Signatory	Authorized Signatory
Name :	Name :
Position :	Position :

SECTION– VII

APPENDIX

APPENDIX-I

BANK GUARANTEE FORMAT FOR EMD

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 ……month…… year.

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 Guarantee**).

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

APPENDIX-II

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 PMC, the Contractor can use the alternative makes only BIS marked materials. Non BIS marked materials may be permitted by the PMC/ IIM Mumbai only when BIS marked materials are not manufactured.

Note:

1. The Contractor shall obtain prior approval from the PMC/IIM Mumbai before placing order for any specific material or engaging any of the specialized agencies. The Contractor shall make a detailed submittal with catalogues and highlighted proposed specifications as well as full details of the works proposed to be executed by the specialized agency, as specified.

2. Wherever applicable, the PMC/IIM Mumbai may approve any material equivalent to that specified in the tender subject to proof being offered by the Contractor for equivalence to his satisfaction.

3. Unless otherwise specified, the brand / make of the material as specified in the item - nomenclature, in the particular specifications and in the list of approved materials attached in the tender, shall be used in the work.

4. Reinforcement steel shall be procured from any vendors who have the license for at least 5 years for manufacture of BIS subject to prior written approval of PMC/IIM Mumbai. Steel sample of all the lots procured shall be subjected to testing through recognized laboratories and shall be at Contractors' cost. Sampling shall be as per the Specifications (referred to Schedule F).

S. NO	DESCRIPTION OF WORK	MANUFACTURERS
I	**Structural & Architectural**	
1.	Cement	ACC, Ultra Tech, J. P. Rewa, Vikram, Shree Cement, Birla Jute, Cement Corporation of India, Ambuja Cement
2.	White Cement/ Putty	J.K., Birla, KcJ wall care
3.	Ready Mix Concrete	A.C.C., Ultra Tech, Rmc, Godrej, Skyway,
4.	Waterproofing Compound	Pidilite, BASF, Cico, Fosroc, Roff, Sunanda, Sika
5.	Reinforcement Steel	Sail, Tata Steel, Rinl, Jindal Steel & Power Ltd., Jsw Steel Ltd., Makes- Conforming To Criteria Mentioned In Tender Document
6.	Mechanical Splicing System With Coupler	Splicetek India Pvt. Ltd. Dextra India Pvt. Ltd. Ishita Enterprises
7.	Structural Steel	Tata Steel, Sail, Rinl, Vizag, Jindal, Apl Apollo
8.	Concrete Blocks	Conwood, Gurjari, Hindustan, Lokgroup, Sai Block, Ved Pmc Ltd.
9.	AAC Blocks	Aerocon, Siporex, Ultra Tech, Ecolite, Godrej
10.	Sand	Gujarat River
11.	Precast Concrete Products	Siporex Ind, B.G. Shirke& Co; Supreme Concrete Minato Blocks - Kolhapur

S. NO	DESCRIPTION OF WORK	MANUFACTURERS
12.	Anti-Termite Treatment	PCI, PECOPP, Godrej Hi-Care
13.	Factory Made Concrete Blocks	Astra Concrete, Raj Cover Blocks
14.	Ready Mixed Cement Plaster	Walplast, Ultra Tech, Madras Cement Ltd, Sound Build Care Ltd., Ferrouscrete, Precise Conchem Pvt Ltd.
15.	Paver Blocks/ Grass Pavers/ Kerbstone	Vyara, Basant Betons, Super, Hindustan
16.	External Paver Tiles	H.R.Johnson-Endura, Vyara, Super, Pavit, Kajaria
17.	External Ceramic Mosaic Tiles	Shon, Mridul, Kent Bisazza, Palldio ?
18.	External Texture Paint	Renovo, Ruff&Tuff, Roughtex, Sherwin Williams, SKK(?)
19.	Acrylic Rough Plaster	Asian Paints, Spectrum, Heritage, SKK(?), KcJ wall care
20.	Waterproofing Cement Paint	Snowcem, Berger, Nerolac, Asian
21.	Paints	Ici, Asian, Berger, Nerolac, Dulux, Godavari Paints, Jotun(?)
22.	Gypsum Light Weight Plaster	Gyproc, Ferrouscrete, KcJ wall care, Ultratech, Saint Gobain
23.	White Cement Based Putty For Concrete/Plastered Surfaces	Birla White, KcJ wall care , Plasto Shine, Walplast Products Pvt. Ltd.
24.	Polymer Modified Cementitious Grout/ Cement Adhesive/ Epoxy Grout	Pidilite, Basf, Cico, Fosroc, Roff, Laticrete, Ardex Endura
25.	Polymer Modified Adhesive Mortar For AAC Blocks	Walplast, Ultra Tech, Madras Cement Ltd, Sound Build Care Ltd., Ferrouscrete, Precise Conchem Pvt Ltd., Keracol, Pidilite
26.	Integral Water Proofing Compound	Pidilite, Roff, Fosroc, Sunanda, Cico, Accoproof, Mc Bauchemie, Sika, Kemper, Zerodrip
27.	Cement Bonded Fibre Particle Board	NCL Industries, Visaka, Everest, Bison, Shera, Ramco
28.	Moisture Resistant Board	Saint Gobain Gyproc India, USG Boral
29.	Calcium Silicate Boards/Tiles	Hilux, Promat, Visaka, Starpan, Aerolite
30.	Aluminium Composite Panels	Aludecor, Eurobond, Alstrong, Alucobond, Timex Bond, Viva - All Fr Class B
31.	Friction Hinges & Locks	Cotswold, Geze, Alualpha, Securistyle, Sotralu, Master
32.	Spacertape, Backer Rod	Norton, Bow, Tremco
33.	All Types Of Silicon	Dow Corning, GE, Wacker India
34.	EPDM	Amee Rubber Industries, Okaska
35.	Nuts, Bolts, Screws	Kundan, Puja, Atul,
36.	Welding Rods	Ador, Cosmos, Esab, Super Bond (S)
37.	Stainless Steel Anchor Fasteners	Hilti, Fischer, Klimas
38.	Aluminium Extrusion Sections	Jindal, Hindalco, Nalco, Indian Aluminium Co, Vedanta, Gujrat Aluminium
39.	XPS Blocks	Modi Foam
40.	XPS/EPS Insulation Board	BASF, Owens Corning, Carlisle
41.	Intumescent Strips	Promat, Pemko, Intumex, Astroflame

S. NO	DESCRIPTION OF WORK	MANUFACTURERS
42.	Float Glass Clear	Pilkington, Saint Gobain, Asahi, Modiguard, Guardian, Sisecam
43.	Coated Glass	
44.	Float Glass Mirror	
45.	DGU, SGU, Fire Rated Glass	
46.	Laminated Glass	
47.	Backpainted Glass	
48.	Self-Cleaning Glass	
49.	Fire Resistant Wooden Door Frame & Shutters	Ardor, Signature, Sukriti, Promat, Kutty, Signum, Kenwood, Shreeji, Tufwood, Navair
50.	Fire Resistant Metal Door Frame & Shutters	Ardor, Signature Sukriti, Promat, Kutty, Signum, Kenwood, Shreeji, Tufwood, Navair, Shaktimate Horman, Iclean
51.	Fire Rated Glass	Pilkington, Schott, Saint Gobain, Asahi, Guardian, Modi
52.	Hardware For Fire Rated Doors	Dorma, Geze, Hafele, Hettich
53.	SS Door Hardware	Dorma, Geze, Hafele, Hettich, Kich
54.	Floor Springs, Door Closures, Panic Bar, Patch Fittings	Dorma, Geze, Hafele, Hettich, Horman, Sevax, Casma
55.	Locks	Godrej, Vision/ Vijayan, Dorset
56.	Wooden Flush Doors	Kenwood, Anchor, Century, Greenply, Shreeji, Kutty
57.	Hidden Woodwork	Seasoned Old Burma
58.	Exposed Woodwork	1st BTC
59.	Marine Plywood	Kenwood, Anchor, Century, Greenply, Shreeji, Kutty
60.	Commercial Plywood	
61.	Blockboard	
62.	High Pressure Laminates	Greenlam, Merino, Century Ply Ltd.
63.	Veneers	Greenlam, Euro, Archid, Century Ply Ltd., Timex
64.	Drawer Channels	Earl Bilhari, Efficient Gadgets, Enox
65.	Soft Board	Jolly Board
66.	Screws	Nettlefold, Brass Oxide
67.	High Pressure Compact Laminate Cubicles	Merino, Greenlam, Citadel
68.	Castors	Pitroda, Rexilla
69.	Vertical/ Horizontal Blinds	Vista, Levolor, Mac.
70.	Writing Board	White Mark, Alko Sign
71.	Tecsound Sheet	Texsa, Envirco Solutions, Sound Blanket, Tranquil
72.	Cotton Fabric	Century, Raymond
73.	Nylon Fabric	Reliance
74.	Foam Of Chairs, Sofa	Mm Foam
75.	Fabric Protection	Scotchguard Of Birla 3m

S. NO	DESCRIPTION OF WORK	MANUFACTURERS
76.	Stainless Steel	Jindal, Sail, Tata Steel, Jsw
77.	Polycarbonate Sheets	Palaram, Danpalon, Lexon, Alcox
78.	Architectural Fabric	Ferrari, Nehlek, Hiraoka
79.	Engineered Composite Marble	H.R.Johnson, Cmc, Agl, Asian
80.	Granite	Cmc, Elegant, Asia Pacific, Stone Source
81.	Quartz	H.R.Johnson, Cmc, Agl, Asian
82.	Vitrified Tiles - Glazed, Soluble Salt, Double Charge,Full Body	Somany, Kajaria, H.R.Johnson, Agl, Asian,Nitco
83.	Ceramic Tiles	Somany, Kajaria, H.R.Johnson, Agl, Asian, Nitco
84.	Non Shrink Cementitious Grout	Sika, Fosroc, Basf
85.	Hydrophilic Swellable Water Bar Profile Sealants	Sika, Basf, Adeka India
86.	Polymer Modified Cementitious Grout / Cement Adhesive / Epoxy Grout	Pidilite, Keracol, Ardex Endura, Laticrete, Bal Endura, Ferrouscrete
87.	Polymer Modified Adhesive Mortar For AAC Blocks	Walplast, Ultra Tech, Sound Buildcare Ltd., Ecolite, Ferrouscrete, Keracol, Pidilite
88.	Adhesive For Granite, Marble, Stone	Araldite, Hunstman
89.	Polyster Pu Coating On Venner, Wood	Mrf Corp, Ica, Asian Paints
90.	Adhesive For Wood, Laminate, Veneer	Fevicol-Pidilite, Euro-Jyoti Resins
91.	Plaster Of Paris	Mk, Saint Gobain
92.	Modular False Ceiling GI Frames	Hunter Douglas, Armstrong, Saint Gobain, Ceilux
93.	False Ceiling Aluminium	Armstrong/ Gyproc/ Saint Gobain/ Ceilux/ New Age False Ceiling Pvt. Ltd
94.	Gypsum Ceiling	Saint Gobain - Gyp Serra
95.	Modular Mineral Fibre Ceiling Tiles	Armstrong, Saint Gobain, Ceilux, Hunter Douglas
96.	Acoustical Grid Ceiling	Knauf, Rockfon, Gyptech, Anutone, Armstrong, Fibrecrete, Ecotone
97.	Loop Pile Carpet	Indiana Floor, Pvr Floor, Galeecha Carpets
98.	Wooden Laminate Flooring	Ego, Indiana Floor
99.	Acoustic Panel / Polyster Fibre Board Panels	Tranquir, Inodsonic,Techno Acoustic
100.	Polyster Fibre Insulation	Prime, Nowofill, Mikakasha Mikron
101.	Aluminium Skirting	Cubic, Vedic
102.	Compactors	Kompact, Godrej
103.	Modular Furniture	Godrej, Spacewood, Featherlite, AOS, Kalos
104.	Modular Furniture- SS Wire Baskets	Hettich, Hafele, Kalos, Dorma

S. NO	DESCRIPTION OF WORK	MANUFACTURERS
105.	PVC Edge Banding Tape	Rehau, Dolkin, Pegasus, Fibro
106.	Hot Melt Glue For Edge Banding Tape	Eva (Ethylene Vinyl Acetate) Henkel, Kleiberit 773.3
107.	Wall Paper	Marshalls, Bharat Furnishings, Pvr Flooring
108.	Frosted Glass Film	3m, Llumar, Garware
109.	Vinyl Floor	Armstrong, Square Foot, Pergo
110.	Chairs	Godrej, Penworker, Spacewood, Featherlite, Aos, Kalos
111.	Decorative MDF Boards	Asis, Green, Century MDF
112.	PVC Bird Nets	Balaji Safety Nets, Nets'n'screens
113.	GFRC Fins, Chajja, Cornices	Birla White Cement, Asian Grc, Swastik Grc
114.	P.V.C Rainwater Pipe	Supreme, Astral, Ashirvad, Finolex, Prince
115.	Sanitary Wares	Jaquar, Parryware, Hindware, Kohler, Grohe, Sternhagen
	C. P. Fittings	Jaquar, Parryware, Hindware, Kohler, Grohe, Sternhagen
116.	S. S. Sink	Nirali, Deepali, Futura,
	C. I. Pipes & Fittings	Neco, Kapilansh, Skf, Hepco
117.	G.I. Pipes	Tata, Jindal, Prakash Surya,
	G. I. Fittings	Unik, R-Brand, Zoloto
118.	NP2 Class, R.C.C. Pipes	Jain Spun Pipe, K. K. Spun Pipe, The Indian hume Pipe Co. Ltd., Patel Hume Pipes
	Upvc Pipes And Fittings	Astral, Finolex, Supreme, Kisan, AKG
119.	CPVC Pipes And Fittings	Astral, Supreme, Finolex, Prince, AKG
120.	S. S. Gratings	Chilly, Camry
121.	Expanded Polyurathane Board	Saint Gobain, Macoy, 3m
122.	Anti Vibration Pads/Isolaters	Sylomere
123.	Visco Elastic Synthetic Sound Proofing Membrane	Tecsound, Tranquil
124.	Glass Wool	U. P. Twiga, Rock Wool, Mikron
125.	Internal Partition System	Otic Jeb / Bene/ Vetroln/Fantoni

Specialized Agencies:

Sr. No	Description For Work	Manufacturers & Applicator
1	Waterproofing Works	Sika, FOSROC, Sunanda, Pidilite, ZeroDrip water proofing solutions, BASF, India Waterproofing Co., Nina Waterproofing
2	Curtain Glazing	Glaze Tecno India, Ajit India Pvt. Ltd., Innovators Facade Systems Pvt. Ltd., Alumayer India Pvt. Ltd. 4ftbsys Pvt Ltd Or Any Other Agencies Proposed By The Main Contractor Who Has Executed Work of Similar Nature And Quantum
3	Glass Processer	Asahi Glass, Sejal, Glasstech, Fg, Gsc, Impect Safety, Saint Gobain

4	PVDF Coating	Aura Architectural Coatings, M. J. Coaters Pvt. Ltd., S P Architectural Coatings Pvt Ltd., Ameco, Radiant Anodisers Pvt. Ltd.

LIST OF RECOMMENDED MATERIALS FOR ELECTRICAL AND MECHANICAL (E&M) WORKS

Note:

1. The Contractor shall obtain prior approval from the Dean (IPS) before placing order for any specific material or engaging any of the specialized agencies. The contractor shall make a detailed submittal with catalogues and highlighted proposed specifications as well as full details of the works proposed to be executed by the specialized agency as specified.
2. Wherever applicable, the Dean (IPS) may approve any material equivalent to that specified in the tender subject to proof being offered by the contractor for equivalence to his satisfaction.
3. Unless otherwise specified, the brand / make of the material as specified in the item nomenclature, in the particular specifications and in the list of approved materials attached in the tender, shall be used in the work.
4. Any other / additional Material (Not mentioned below) – Shall be approved from Dean (IPS) before use at site.

Sr. No.	Equipment / Materials	Recommended Manufacturers
A	**Electrical Works**	
1	LT Panels (TTA Panels) OEM Manufactured	Legrand / L&T / Schneider Electric / ABB / Siemens
2	LT Panels (Non TTA Panels) and Motor Control Centre	Legrand / L&T / Schneider Electric / ABB / Siemens (OEM approved TTA vendor)
3	IoT Based System	ABB / Siemens / Schneider / Aunoa / Honeywell / Bosch
4	Sandwiched Construction Bus Duct and Rising Mains	Schneider Electric / Legrand / L&T
5	Distribution Board	Hager / Legrand /Siemens / L&T / ABB
6	Motor Starter	L&T / Schneider / Siemens / ABB / Legrand
7	Air Circuit Breaker	L&T (U-Power) / Schneider Electric (Master Pact NW) / Siemens (3WL) / Legrand (DMX3) / ABB (Emax)
8	Moulded Case Circuit Breaker (MCCB)	Schneider Electric (NSX) / L&T (D-Sine) / Siemens (3VA) / Legrand (DPX3) / ABB (Tmax)
9	LT Switchgears: Miniature Circuit Breakers (MCB) Residual Current Circuit Breaker (RCCB) Residual current operated Circuit Breaker (RCBO) Motor Protection Circuit Breakers (MPCB) Isolators	Hager / Legrand / Siemens / ABB / Schneider Electric / L&T
10	Power / Auxiliary Contactor	Legrand / Schneider Electric / Siemens / L&T

Sr. No.	Equipment / Materials	Recommended Manufacturers
		/ ABB
11	Energy Monitoring System	Legrand / Socomec / Schneider / L&T / ABB
12	Change Over Switch	Socomec / L&T / Legrand / ABB
13	ATS – Auto Transfer Switch	Vitzrotek / ASCO / Socomec / Schneider Electric / Legrand / L&T / ABB / Siemens / GE
14	Control Transformers / Potential Transformers	Automatic Electric / Indcoil / Pragati / AE / Kappa / L&T / Precise / Elmex / Ashmor / ECS / Kalpa
15	Relays	L&T / Siemens / Enercon / Legrand / Trinity / Schneider Electric / Beluk / Ducati / EPCOS / ABB
16	Indicating Lamps (LED type)	L&T / Salzer / Schneider Electric / ABB / Legrand / Siemens / GE / As per OEM Standards
17	Push Buttons and Bush Button Set	L&T / Salzer / Schneider Electric / ABB / Legrand / Siemens / GE / C&S / As per OEM Standards
18	Selector Switch	L&T / Salzer / Kaycee / Schneider Electric / ABB / Legrand / Siemens / MECO / As per OEM Standards
19	Terminal Blocks	Connect Well / Elmex
20	Connectors (Colours as per Phases and Neutral)	WAGO / Phoenix Contact / Connect Well
21	Meters / Energy Meters & Load Managers (Digital)	L&T / Siemens / Schneider Electric / Legrand / ABB
22	Meters (Analog)	L&T / Siemens / Schneider Electric / Legrand / ABB
23	Electric Timers	L&T / Legrand / Siemens / Schneider Electric / ABB / MECO / BCH
24	Rotary Switches	Siemens / Kaycee / Salzer / L&T / Legrand / Schneider Electric / As per OEM Standards
25	LT Capacitors	L&T / Siemens / Legrand / Schneider Electric / ABB
26	Low Voltage Cables	Finolex / KEI / Havells / Polycab / RR Kabel / Century
27	Cable Glands (Double / Single Compression type)	Comet / Cosmos / 3D / HMI / Hex / Jainsons / Dowells / Braco / Polycab
28	Cable Lugs / Cable Terminations	Comet / Cosmos / 3D / HMI / Hex / Jainsons / Dowells / Braco / Polycab
29	Cu. Conductor Wires (FRLS)	Finolex / Havells / Anchor / Polycab / RR Kabel / KEI/ Century
30	PVC Conduits and related accessories	Precision / AKG / Polycab / Anchor / Asian
31	MS / GI Conduit (ISI approved)	AKG / BEC / Vimco / Precision / Steelcraft / Anchor

Sr. No.	Equipment / Materials	Recommended Manufacturers
32	HDMI Cables / USB Cables / Audio Cables	Legrand / AMP / Molex
33	TV Co-Axial Cables	Finolex / Havells / Polycab / RR Kabel / KEI / Molex
34	Modular Switches & Sockets / Modular Base Frames with Plate and GI Switch Boxes	Legrand (Myrius & Arteor) / MK (Blenze Plus & Orna) / Crabtree (Murano) / Schneider (Opale) / Norisys / Panasonic (Europa) / L&T (Englaze) / GM Modular (GX10 Series or equivalent) Model shall be as approved by Architect & Client. Contractor to provide minimum 03 Nos. samples of different makes for approval of Client & Architect
35	Occupancy Sensor / Motion Sensor	Legrand / Schneider / Wipro / Phillips / Siemens
36	Industrial type Sockets (Metal Clad / Splash Proof / Water Proof / Weather Proof)	Legrand / Schneider Electric / L&T / ABB / Siemens / Hager / Hensel
37	Ceiling Fan – BLDC / Exhaust Fans	Atomberg / Superfan / Havells / Crompton
38	Exhaust Fans	Atomberg / Crompton / Havells / Usha
39	Lighting Fixtures	
	a) Internal	Philips / Eveready / Panasonic / Wipro / Trilux, Havels
	b) Decorative	Phillips / Eveready / Panasonic / Wipro / Trilux / Luker / K-Lite
	c) Indoor Gaming / Sports	Philips / Eveready / Panasonic / Wipro / Trilux / Harrison
	d) External	Philips / Eveready / Panasonic / Wipro / Trilux/ K-Lite
	e) Poles for External Light	Eveready / Bombay Poles / Rajan Tubes / Bajaj
40	Junction Boxes	Hensel / Sintex / Clipsal / Spelsberg / SCAME
41	Aviation Light	Bajaj / Insta Power / Spectrum
42	Cable Trays (Ladder Type / Perforated)	OBO Bettermann / Legrand / Indiana / Profab / MK / Erico
43	Floor Raceways / Floor Trunking	MK / Legrand / OBO Bettermann / Asian Ancillary Corporation / Profab / Indiana / Erico / Schneider
44	Floor Junction Boxes	MK / Legrand / OBO Bettermann / Asian Ancillary Corporation / Profab / Indiana / Erico / Schneider
45	UPVC Trunking	MK / Legrand / OBO Bettermann
46	Fire Sealant & Fire-Retardant Paint	3M / HILTI / OBO
47	Lightning Protection System / Surge Arrestor	Axis / LPI / OBO / Dehn / Indelec / ABB Furse / Purcel / Eltech / Tercel

Sr. No.	Equipment / Materials	Recommended Manufacturers
48	Earthing System	OBO Bettermann / JEF / JMV / Axis / Dehn / Eltech / Indelec / ABB
49	UPS	Eaton / APC-Schneider / Legrand (Numeric) / Vertiv (Emerson) / Delta
50	SMF Batteries for UPS	Exide / Amara Raja / Rocket / Amaron / Standard / AMCO / Prestolite / Tata Green
51	Inverter	Microtek / Luminous / Prostarm
52	RCC Hume Pipes	Dhere / KK / Indian Hume Pipe / Pranali
53	DWC Pipes / HDPE Pipes	Rex / Natni / Polymer / Gemini
54	Anchor Fasteners	HILTI / Fischer
55	**Solar Power**	Rayzon / Vikram / Novasis / Sova / Waaree
B	**DG Set Works**	
1	Alternator	Kirloskar Green / Crompton / Stamford / Leroy / Somer / Elmot
2	Engine	Cummins / Caterpillar / Volvo Penta / Kirloskar / Perkins / Greaves/ BAUDOUIN
3	Batteries	Exide / Amara Raja / Rocket / Amaron / Standard / AMCO / Prestolite / Tata Green / Cummins Pulselite /
4	Integrators	Powerica / Goel Power / Sterling & Wilson / Jackson / Captiva / Cooper / Sudhir / Cummins Power / Kalpaka
5	AMF Panel	Legrand / L&T / Schneider Electric / ABB / Siemens
In case, any electrical components or items or related accessories are required for all the above, please refer to the electrical make list for appropriate product recommendations and specifications.		
Sr. No.	**Equipment / Materials**	**Recommended Manufacturers**
C	**ELV Works**	
1	Fire Alarm System and all accessories	Edwards / Simplex / Tyco / Honeywell-Notifier / Bosch / Siemens-Fire finder
2	Cables for Fire Alarm System	Finolex / KEI / Havells / Polycab / RR Kabel / Tyco / Century
3	Public Address System (Master Controller, Amplifier, Speakers, Call Station)	TSG Optimus/ Honeywell Variodyn/ Bosch Preasensa / Bose
4	Cables for Public Address System	Finolex / KEI / Havells / Polycab / RR Kabel / Century
5	CCTV Cameras	Prama / Sony / Samsung / Honeywell / Bosch / Axis / DV Tel
6	24 X 7 LED Displays	Samsung / Sony / LG / Dell / Lenovo / HP
7	Servers / Workstations / Display	Dell / HP / Lenovo
8	Switches and Accessories	Cisco / HP-Aruba /Juniper

Sr. No.	Equipment / Materials	Recommended Manufacturers
	(PoE, Non PoE / Network, Core)	
9	Cat 6 Cables, Wire, Fiber Optic Cables and Patch Cords, Patch Panels and related accessories	R&M / Legrand / Systimax / Molex / AMP / Siemens / Panduit
10	LIU and related accessories	R&M / Legrand / Molex / AMP / Siemens / Panduit / Cisco
11	Hard Disk	Seagate / Toshiba / WD-Purple
12	Racks	Valrack / ApwPresident / Rittal / R&M / APC / Cisco / Wipro / Vertiv
13	Network Video Recorder / Digital Video Recorder, Software and related accessories	Prama / Sony / Samsung / Honeywell / Bosch / Axis / Dv Tel
14	Telephone Tag Box	ADC-Krone / Legrand / Cisco
15	Telephone Junction Boxes and Modules	ITL / Krone / MALSON
16	RJ-45 Information Outlets	Legrand (Myrius & Arteor) R&M / Systimax / Molex / AMP / Siemens / Panduit Model shall be as approved by Architect & Client. Contractor to provide minimum 03 Nos. samples of different makes for approval of Client & Architect
17	Door Access Control System	Siemens / Honeywell / Bosch / HID / Matrix / Fortuna Impex / eSSL
18	Cables for Door Access Control System	Finolex / KEI / Havells / Polycab / RR Kabel / Century
19	Gas leak detection System	Ambetronics /
20	BMS SYSTEM / IOT	Tridium/ Netix/ Auona
In case of LAN & Telephone Works, all the passive components shall be of one make or else 100% compatibility shall be ensured. Required certification for compatibility from the component manufacturer to be furnished on demand of Engineer-In-Charge.		
OEM Manufacturer for TTA Panels and Non-TTA Panels shall be same.		
In case of Light Fixtures, all the fixtures and related accessories shall be sourced from the same make / manufacturer.		
In case, any electrical components or items or related accessories are required for all the above, please refer to the electrical make list for appropriate product recommendations and specifications.		
D	**ELEVATORS**	
1	Elevators	Kone Elevators India Pvt. Ltd. Otis Elevator Company (I) Ltd. Johnson Lifts Pvt. Ltd. Schindler India Pvt. Ltd. Omega Elevators
E	**HVAC**	
1	Air cooled Chillers	Trane, York, Carrier, Climaveneta, Kirloskar
2	Chilled water pump	Grundfos, Armstrong, Xylem

Sr. No.	Equipment / Materials	Recommended Manufacturers
3	PIBC valve	Danfoss, Belimo, Honeywell
4	AHU filters/HEPA filters	Freudenberg, AAF, Camfill
5	Magnelic gauges	Dwyer, Warree
6	Differential pressure Transmitter	Dwyer, Greystone, Setra, Omicron, Siemens
7	Readymade ducting profile	Rola star, Zeco, Radiant, Asawa
8	PIR ducting	Pal, Asawa
9	Airflow Switch	Siemens, Honeywell
10	Balancing Valves	Advance, Castle, Belimo
11	Butterfly valves	Audco, Intervalve, Crane
12	VRV / VRF System (indoor / outdoor units)	Mitsubishi Electric / Daikin / Toshiba / Fujitsu General
13	Double Skin TFA Unit	Zeco / Edgetech / Nutech / Citizen
14	GI Ducts	Jindal / Sail / TATA
15	Grilles and Diffusers	Cosmos / Caryaire / System Air / Airtech / Airpro / Dynacraft / Tristar
16	Ventilation Fans	Kruger / Nicotra / Air Flow / Caryaire / Greenheck
17	Vibration Isolators	Dunlop / Cori / BDK / Resistoflex
18	Fire Dampers	Caryaire / Airtech / Cosmos / Greenheck / Airpro
19	Damper Actuator	Siemens / Honeywell / Belimo
20	Sensors	Siemens / Honeywell / Belimo
21	Motors	Bharat Bijlee / Crompton / Siemens / ABB
22	Starter Panel	Sterling and Wilson / Zenith Engineering / Arrow Engineers / Marine Electricals / Sinerco / Goel Power / Power Control / L&T / ABB / Schneider Electric / GE
23	Refrigerant Copper Piping	Mandev / Totaline / Mexflow / Nippon
24	Insulation Materials	
	a) Resin Bonded	Lloyds / Beardsell / Cooline Navair / Pyroguard / UP Twiga / Kimmco
	b) Rock Wool	Vidoflex / Arma Flex / Arma Cell / Thermobreak / UP Twiga
	c) Nitrile Rubber	K Flex/ Armaflex / Superlon
25	Variable Frequency Drive	Siemens / ABB / Schneider / Danfoss
26	Refrigerant Copper Piping Insulation	K Flex / Armaflex / Superlon
27	PVC Pipes and related accessories	Precision / Polycab / Prince / Finolex / Supreme / Astral / Dunlop
28	Filter	Klenzaids / Spectrum / Pyramid / EMW
29	Fire Rated Canvas Connection	Easyflex / Resistoflex

Sr. No.	Equipment / Materials	Recommended Manufacturers
30	Adhesives	Armaflex 520 / Pidlite SR 998 / Foster / IIDL / Napco / Star Bond
31	Central Controller	Daikin / Toshiba/ Mitubishi / Fujitsu General
32	Corded / Cordless Remotes	Daikin / Toshiba/ Mitubishi / Fujitsu General
33	Flow Control Devices	Aldes / Transmonk / Airflow / Belimo/ Seimens / Schneider / Flowcom
F	**FIREFIGHTING**	
1	Fire, Sprinkler, Hydrant Main / Jockey Pumps	Kirloskar / Mather & Platt-WILO / Crompton / KSB
2	Terrace Pumps	Kirloskar / Mather & Platt-WILO / Crompton / KSB
3	Diesel Engine	Cummins / KOEL / Greaves / Perkins / Cooper / Gemmco
4	Battery	Exide / Amara Raja / Rocket / Amaron / Standard / AMCO / Prestolite / Tata Green
5	Battery Chargers	Servilink / HBL / Numeric / Robin Teper
6	Motors	KEC / Siemens / ABB / Crompton / Kirloskar / Crompton / Bharat Bijlee
7	Starters	L & T / Schneider / Siemens / ABB / Legrand
8	Anti Vibration Mounting, Expansion Joints	Dunlop / Resistoflex / Easy Flex / Flexionics / Vimpa / IMRA
9	Motors	KEC / Siemens / ABB / Crompton / Kirloskar / Crompton / Bharat Bijlee
10	Starters	Legrand / L&T / Schneider Electric / ABB / Siemens
11	GI / MS Pipes	TATA / Jindal / Sail
12	Pipe Fittings	Jainsons / Unik / VR
13	Non-Return Valves	Leader / Zoloto / Sant / Kirloskar / Advance / Audco / Hawa / Lehry
14	Gate Valves	Leader / Zoloto / Sant / Kirloskar / Advance / Audco / Hawa / Lehry
15	Sluice Valves	Leader / Zoloto / Sant / Kirloskar / Advance / Audco / Hawa / Lehry
16	Butterfly Valves	Leader / Zoloto / Sant / Kirloskar / Advance / Audco / Hawa / Lehry
17	Ball Valves	Leader / Zoloto / Sant / Kirloskar / Advance / Audco / Hawa / Lehry
18	Air Release Valves	Leader / Zoloto / Sant / Kirloskar / Lehry / Shah Bhogilal
19	Solenoid Valves	Rotex / ASCO / Switzer / Danfoss / Aira Eurotech / Honeywell
20	Y-Strainer	Leader / Zoloto / Sant / Kirloskar / Advance / Audco / Hawa

Sr. No.	Equipment / Materials	Recommended Manufacturers
21	Pressure Switches	Indfos / Danfoss / Honeywell / Stefa / Switzer / NICO
22	Pressure Gauges	HD Fire / H Guru / Fiebig / Waree
23	Air Vessel	Nema / Golden Deer / Zenith / As per CPWD Specifications tested upto 25KG / Sq. Mtrs.
24	Anti Corrosive Materials	IWL / Rustech / Pypkote
25	Pipe Clamp & Supports	Chilly / Euroclamp / Easyflex / Gripple
26	Hydrant Valves	Padmini / New Age / Omex / Minimax / Superex
27	Fire Hydrants	Padmini / New Age / Omex / Minimax / Superex
28	RRL Hose Reel	Padmini / New Age / Omex / Minimax / Superex
29	Fire Hose Reel	Padmini / New Age / Omex / Minimax / Superex
30	Fire Hose, First -Aid Hose Reel, Branch Pipe, Siamese Connections, Hose Coupling, Nozzle, Fire Brigade Connection, etc.	Padmini / New Age / Omex / Minimax / Superex
31	Stand Post Hydrant	New Janta Metal Works / New Age / AAG / Padmini
32	Sprinklers	HD Fire / Tyco / Viking / Grinnell / Spray Safe
33	Flexible Drop Connection	Flexhead / Newage / Tyco
34	Flow Switch	Danfoss / Switzer / Honeywell / System Sensor / HD Fire / Tyco
35	Test Drain Assembly	New Age / Tyco / HD Fire / Viking / Spray Safe / Grinnell
36	Alarm Control Valve, Installation Control Valve	New Age / Tyco / HD Fire / Viking / Spray Safe / Grinnell
37	Fire Extinguisher	Kanex / Minimax / Safex / New Age / Cease Fire / Safe Guard
38	Single Phase Preventer	Salec / Legrand / Minilec
34	C.I Water quality pipes	Electrosteel / Kapilansh/Keshospun
35	C.I Soil quality pipes	Neco / Saint Gobain/ Kapilansh
S.	Description	Approved Makes
36	C.I Frame & Cover	Neco / Saint Gobain
37	S.W Pipe & Gully Trap	Kashmira, Rajura, Girco, Perfect, C.I.or approved eq.
38	RCC Hume pipe	IHP, Pranali, Premier, Shreeji, Pragati, Usha, JSP or app. Eq
39	SFRC frame & cover / gratings	Bharat, Shreeji, SS, KK or approved eq.
40	HDPE Pipe	Supreme / Mahavir

Sr. No.	Equipment / Materials	Recommended Manufacturers
41	SS Pipes & Fittings	J-Press/ Viega/ Platinox
42	SWR-UPVC pipe & fittings	Supreme / Ajay / Astral
43	Water supply PVC pipes & fittings	Ashirwad/ Ajay / Astral
44	Pig Lead	Hindustan Zinc
45	PVC flushing Cistern	Parryware / Hindware
46	Pressure Gauge	Fiebig / H. Guru
47	Foot Valve (Ball type)	Normex /Zoloto/Itap
48	SBR / EPDM Gaskets	Prabhat, Orient, Paul, Durable or approved eq.
49	C.I fittings / Specials	Electrosteel / Kapilansh/NECO
50	Flush Valves	Jaquar / Grohe / Kohler
51	Check Valve WaferType	Advance / Danfoss / Kirloskar
52	Check Valve Dual Plate	Advance / SKS
53	Check Valve Forged Screwed	Leader / RB / Sant / TBS / Zoloto
54	Check Valves (slim type)	Zoloto / Intervalve
55	Butterfly Valve	Itap / C&R / Audco
56	Ball Valve (15 to 40 mm)	Sant / Zoloto
57	Pressure Reducing Valve	VARIE (Vartsila) / Honeywel/Zoloto
58	Cockroach trap	Chilly
59	CI double flanged non-return valve	Kirloskar, IVC, Leader,
60	Cast Iron Pipes & Fittings Manhole covers and frames	
a.	As per IS:3989 (Pipes & Fittings)	Kapilash
b.	As per IS:1729 (Manhole covers and frames)	Raj Iron Foundry Agra
c.	As per IS:1536 (CIClass LA Pipes)	IISCO / NECO /Electrosteel
61	D.I. Manhole Covers & Frames	Neco / Kapilansh
62	CILA fittings	Kartar valves & fittings
3	Suspended Manhole and Gully Trap	Patel Pattern
64	Drip Seal	ACQUA Bond / Vinod Cement Co.
65	GI pipe sealent	Henkel - LOCTITE 55
66	Pipe clamp & supports	Chilly / Euroclamp / Easyflex / Gripple
67	D. I. Pipes	Electro Steel / Jindal / Lanco Kalahasthi
68	Copper Pipes & Fitting	Flowflex Rajco / Viega Max flow
69	UPVC Pipe	Astral / Ashirwad/ Ajay
70	CPVC pipes	Astral / Ashirwad/ Ajay
71	PB Pipe	Flexalen Thermaflex / George Fisher

Sr. No.	Equipment / Materials	Recommended Manufacturers
72	Solenoid Valve	Avcon / Danfoss
73	FRP frames, covers and gratings	Everlast / Thermodrain / Fibro cast
74	Enamel Panting of pipes etc. (low VOC)	Asian (ADCOLITE ONLY) / Goodlas Nerolac / ICI
75	Ball Float Valve	Esseti / HBD / Zoloto
76	NRV Ball type Sewage application	Danfoss / Silverspark
77	Y Strainer CI	Emerald / Sant / SKS / Zoloto
S.	Description	Approved Makes
78	Water Pumps	Grundfos/DP/Wilo/KSB/Kirloskar
79	Anti Vibration Mounting & Flexible Connections	Cori / Dunlop / Flexionics / Kanwal Industrial Corporation / Resistoflex /
80	Pressure Switch	Indfoss / Danfoss
81	HDPE corrugated underground	D-Rex
82	Electronic Flow Meter	Krohne (Forbes Marshall) / Rockwin
83	Level Controller & Indicator (Water)	Auto Pump / Cirrus Engineering / Elegent Controls / Technika / Techtrol
84	MH / Water Tank Plastic Steps	KGM / Patel / Pranali Industries
85	Fastner	Fisher / Hilti
86	Fire Sealant	Birla 3 M / Hilti / Promat / STI (USA)/
87	Manhole (Prefabricated)	OK Play / Supreme
88	Temperature Sensor/ Gauge	Forbes Marshall / Danfoss / Wika
89	Pressure Vessel	ELBI / Wellmate/ Aventura

NOTE:

- **THE SUPERIOR/ EQUIVALENT MAKE MAY BE USED ONLY AFTER THE APPROVAL OF ENMPLOYER.**
- **IN CASE ANY INFERIOR QUALITY / SUB-STANDARD MAKE IS FOUND TO BE SUPPLIED BY THE CONTRACTOR, THE EMPLOYER'S RESERVES THE RIGHT TO DISCARD THE USE OF THE SAME.**

APPENDIX-III

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 upto 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 defence 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. (100ft.) 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 borewell, 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 borewell, 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 reparing the pump;
vi. After the borewell 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 eyeshields.
(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 atleast 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 of 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 helmet 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 equipments 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.

APPENDIX-IV

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 equipments :-

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 salvolatile 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 tablet (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.

1) 12 small sterilised dressings.
2) 6 medium size sterilised dressings.
3) 6 large size sterilised dressings.
4) 6 large size sterilised burn dressings.
5) 6 (15 gms.) packet sterilised cotton wool.

6) 6.1 (60 ml.) bottle containing a two per cent alcoholic solution iodine.
7) 1 (60 ml.) bottle containing salvolatile 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 tablet (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 are 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) Construction of latrines: The inside walls shall be constructed of masonry or some suitable heat-resisting nonabsorbent 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 upto 50 and one for female workers upto 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 upto 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 of 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 sqm (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 creche when the number of women workers does not exceed 50 and two when the number of women workers exceeds 50.

(v) The use of the rooms earmarked as creches 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 necessary for the efficient running of the canteen.

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.

(xiv) The food stuffs and other items to be served in the canteen shall be in conformity with the normal habits of the contract labour.

(xv) 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.

(xvi) 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.

(xvii) 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 notices inviting tenders and shall form an integral part of the contracts.

12. AMENDMENTS

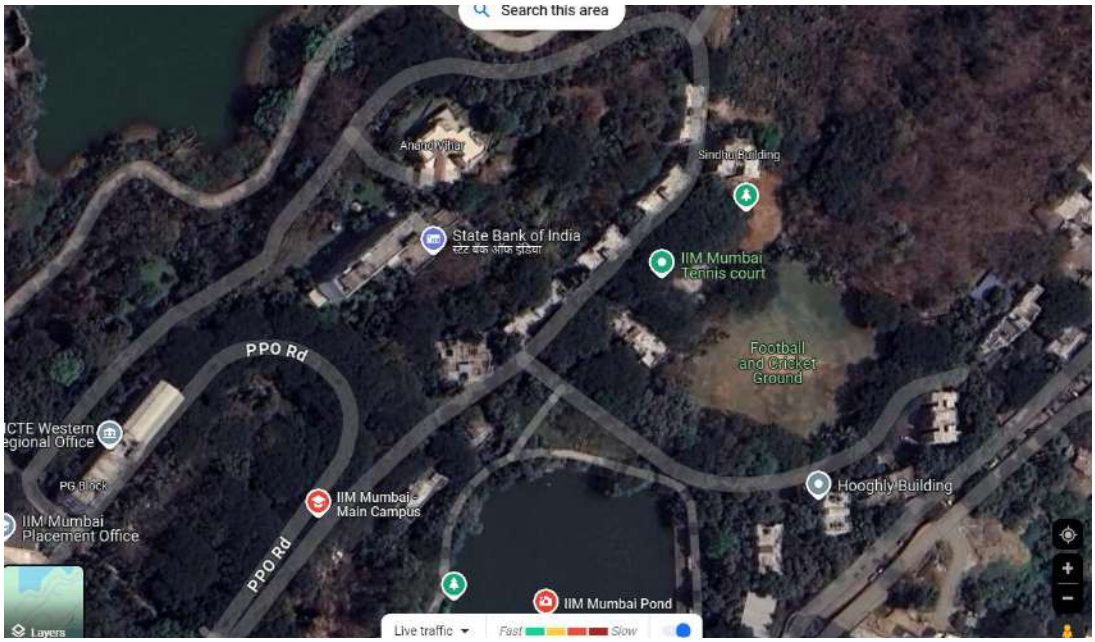
Government may, from time to time, add to or amend these rules and issue directions - it may consider necessary for the purpose of removing any difficulty which may arise in the administration thereof.

Volume-II
Tender Specifications

SECTION-VIII: SCOPE OF WORK

1.0 Site:

The site is located within the Indian Institute of Management Mumbai vihar lake road, Powai, Mumbai.



The details items are places under Bill of Quantities along with Item description and Technical specifications in the tender for execution of works as per direction of PMC/ Architects/ Engineer-In-Charge.

Part A: Repair & renovation of Savitribai phule Girls Hostel

Savitribai Phule Girls Hostel building, in IIM, Mumbai campus consists of G+7 floors with 168 twin occupancy rooms. Most of the rooms occupied by the girl's heavy leakages / seepages of water are observed in the adjoining walls to the toilets, cupboard area & toilets in the down floor. Due to above heavy leakages the occupants cannot use even wardrobe for keeping their belongings which is a cause of concern. The leakages from bathrooms' floors are also making difficult for use of toilets in the down floor levels. It has also been observed that some plumbing & sanitary fixtures are damaged & needs to be replaced.

In lobby area the plaster has come out at some places due to seepage & needs to be repaired & the whole building should be painted rooms & common areas. Also the terrace waterproofing is damaged and should be redone with advance technique. The floor & dado tiling in some bathrooms & rooms needs to be replaced/repaired. The building also requires pest control treatment.

Note: The specifications for various materials, equipment, plants and execution of work components given in the Bid Document thereafter are genetic. Only the specifications for those components which are covered in this scope of work shall be applicable to this Bid Document/DNIT.

- **General Principles**

The contractor shall carryout all works wholly in accordance with the terms and conditions of the contract to fulfil the requirement of the project. All the material used, and the equipment installed shall be as per the scope & specifications defined in the contract and the work shall be executed with Good Engineering Practices.
Generally, the following activities shall be carried out for each stage of this contract but shall not be limited to:

Stage1: Submission and getting approval from EIC of the methodology to be adopted for each component of work after conducting the necessary survey. Also getting approvals for the manufacturers make/brands of material to be installed/used during the construction/ maintenance work.

Stage2: Execution and completion of the work as per the provisions of the bid document.

Stage 3: **1) Defect liability period for 3 (Three) Year thereafter for all the works.**
2) Guarantee for 10 (Ten) Years thereafter for Water-proofing and anti-termite treatment work.

- **Major Components of Work**

1) Water pressure testing in all the toilets as per the BOQ
2) Investigation of leakages / seepages of water & Repair/ replacement of Plumbing & sanitary fixtures wherever required including exposing the joints by cutting & making the surface smooth after the work as per the BOQ
3) Removal of existing floors in toilets, waterproofing, relaying of drainage pipes & dry & wet curing for 5 days against any leakages filling & finishing complete as per the BOQ
4) Plastering at required places, applying putti painting rooms & common areas of the building as per the BOQ
5) Providing Chemical Waterproofing at top of the roof as per the BOQ
6) Providing water-proofing and anti-termite treatment with 10 years' guarantee as per the BOQ
7) Any other work required for total completion
8) Pest Control.

Note: The quantities and mentioned in BOQ are indicative only and the contractor is required to undertake his own detailed investigation of the Project to facilitate complete Scope of services.

Part B: Repair & renovation of Swami vivekananda Hall Boys hostel

Swami Vivekananda Boys hostel in IIM, Mumbai campus have G+16 story structure with 382 rooms with double occupancy. It has two no. common washrooms at every floor. In most of the toilets heavy leakages / seepages were observed in the adjoining walls of toilet, Inside the toilets and toilets floors. Due to heavy leakages boys are not able to use toilets properly. It has also been observed that most of the toilets require complete waterproofing of sunken slab portions of toilets including replacement of damaged plumbing & sanitary fixtures. In all the windows of hostels rooms, provision for stopping entries of rats, by providing suitable wire mesh are also to be carried out.

In lobby area the plaster has come out at some places due to seepage & needs to be repaired. All the rooms in whole building should be painted including the common areas. Also, the terrace waterproofing shall be replaced. The floor & dado tiling in some bathrooms & rooms needs to be replaced/repaired. The building also requires ant termite treatment.

Note: The specifications for various materials, equipment, plants and execution of work components given in the Bid Document thereafter are genetic. Only the specifications for those components which are covered in this scope of work shall be applicable to this Bid Document/DNIT.

General Principles

The contractor shall carryout all works wholly in accordance with the terms and conditions of the contract to fulfil the requirement of the project. All the material used, and the equipment installed shall be as per the scope & specifications defined in the contract and the work shall be executed with Good Engineering Practices.
Generally, the following activities shall be carried out for each stage of this contract but shall not be limited to:

Stage1: Submission and getting approval from EIC of the methodology to be adopted for each component of work after conducting the necessary survey. Also getting approvals for the manufacturers make/brands of material to be installed/used during the construction/maintenance work.

Stage2: Execution and completion of the work as per the provisions of the bid document.

Stage 3: **1) Defect liability period for 3 (Three) Year thereafter for all the works.**
2) Guarantee for 10 (Ten) Years thereafter for Water- proofing and anti-termite treatment work.

- **Major Components of Work**

1) Water pressure testing in all the toilets as per the BOQ
2) Investigation of leakages / seepages of water & Repair/ replacement of Plumbing & sanitary fixtures wherever required including exposing the joints by cutting & making the surface smooth after the work as per BOQ
3) Removal of existing floors in toilets, waterproofing, relaying of drainage pipes & dry & wet curing for 5 days against any leakages filling & finishing complete as per BOQ
4) Providing suitable wire mesh for prevention of rats entries in the room as per BOQ
5) Plastering at required places, applying putti painting rooms & common areas of the building as per BOQ
6) Providing anti termite treatment with 10 years guarantee as per BOQ
7) Any other work required for total completion.
8) Pest Control.

Note: The quantities and mentioned in BOQ are indicative only and the contractor is required to undertake his own detailed investigation of the Project to facilitate complete Scope of services.

Part C: Repair of existing solar Water Heater System in Savitribai Phule Girls Hostel.

In Savitribai Phule Girls hostel, the hot water supply is made through the solar water heater system fixed at rooftop. It has been informed by the hostel committee that hot water supply system often gets interrupted in many rooms which creates discomfort amongst the occupants. The current hot water supply frequently gets unserviceable & the temperature of water is not stable. During rainy season also the system is not working. Students have made to address the problems.

In view of above it was opined that the present water solar system may be repaired & upgraded which will ensure 24 X 7 hot water supply throughout the year. After successful installation the party shall be responsible for Defect Liability period for 3 years and furthermore annual maintains for 3 years.

Note: The specifications for various materials, equipment, plants and execution of work components given in the Bid Document thereafter are genetic. Only the specifications for those components which are covered in this scope of work shall be applicable to this Bid Document/DNIT.

- **General Principles**

The contractor shall carryout all works wholly in accordance with the terms and conditions of the contract to fulfil the requirement of the project. All the material used, and the equipment installed shall be as per the scope & specifications defined in the contract and the work shall be executed with Good Engineering Practices.
Generally, the following activities shall be carried out for each stage of this contract but shall not be limited to:

Stage 1: Submission and getting approval from EIC of the methodology to be adopted for each component of work after conducting the necessary survey. Also getting approvals for the manufacturers make/brands of material to be installed/used during the construction/maintenance work.

Stage 2: Execution and completion of the work as per the provisions of the bid document.

Stage 3: **Defect liability period for 3 (Three) Years thereafter for all the works and annual maintains for 3 years from the date of completion of work.**

- **Major Components of Work**

1) Replacement of Solar Flat Plate Collector along with Painted MS Supports, Plumbing, Valves, Gaskets, SS 304 Fasteners, etc. as per BOQ

2) Supply and Installation of 1000 Liter, SS 304, Thickness - 3 mm, Insulated Hot Water Tank with 3KW X 5 Nos of Electrical Heater, Plumbing's, NRV / Valves and accessories as per BOQ

3) Providing and fixing Polyethelene-Aluminium-Polyethelene PE-AL-PE pipes, 20 mm, along with installation as per BOQ

4) Supply and Installation of Insulation of existing 40 mm, GI Pipes with 9 mm, Rubber Nitrile Insulation as per BOQ

5) Supply and Installation Insulation of 25 mm, GI Pipes with 9 mm, Rubber Nitrile Insulation and Aluminium cladding as per BOQ

6) Supply and Installation of Swing type, Brass, Non-Return Valve along with minor spares as required for each bathroom as per BOQ

7) Supply and Installation of Forced Circulation Motor Pump set (1 M+1S), 4500 LPH, 25 M Head, Compatible to 70 deg C along with accessories as per BOQ

8) Supply and Installation of Automatic Differential Temperature Control Panel, Recirculation Pumps, Electrical Heaters along with Thermo couplers and Data cables in PVC Conduit Pipes as per BOQ

9) Dismantling and Re- Installation of FPC collectors along with chemical Descaling with replacement of Gaskets including Civil Works as per BOQ

10) Painting of FPC collector supports and Tank Supports with Hardener based Epoxy Paint (2 Coats) and One coat of Black Color Enamel Paint as per BOQ

11) Defect liability period of 1 years from the date of commissioning and Comprehensive Annual maintenance contract for further 3 years. Visit of technician & Cleaning of system on every quarter along with breakdown maintenance as and when required.

12) Any other work required for total completion.

Part D: Repair / Renovation & Installation of Modular fencing around Children Park / Kids Play Area

IIM Mumbai campus has one small kids play area in the residential zone area. It was obsereved that the kids play area shall be renovated since existing fencing has got damaged & needs to be replaced. The Swings structural members are rusted & some of the structural members needs to be replaced. In the absence of any drainage system in kid's area, the earth has been eroded and soil has been washed away & hard strata/ stones are exposed which is very dangerous for the small kids.

It is proposed that the present fencing and Gates shall be replaced by pre-fabricated modular fencing. Proper drainage system shall be made along the periphery over the ground area. All the swings shall be repaired & painted.

Note: The specifications for various materials, equipment, plants and execution of work components given in the Bid Document thereafter are genetic. Only the specifications for those components which are covered in this scope of work shall be applicable to this Bid Document/DNIT.

- **General Principles**

The contractor shall carryout all works wholly in accordance with the terms and conditions of the contract to fulfil the requirement of the project. All the material used, and the equipment installed shall be as per the scope & specifications defined in the contract and the work shall be executed with Good Engineering Practices.
Generally, the following activities shall be carried out for each stage of this contract but shall not be limited to:

Stage1: Submission and getting approval from EIC of the methodology to be adopted for each component of work after conducting the necessary survey. Also getting approvals for the manufacturers make/brands of material to be installed/used during the construction/maintenance work.

Stage2: Execution and completion of the work as per the provisions of the bid document.

Stage 3: **1) Defect liability period for Three (Three) Year thereafter for all the works.**

- **Major Components of Work**

1) Dismantling & buyback removal of existing fencing.
2) Supply & erection of Unico Prima modular fencing including necessary civil works.
3) Making Drainage system.
4) Repair & painting of all the swings.
5) Any other work required for total completion.

Part E: Supply & Installation of Modular Fencing work & Gates in Anand Vihar

It was requisitioned/observed that for security & safety purpose, fencing and Gates shall be provided around the periphery of Anand Vihar, which is located on North direction of IIM Mumbai campus. The building is quite remotely situated from safety point of view.
It is suggested to provide Pre-fabricated modular fencing including 3 nos. gates which includes all the civil works like excavation, RCC pedestals, Plastering & painting etc.

Note: The specifications for various materials, equipment, plants and execution of work components given in the Bid Document thereafter are genetic. Only the specifications for those components which are covered in this scope of work shall be applicable to this Bid Document/DNIT.

- **General Principles**

The contractor shall carryout all works wholly in accordance with the terms and conditions of the contract to fulfil the requirement of the project. All the material used, and the equipment installed shall be as per the scope & specifications defined in the contract and the work shall be executed with Good Engineering Practices.
Generally, the following activities shall be carried out for each stage of this contract but shall not be limited to:

Stage 1: Submission and getting approval from EIC of the methodology to be adopted for each component of work after conducting the necessary survey. Also getting approvals for the manufacturers make/brands of material to be installed/ used during the construction/maintenance work.

Stage 2: Execution and completion of the work as per the provisions of the bid document.

Stage 3: **1) Defect liability period for 3 (Three) Years thereafter for all the works.**

- **Major Components of Work**
  1) Supply & erection of Unico Shield modular fencing including necessary civil works like excavation, RCC pedestals, Plastering & painting. also Provision of 3 No. of Gates.
  2) Defect liability period of 1 year
  3) Any other work required for total completion.

Note: **The institute operations are running during the construction. Hence it is desired that the work of Savitribai Phule Girls Hostel and Vivekananda Hall Boys Hostel shall be planned for execution and completion during April & May 25 (i.e. during summer vacation) with least interference.**

Section- IX
Technical Specification

1.0 GENERAL SCOPE OF WORK

IIM-Mumbai desires to carry out various special repair worls within IIM Mumbai campus at Powai with the briefscope as below:

A) Civil and other allied works

The broad scope of work shall include Civil Works, Plumbing & Sanitary works, Water supply, Internal and External Electrical works, Services works, & Exterior finishing works etc.

The broad scope of work shall include Civil Works, Plumbing & Sanitary works, Water supply, Internal and External Electrical works, Services works, Interior / Furniture & Exterior finishing works etc.

The work to be performed under this specification shall include providing all labour, supervision, materials, storages, inventories, all enabling works like scaffolding, watch and ward for the works, power, fuel, construction equipment, water, tools and plants, supplies, transportation, all taxes and duties, all labour welfare and safety measures, complete and all other incidental items not shown or specified, but reasonably implied or necessaryfor successful completion of the work including Contractor's supervision andin strict accordance with the drawings and specifications, inspection and testing standards and field quality control and testing as given in the tender documents and the complete execution of the works. The scope shall also include preparation of fabrication drawings and bar bending schedules, based on the drawings released for construction and getting the same approved by the Engineer-in-Charge.

The contractor shall have sole responsibility of co-ordination for constructionactivities, though he may employ separate sub- contractors Electrification including LT installation, Lifts and fire-fighting, HVAC etc. All co-ordination and interfacing with all the sub- contractors shall be done by the contractor.

2.0 COMPLETION PERIOD:

Completion period for combined package shall be as per NIT Data.

3.0 SPECIFICATION FOR WORK, QUALITY AND WORKMANSHIP

Work shall be carried out as per C.P.W.D. specifications and for items not covered in the C.P.W.D. specifications the details shall be as outlined in thistechnical specification or relevant IS codes (latest).

The specifications are intended for the general descriptions of the work, quality and workmanship. The specifications are not, however, intended to cover the minute details and the work shall be executed according to the best Central Public Works Department practices or to the recommendations of relevant Indian Standard/International Codes like ASTM/DIN or according tothe instructions of the Engineer-in-Charge.

All the materials of the project shall be sourced from the List of Approved Makes as provided herein. For items whichare not available in the "List of Approved Makes", the decision of Engineer-in-charge shall be final. The procurement of various materials shall be either from the manufacturer or their main authorized dealers to ensure thatno duplicate/spurious makes are used in the works. The Contractors are required to submit manufacturer's test certificates for the lots supplied at site with due endorsements by the actual dealers/vendors/sellers. Notwithstanding all the above, the contractor shall be held responsible for theexecution of works and use of proper materials as per the tender specifications. Any material shall be approved by the Engineer-in-charge before put to use.

Wherever reference to CPWD/Indian Standard Codes and Practices is made, it shall be to the latest edition/revision of the same, issued up to 7 days priorto the date of opening of this tender.

The tenderer must obtain clarifications, if any, regarding the specifications and all other tender documents before submission of the tender in writing with the Employer in respect of interpretation of any portions of thesedocuments.

4.0 TESTS OF MATERIALS/WORKMANSHIP

All mandatory tests shall be carried out as required in the CPWD specifications and IS codes. Test mentioned in individual items/specifications shall also be carried. All tests required for all materials shall be at the Contractor's cost. In case of items not covered in the CPWD specifications and IS code contractor shall arrange testing as per practice of the industry without any additional cost. Manufacture's test certificate of the relevant batch of material procured shall also be submitted for all measure items.

5.0 LAYOUT AND LEVELS

The layout and levels of all buildings, structures etc. shall be made by the Contractor at his own cost from the general grid of the plot and bench marksas approved by the Engineer-in-Charge. The Contractor shall also assist inthe form of instruments, materials and men to Engineer-in-Charge for checking the detailed layout and correctness of the layout and levels, at his own cost. But the Contractor shall be solely responsible for correctness of layout and levels. The levels and heights mentioned in the tender drawingsare only tentative. The works shall be carried out as per Construction drawings issued after the award of the works.

6.0 CONSTRUCTION METHOD

The tenderer shall submit construction schedule, names of specializedagencies/products, list of construction equipment to be deployed and write-upto indicate in a broad outline how he intends to execute the work with the best co-ordination among various sub-packages (or sub-heads). These shallform part of this Tender.

7.0 DRAWINGS:

Drawings enclosed with this Tender Document shall form a part of this specification and supplement the requirement specified herein. The tender drawings are preliminary and meant for tender purpose only. These drawings provide a general idea about the work to be performed under the scope of this Contract and are by no means final drawings showing the full range of work under the scope. Work shall be executed strictly according to'Released for Construction' (or 'Good for Construction') drawings with additions, alterations and modifications made from time to time as required by the Employers.

The Contractor is required to furnish a schedule indicating their requirementsof 'Release for Construction' drawings compatible with the approved detailedconstruction program within 10 days of award of the work for scrutiny and approval and subsequent finalization of the Employers. 'Good for Construction' drawings shall be issued to the contractor progressively duringthe execution of the contract as per actual progress achieved and requirements at site. Based on the 'Released for Construction' drawings, contractor will prepare reinforcement placement drawings including the Bar Bending Schedule, Steel Fabrication Drawings, all other shop drawings etc.
Any technical clarifications required regarding the drawings/specifications during the progress of works shall be obtained from the Engineer-in-Chargeallowing a minimum of four working days for processing. Such "Requests forInformation" (RFI) shall be in approved format which can be obtained from Engineer-in-Charge.

The actual terminal point of scope of works under this contract shall be as shown in 'Good for Construction' drawings.

8.0 APPROVED VENDORS AND MAKES:

The Vendors / Makes are available in "List of Approved Makes"For items which are not available in the same, the decision of Engineer-in-charge shall be final.

However, to facilitate procurement, the list of makes, shall be treated as indicative list, which is not comprehensive in nature.

9.0 APPROVED SUB-CONTRACTORS:

If the tenderer wishes to appoint any sub-contractor for scope of Electrification, HT & LT installation, HVAC, Safety, fire-fighting etc. approval of Engineer-in-charge shall be obtainedbased on their technical experience and qualifications as approved by the Engineer in charge.

If at any time during the construction, the works are suspended by any approved vendor/sub-vendors, due to any reason whatsoever, the works shall be completed within the contract period by any other vendor subject tothe Employer's approval, at no additional costs, whatsoever.

10.0 PRE DISPATCH INSPECTION:

Necessary dispatch clearance for all bought out items shall be accorded by executing site. Inspection of the items, based on the criticality, shall also be carried out by executing site.
The transformer and Diesel generator sets shall mandatorily be tested for routine and acceptance tests as per the relevant IS/IEC standards. Clients may witness the tests as per requirement.
The type test report for transformer, diesel engine and alternator as per relevant standards shall be submitted for purchaser's approval.

11.0 MAINTENANCE CREW DURING DEFECT LIABILITY PERIOD:

The tenderer shall submit along with the offer, the details of crew (number, level and detailed skills) to take adequate care of routine maintenance and also the minimum inventory of spares for the Employer's approval.

12.0 MISCELLANEOUS

(a) The contractor shall be responsible for watch and ward of all the works, equipments and various materials till complete handing over the works and allnecessary arrangements to co-ordinate with watch and ward of other contractors working simultaneously and also of the Employers shall be madeto the complete satisfaction of the Engineer-in-Charge.

(b) The list of deliverables which are to be submitted to the Employer shall be discussed and finalized by the Employer at the time of award. The Contractor shall necessarily submit all the drawings/documents/other deliverables unless anything is waived. The contractor shall submit 4 (four) sets of drawings/design documents/test reports as may be required for the approval of the Employer.

(c) The contractor shall co-operate with the representatives of the Employer fordue verifications of various compliances of various statutory regulations and tax compliances as and when required. All the documents of record shall bemade available to the Employers and copies, wherever required, shall be submitted.

(d) Employer reserves the right to inspect all the material before dispatch. However, depending upon nature of material, waiver of inspection may be granted for which the Contractor shall take prior approval of the Employer. This will be done on case to case basis.

(e) The Contractor shall make arrangements for regulation of traffic by engaging security staff. They shall also make necessary arrangements to prevent unauthorized entry in the premises

(f) Contractor shall comply with all regulations of local authorities without anyfinancial implication to IIM-Mumbai.

13.0 COMPLETION CERTIFICATE

On completion of the work the Contractor shall obtain completion certificate from local bodies or statutory body viz. MCGM, CFO, MCGM Ward Office, MMRDA, MHADA, NOC's issuing departments of MCGM etc for and on behalf of the Owners / Consultants for the construction as contemplated in this contract. However the Owner & Consultant may also help contractor to the extent of writing letters toLocal bodies for expediting approval, if required. Further if any fee is requiredto be paid to the local/statutory bodies, the same shall be reimbursed to contractor by the owner against documentary evidence.

PREAMBLE TO SPECIFICATIONS

1.1 GENERAL

All Works shall be measured net as completed or as fixed in place with no allowance (unless specified for) for cuttings, wastage, joints, risks etc. No allowance shall be made for large or small quantities, narrow widths, easy access or difficult positions or other exceptional circumstances. Any work executed over and above the dimensions given in drawings or sketches provided by the Engineer in charge or written instructions by the Engineer in charge shall be ignored, and no payment shall be made for such extra work. In other words, payment shall be made for authorized Permanent Works only. Unless otherwise specified measurements shall be taken as per the provisions of I.S. code 1200.

1.2 TOLERANCE:

Tolerance only for the purpose of calculating quantities shall be as under. Linear dimensions shall be measured correct to the 0.01 m. Area shall be worked out correct to the 0.01 Sq.m. volume (Cubic contents) shall be worked out correct to the 0.01 cubic meter and weight shall be worked out correct to 0.001 Tone or 1 Kg. as applicable, and thickness to 1.0 mm unless otherwise specified.

1.3 TRANSPORT:

The shortest practicable route as approved by Engineer in charge shall measure distance.

1.4 FULL PROVISIONS:

The rates/percentage inserted by Contractor/tendered against various items / amount of work detailed in various parts of schedule shall be deemed to include every allowance necessary, without extra measurement or charge for meeting the requirement of various components/parts of the contract documents viz. Particular Specifications. Standard Specifications of Goa P.W.D. item wise specifications, Additional Special Conditions and Mandatory Instructions, Preambles and Notes to Schedule Items, description of Schedule items, which shall all be read together, and any or all of the following unless specifically provided for to the contrary.

a. Compliance with all the conditions of contract including General Conditions of Contract., Schedule of Quantities, Particular Specifications, drawings including notes thereon, Specifications in Standard Specifications and other Specification in this Contract of Goa P.W.D., Relevant Indian Standard Specifications, and other Specification in this Contract. All India Standard Schedule of Rates 1986 "Standard Specifications" of Govt. of India as and where applicable.

b. All labour, materials, tools and plant, equipment and transport (which may be) required in preparation for and in the full and entire execution and completion of the Works, including waste in materials, carriage and cartage, carrying in, all leads and lifts. Hoisting, seating, fitting and fixing in position.

c. Local Conditions: Nature of Works, local facilities for supply of labour and materials, accessibilities to site, and all other matters affecting the execution and completion of the Works.

d. Duties etc. : Payment of any Octroi, Terminal Tax, Turnover Tax, Toll Tax, Contract Sales Tax, Ground Rent, Environmental Cess or any other duties and levies on materials obtained for the Works and any duties in respect of patent rights including Works contract sales tax etc.

e. Supervision: Competent supervision of the Works.

f. Labour: Reasonable terms and conditions of employment liabilities to pay compensation, pay wages in accordance with payment of wages Act wages as per statutory enactments, temporary accommodation, sanitation etc. compliance with Contract Labour Act.

g. Water and Power: Provision of all water and power required including temporary plumbing and electrical connections.

h. Temporary workshops, stores, office, labour camps foundation for crane etc.: Provision of such structures as required for efficient execution of the work, removing and cleaning up site on completion of work.

i. Precautions against risk: Precautions to prevent loss or damage from all or any risks, insurance of sheds or any temporary accommodation provided by Client, watching and lighting and provisions pertaining to these in General Conditions of Contract.

j. Notices, Fees etc.: Compliance with statutory provisions of regulations and/or byelaws of any local authority and/or any public service company or authority affected by the Works.

k. Setting out the Works including all apparatus required.

l. Site Drainage: Removal at no extra cost of all water that may accumulate due to springs, sub-soil water, rains, flood/tides and any other causes on the site during the progress of the Works or in trenches and excavations.

m. Execution of work in a workman like manner including providing facilities for inspection etc.

n. Rectification of bad work: Rectification or removal and reconstruction of any work which (as decided by the engineer) has been executed with unsound or imperfect material or unskilled or unsatisfactory workmanship or a quality inferior to that contracted for, whether during construction or prior to the expiry of the maintenance period.

o. Responsibility for damages and loss of all construction materials etc. at the site until handed over to Client.

p. Removal of Rubbish: Removal of rubbish and debris and cleaning of any dirt before handing it to Client.

q. Cleaning site and Works: Removal by the contractor, off the site any temporary structure any tools, plant and materials and sweeping, washing, cleaning joinery, removal of splashes of paint and lime wash and leaving the whole structure neat and tidy.

r. Completion: Completion of the Works to the satisfaction of the Engineer on or before the stipulated date of completion.

s. Difficult Positions: Accessibility or otherwise to site, easy or difficult positions in work. Co-ordination with CLIENT/ PWD/Any other statutory body for obtaining permission for diversion of traffic or any other facilities during execution of this project.

t. Errors: Rectification of all errors to the satisfaction of the Engineer (e.g. when excavation is carried out deeper than ordered or required level shall be made up with concrete as specified for the foundation at no extra cost.

u. Maker's instructions: Compliance with maker's instructions in the case of proprietary articles.

v. Curved work etc.: Work of any quantity, size or shape, whether level, inclined, curved, battered etc.

w. Waste: All wastes, laps, seams, joints (rough or fair cutting) cutting, straight / raking, circular and making good.

x. Artificial Lights: To include for all lighting, kerosene or electric power as the case may be, when need arises for use of lighting out Works.

y. Tests: Carrying out all tests at field laboratory and or any other laboratory approved by Engineer as per relevant Indian Standards in required frequencies.

GENERAL SPECIFICATIONS

1.0 These specifications shall be read in conjunction with the Particular Specifications for various items of work. The Contractor shall carefully acquaint himself with the general specifications, coordinate the same with any other specifications forming a part of the Contract Document and determine his contractual obligations for the execution of various items of work in accordance with good engineering practices.

2.0 REFERENCE TO THE STANDARD CODES OF PRACTICE:

2.1 All standards, tentative specifications, specifications, code of practice referred to shall be the latest editions including all applicable official amendments and revisions. The contractor shall make available at site all relevant Indian Standard Codes of Practice as applicable.

2.2 In case of discrepancy between standards, codes of practice, tentative specifications, specifications referred to, these specification, shall govern.

3.0 CONTRACTOR TO PROVIDE:

The Contractor shall provide and maintain at site throughout the period of Works the following at his own cost and without extra charge, the cost being held to be included in the Contract Rates.

3.1 All labour, materials, plant, equipment and temporary Works required to complete and maintain the Works to the satisfaction of the Engineer.

3.2 Lighting for night work, and also whenever and wherever required by the Engineer.

3.3 Temporary fences, guards, lights and protective work necessary for protection of workmen, supervisors, engineers or any other persons permitted access to the site.

3.4 All equipment, instruments and labour required by the Engineer for measurement of the Works.

3.5 The contractor shall provide all necessary equipments to test the approved materials which are to be incorporated into the works. All the pegs for setting out the works and fixing the levels required for the execution thereof shall be as desired by Engineer-in-charge, be built in masonry at such places and in such a manner as the Engineer-in-charge may direct. The contractor shall carefully protect and preserve all bench marks and other marks used in setting out the works.

3.6 SWING TYPE WEIGH BATCHESS:

Contractor shall also provide platform swing type weigh batches of approved make (as per I.S. 2722 portable swing type).

3.7 Any layout of equipment not specifically mentioned above which can reasonably be held necessary for the completion and maintenance of the Works to the satisfaction of the Engineer.

4.0 DIMENSIONS:

4.1 Written dimensions on drawings shall supersede measurement by scale and drawings to a large scale shall take precedence over those to a smaller scale. Special dimensions or directions in the specifications shall supersede all others. All dimensions shall be checked on site prior to execution.

4.2 The dimensions where stated do not allow for waste, laps, joints, etc. but the Contractor shall provide at his own cost sufficient labour and materials to cover such waste, laps, joints, etc. and the rate quoted is inclusive of such provision and no separate payment will be made for the same.

4.3 The levels, measurements and other information concerning the existing site as shown on the drawings are believed to be correct, but the Contractor should verify them for himself and also examine the nature of the ground as no claim or allowance whatsoever will be entertained on account of any errors or omissions in the levels or the description of the ground levels or strata turning out different from what was expected or shown on the drawings.

5.0 SETTING OUT OF WORKS:

The Contractor shall set out the Works indicated in the Conditions of Contract.

The Contractor shall provide suitable stones with flat tops and build the same in concrete for temporary bench marks. All the pegs for setting out of the Works and fixing the levels required for the execution thereof shall, if desired by the Engineer, be built in masonry at such places and in such a manner as the Engineer may direct. The Contractor shall carefully protect and preserve all bench marks and other marks used in setting out the Works.

6.0 MATERIALS:

6.1 QUALITY:

All materials used in the Works shall be of the best quality of their respective kinds as specified herein, obtained from sources and suppliers approved by the Engineer and shall comply strictly with the tests prescribed hereafter, or where tests are not laid own in the specifications, with the requirements of the latest issues of the relevant Indian Standards.

6.2 SAMPLING AND TESTING:

All materials used in the Works shall be subjected to inspection and tests in addition to test certificates. Samples of all materials proposed to be employed in permanent Works shall be submitted to the Engineer for approval before they are brought to the site.

Samples provided to the Engineer for their retention are to be labeled in boxes suitable for storage. Materials or workmanship not corresponding in character and quality with approved samples will be rejected by the Engineer.

Samples required for approval and testing must be supplied sufficiently in advance to allow for testing and approval, due allowance being made for the fact that if the first samples are rejected further samples may be required. Delay to the Works arising from the late submission of samples will not be acceptable as a reason for delay in completion of the Works.

Materials shall be tested before leaving the manufacturer's premises, quarry or source, wherever possible. Materials shall also be tested on the site and they may be rejected if not found suitable or in accordance with the specifications, notwithstanding the results of the tests at the manufacturer's Works or elsewhere or test certificates or any approval given earlier.

The contractor will bear all expenses for sampling and testing, whether at the manufacturer's premises at source, at site or at any testing laboratory or institution as directed by the Engineer. No extra payment shall be made on this account.

6.3 DISPATCH OF MATERIALS:

Materials shall not be dispatched from the manufacturer's Works to the site without written authority from the Engineer.

6.4 TEST CERTIFICATES:

All manufacturer's certificates of test, proof sheets, etc. showing that the materials have been tested in accordance with the requirement of this specifications and of the appropriate Indian Standard are to be supplied free of charge on request to the Engineer.

6.5 REJECTION:

Any materials that have not been found to conform to the specifications will be rejected forthwith and shall be removed from the site by the Contractor at his own cost.

6.6 The Engineer shall have power to cause the Contractors to purchase and use such materials from any particular source, as may in his opinion be necessary for the proper execution of the work.

7.0 STORING OF MATERIALS AT SITE:

All materials used in the Works shall be stored on racks, supports, in bins, under cover etc. as appropriate to prevent deterioration or damage from any cause whatsoever to the entire satisfaction of the Engineer. The storage of materials shall be in accordance with IS 4082 "Recommendation on stacking and storage of construction materials on site" and as per IS 7969 "Safety code for handling and storage of building materials".

The materials shall be stored in a proper manner at places at site approved by the Engineer. Should the place where material is stored by the Contractor be required by the Employer for any other purpose, the Contractor shall forthwith remove the material from that place at his own cost and clear the place for the use of the Employer.

8.0 WATER:

8.1 Water for Construction:

Clean fresh water only shall be used for the Works. The water shall be free from any deleterious matter in solution or in suspension. The quality of water shall conform to IS 465.

8.2 Storage:
The Contractor shall make his own arrangements for storing water, if necessary, in drums or tanks or cisterns, to the approval of the Engineer. Care shall be exercised to see that water is not contaminated in any way.

9.0 WORKMANSHIP:

9.1 All Works shall be true to level, plumb and square and the corners, edges and corners in all cases shall be unbroken and neat.

9.2 Any work not to the satisfaction of the Engineer or his representative will be rejected and the same shall be rectified, or removed and replaced with work of the required workmanship at no extra cost.

10.0 LOADING TESTS:

10.1 The Engineer shall during the progress of the Works or during the period of maintenance, instruct the Contractor that a loading test or any other non-destructive test such as ultrasonic test or smith Hammer Test be made on the Works or any part thereof if, in his opinion such a test or tests be deemed necessary for one or more of the reasons herein below specified.

10.1.1 The site made concrete test cubes failing to attain the specified strength.

10.1.2 The shuttering for concrete Works being prematurely removed.

10.1.3 Overloading during construction of the Works or part thereof;

10.1.4 Concrete improperly cured;

10.1.5 If any portion of the work is carried out without prior approval in writing of the Engineer or his representative to proceed with such work;

10.1.6 If concrete is honeycombed or damaged or in the opinion of the Engineer particularly weak in important or critical areas of the structure where weakened concrete will affect the ability of the structure to carry design loads;

10.1.7 Any other circumstances attributed to alleged negligence on the part of the Contractor which, in the opinion of the Engineer, results in the Works or any part thereof being of less than the expected strength;

10.1.8 Any reason other than the foregoing.

10.2 The tests shall be made at the Contractor's own cost whether the results of such tests be satisfactory or otherwise.

10.3 All the loading tests and other tests like N. D. Test will be carried out strictly in accordance with the instructions of the Engineer. Load testing will generally follow the procedure set out in Indian Standard Codes of Practice, but the Engineer is not bound to follow the Indian Standard Codes of Practice and in his absolute discretion may issue instructions differing from the procedure set out in the Indian Standard Codes of Practice.

10.4 If in the opinion of the Engineer the result of the loading tests and other tests like N.D. Tests is not satisfactory, the Engineer shall instruct that such parts of the Works as he specifies shall be taken down or cut out and reconstructed to comply with the specifications, or other remedial measures shall be taken to make Works secure to the satisfaction of the Engineer. The Contractor shall take down, or cut out and reconstruct the defective work or shall take the remedial measures instructed at his own cost.

SECTION B : SANITARY FIXTURES & C.P. FITTINGS.

1. Vitreous China Sanitaryware.

All glazed Vitreous China Sanitaryware fixtures shall conform to Indian Standard IS:2556. The details, make and type to be provided are given in the Schedule of Quantities. The Vitreous China Sanitaryware shall be of first quality only. They shall be non-porous and fully vitreous, with all the visible portions perfectly glazed and should be absolutely free from hairline cracks, pin-holes and local depressions. it shall be perfectly symmetrical, uniform and smooth on curves. All sanitary fixtures and fittings shall be stored under covered roof and handled carefully to prevent any damage.

2. Chromium Plated Fittings.

All Chromium plated fittings shall be of brass, heavy chromium plated, of the make and design approved by the Engineer. The fittings shall be cast fittings of screw type, machined and threaded properly for fixing to the supply pipes.

The plating shall conform to Indian Standard IS:482 (Electroplated coating of nickel and chromium of copper and copper alloys).

The fittings shall be supplied complete with chromium plated matching flanges, wall cover plates, nuts and extension pieces of required lengths. Metallic washers where required shall also be of chromium plated brass. All bib cocks and stop cocks shall conform to Indian Standard IS:781. Brass screw down pillar taps to IS:1701 and all other accessories shall match the plated fittings in construction and appearance. All fixing accessories and screws shall be similar to fittings. All washers shall conform to Indian Standard IS:4346.

All waste fittings (Waste, Chain, Overflow, Spreaders, Caps etc.) shall be of brass heavy chromium plated of the make and design specified and match the plated fittings. They shall conform to Indian Standard IS:2963.

Bottle traps (for wash basins, sinks, urinals etc) shall be deep seal (Min. 6 cm seal) cast brass bottle traps, heavy chromium plated. All bottle traps shall be provided with suitable cleaning eye, extension piece, flare nuts, all chromium plated.

Wall flanges shall be provided on walls, floors columns etc. wherever supply and disposal pipes pierce through them. These wall caps shall be of chromium plated brass snugly fittings the receiving pipes and shall be large enough to cover the punctures properly.

3 INSTALLATION OF SANITARY FIXTURES AND FITTINGS.

3.1 General Requirement.

The fixtures and fittings shall be provided with all such accessories as are required to complete the item in satisfactory working conditions, whether specifically mentioned or not in the schedule of quantities, specifications and drawings. The sanitary fixtures and fittings shall be installed at the correct assigned position as shown on the drawings and as directed by the Engineer, and shall fully meet with the asthetic and symmetrical requirements as demanded by the Engineer.

All the fixtures and accessories shall be fixed in accordance with a set pattern matching the tiles or interior finish as per Architect's requirements. Wherever necessary, the fittings shall be centered to dimension and pattern as called for.

Fixtures shall be installed by skilled workman with appropriate tools according to the best trade practice. Manufacturer's instructions shall be followed for the installation of fixtures. Fixtures in all toilets shall be standard height mounting as called for on the drawings. Fixtures shall be mounted rigid, plumb, and true to alignment.

3.2 Mock up and Trial Assembly.

The installation of the Sanitary fixtures and fittings shall be as per the shop drawings approved by the Engineer.

The contractor shall have to assemble at least one set of each type of sanitary fixtures and fittings in order to determine precisely the required supply and disposal connections. Relevant instructions from manufacturers shall be followed as applicable. This trial assembly shall be developed to facilitate determining the location of puncture holes, holding

devices etc. which will be required for final installation in position of all sanitary fixtures and fittings. The above assembly shall be subject to final approved by the Engineer.
The fixtures in the trial assembly can be re-used for final installation without any additional payments for fixing or dismantling of the fixtures.

3.3 **Supporting and Fixing Devices.**

The Contractor shall provide all supporting and fixing devices necessary to install the sanitary fixtures and fittings securely in position. The fixing devices shall be rigidly anchored into the building structure. The devices shall be rust resistant and shall be so fixed that they do not present an unsightly look in the final assembly, where the location demands. The Engineer may instruct the contractor to provide chromium plated or other similarly finished fixing devices. In such circumstances the contractor shall arrange to supply the fixing devices and shall in stall complete with appropriate vibration isolating pads, washers and gaskets.

3.4 **Final Installation.**

The Contractor shall install all sanitary fixtures and fittings in their final position in accordance with approved trial assemblies and as shown on drawings. The installation shall be complete with all supply and waste connections. the connection between building and piping system and the sanitary fixtures shall be through proper unions and flanges to facilitate removal/replacement of sanitary fixtures without disturbing the built in piping system. All unions and flanges shall match in appearance with other exposed fittings.

Fixtures shall be mounted rigid, plumb and to alignment. The outlets of water closet pans and similar appliances shall be examined to ensure that outlet ends are butting on the receiving pipes before making the joints. It shall be ensured that the receiving pipes are clear of obstruction. When fixtures are being mounted, attention shall be paid to the possibility of movement and settlement by other causes. overflows shall be made to ensure that necessary anchoring devices have been provided for supporting water closets, washbasins sink and other appliances.

4. PROTECTION AGAINST DAMAGE.

The Contractor shall take every precaution to protect all sanitary fixtures against damage, misuse, crazing, staining,scratening, breakage and pilferage by providing proper wrapping and locking arrangement till the completion and handing over. At the time of handing over, the contractor shall clean, disinfect and polish all fixtures and fittings. Any fixtures and fittings found damaged, cracked, chipped, stained or scratched shall be removed and new fixtures and fittings free from defects shall be installed at his own cost to complete the work.

SECTION – C: WATER SUPPLY

1. PIPING MATERIAL.

1.1 **Galvanized Iron Pipes**

The pipes shall be galvanised mild steel welded (ERW) or (HFW) screwed and socketed conforming to the requirements of IS: 1239. the Galvanising shall conform to IS:4736, the zinc coating shall be uniform, adherant reasonably smooth and free from such imperfections as flux, ash and drops, intrusions, bare patches, black spots, pimples, lumpiness, runs, rust strains, bulky white deposits and blisters. The pipes and sockets shall be cleanly finished, well galvanised in and out and free from cracks, surface flaws, laminations and other defects. All screw threads shall be clean and well cut. The ends shall be cut cleanly, and square with the axis of the pipe.

The fittings shall be malleable iron and comply with all the requirements that of pipes. The sizes of pipes and fittings are as specified in the schedule of quantities.

1.2 Valves & Controls.

All valves (gate, globe, check, safety) shall be of gun metal non rising spindle valves suitable for the particular service design & duty as called for. Valves shall either be of screwed type or flanged type, with suitable flanges and non-corrosive bolts and gaskets. Tail pieces as required shall be supplied alongwith valves. Gate, globe and check valves shall conform to Indian Standard IS: 778 and non-return valves to swing check type reflux to IS: 5312.
Sluice valves, where called for shall be flanged sluice valves of cast iron body. The spindle, valve seat and wedge nuts shall be of gunmetal. They shall generally have non-rising spindle and shall be of the particular dot, and design called from. The valves shall be supplied with suitable flanges non-corrosive bolts and asbestos fibre gaskets. Sluice valve shall conform to Indian Standard IS: 78 and IS: 2906.
Ball valves with floats to be fixed in storage tanks shall consist of cast brass lever arm having copper balls (26 SWG) screwed to the arm integrally. The copper ball shall have bronze welded seams. The closing/opening mechanism incorporating the position and cylinder shall be non-corrosive metal and include washers. The size and construction of ball valves and float shall be suitable for desired working pressure operating the supply system. Where called for brass valves shall be supplied with brass Hexagonal backnuts to secure them to the tanks and a socket to connect to supply pipe.

	Type of valve	Size	Contraction	Ends.
a.	G.M. Valve	15mm to 50mm	Gun Metal	Screwed.
		50mm and above	Gun Metal	Flanged.
b.	Sluice valve & butterfly valve.	65mm and above	Cast iron/steel	Flanged.
c.	G.M. Non return valve.	15mm to 50mm	Gun Metal	Flanged.
		50mm and above.	Gun Metal	Flanged.
d.	Flap type Non return above.	65mm and above.	Cast iron	Flanged.

1.3 **Ferrules.**
The ferrules for connection with C.I. main shall generally conform to IS: 2692. it shall be of non-ferrous materials with a C.I. ball mouth cover and shall be of nominal bore as specified. The ferrule shall be fitted with screws and plug or valve capable of completely shutting of the water supply to the communication pipe, if and when required.

1.4 **Water Meters.**
Water meters of approved make and design shall be supplied for installation at location as shown. The water meters shall meet with the approval of local supply authorities. Suitable valves and chambers or wall meter box to house the meters shall also be provided alongwith the meters.

The meters shall conform to Indian Standard IS: 779 and IS: 2373. Where called for the water meters shall be located in masonry chambers of appropriate size.

Provision shall also be made to lock the water meter. The provision shall be such that the lock is conveniently operated from the top. Where the provision is designed for use in conjunction with padlocks, the hole provided for padlocks shall be a diameter not less than 4mm.

3. **Laying and Jointing of G.I. Pipes**
All pipes and fittings shall be fixed truly vertical and horizontal unless unavoidable. The pipes shall be fixed to walls with standard slotted angles 'U' shape threaded bolts & nuts for clamping pipes to angles. Slotted angles shall be

grouted to R.C.C. work with fasteners of size so as to fit tightly on the pipes when tightened with screwed bolts. These slotted angles shall be spaced at regular intervals in straight lengths and heights.
The galvanised pipes and fittings shall run in wall chase or on ceiling or as specified. The fixing shall be done by means of standard pattern holder bat clamps keeping the pipes about 1:5 cm clear of the wall when to be laid on surface. Where it is specified to conceal the pipes, chasing may be adopted or pipes fixed in the shafts, ducts etc. provided there is a sufficient space to work on the pipes with the usual tools. As far as possible, pipes may be burried for short distances provided adequate protection is given against damage and where so required special care to be taken at joints. Where directed by the Architect. Pipe sleeves shall be fixed at a place where the pipe is passing through a wall or floor for reception of the pipe and allow freedom for expansion and contraction and other movements. In case pipe is embedded in walls or floors it should be painted with anticorrosive bitumastic paint of approved quality. Under the floors the pipes shall be laid in layer of sand filling.
Galvanised iron pipes shall be jointed with threaded and socket joints, using threaded fittings. Care shall be taken to remove any burr from the end of the pipes after threading. White lead or an equivalent jointing compound of proprietary make shall be used, according to the manufacturer's instructions, with alongwith a few strands of fine yarn while tightening, compounds containing red lead shall not be used because of the danger of contamination of water. Any threads exposed after jointing shall be painted with bituminous paint to prevent corrosion.

4. **Piping Installation**

Tender drawings indicate schematically the site and location of pipes. The Contractor, on the award of the work, shall prepare detailed working drawings, showing the cross-section, longitudinal sections, details of fittings, locations of isolating and control valves, drain and air valves and all pipe supports. He must keep in view the specific openings in building and other structure through which pipes are designed to pass.
Piping shall be properly supported on, or suspended from, on stands, clamps, hangers as specified and as required. The Contractor shall adequately design all the brackets, saddles, anchor, clamps and hangers, and be responsible for their structural sufficiency.
Piping supports shall be steel, adjustable for the height and primer coated with rust preventive paint and finish coated back. Where pipe and clamps are of dissimilar materials, spacing of the supports shall not exceed the following:

Pipe Size	Spacing between supports.
Upto 12 mm	1.5 meter
15mm to 25mm	2.0 meter
30mm to 50mm	2.0 meter
above 50mm	2.5 meter

Vertical risers shall be parallel to walls and column lines and shall be straight and plumb. Risers passing from floor to floor shall be supported at each floor by clamps or collars attached to pipe and with a 15mm thick rubber pad or any resilient material. Where pipes pass through the terrace floor, suitable flashing shall be provided to prevent water leakage. Risers shall have suitable clean out at the lowest point and air vent at the highest point.

Pipe sleeves, of 50mm larger diameter than pipes, shall be provided wherever pipes pass through walls and slabs, and annular space filled with Fiberglass and finished with retainer rings.

Insulated piping shall be supported in such a manner as not to put undue pressure on the insulation. 14 gauge sheet shall be provided between the insulation and the clamp, saddle or roller, extending at least 15cm. on both sides of the clamps saddles or roller.

All pipe work shall be carried out in a workmen like manner causing minimum distrurbance to the existing services, buildings, roads and structures. The entire piping work shall be organized in co-ordination with other agencie's work, so that complete work in the area shall be carried out in one stretch. Contractor shall make sure that the clamps,

brackets, saddles and hangers provided for pipe supports are adequate. Piping layout shall take due care for expansion and contraction in pipes and include expansion joints where required.

All pipes shall be accurately cut to the required sizes in accordance with relevant BIS codes and burrs removed before laying. Open ends of the piping shall be closed as the pipe is installed to avoid entrance of foreign matter. Where reducers are to be provided in horizontal runs, eccentric reduces shall be used for the piping to drain freely. In other locations, concentric reduces may be used.

Flanged inspection pieces 1.5 meters long, with bolted flanges on both ends, shall be provided no more than 30 meter centers future cleaning of all welded pipes.

All burried pipes for CWS shall be cleaned and coated with two coats of bitumen and then wrapped with two layers of 400 micron polythene sheet.

Air valves shall be provided at all high points in the piping system for venting. All valves shall be of 15mm pipe size and shall be associated with an equal size gate valves. There mostmatic air V/Vs shall be provided towards drain points.

Pressure gauges shall be provided at the suction and discharge of pumps as included in schedule of quantities. Care shall be taken to protect pressure gauges during pressure testing.

4.1 **Fixing Ferrules**

For fixing ferrule the empty main shall be drilled and tapped at 45% to the vertical and the ferrule screwed in. The ferrule must be so fitted that no portion of the shaft shall be left projecting within the main into which it is fitted.

4.2 **Cutting Chases in masonry Walls**

The chases upto 7.5 x 7.5cm shall be made in the walls for housing GI pipes etc. These shall be provided in correct positions as shown in the drawings or directed by the Architects. Chases shall be made by chiselling out the masonry to proper line and depth. After GI pipes etc. are fixed in chases, the chases shall be filled with cement mortar 1:4 or as may be specified made flush with the masonry surface.

4.3 **Water Fittings**

Unless otherwise specified all Gunmetal fittings such as gate, globe, check & safety valves shall be fitted in pipe line in workman like manner. Necessary unions shall be provided on both ends of the valves for easy replacement. The joints between fittings and pipes shall be leak-proof when tested to pressure. The defective fittings and joints shall be replaced or redone.

4.4 **Making Water Connection**

A pit of suitable dimension shall be dug at the point where the connection is to be made with ring main and earth removed upto 150mm below the main. The flow of water in main shall be disconnected by operating the nearest sluice valve on the main. The main shall be drilled and sloped at 45% to the vertical and the ferrule of required size shall be screwed in. The ferrule shall be fitted in a manner so that no portion of projection of the shank shall be left projecting within the main into which it is fitted. Ferrule shall be non-ferrous material with a C.I. bell mouth cover and shall be of nominal bore as required.

4.5. **Installation of Water Meter and Stop Cock**

The G.I. lines shall be cut to the required lengths at the position where the meter and stop cock are required to be fixed. Then end of the pipe shall be threaded. The meter and stop cock shall be fixed in a position by means of connecting pipes G.I. jam nut and socket etc. The stop cock shall be fixed near the inlet of the water meter. The paper disc inserted in the ripples of the meter shall be removed. And the meter installed exactly horizontal or vertical in the flow line in the direction shown by the arrow cast on the body of the meter. Care shall be taken that the factory seal

of the meter is not disturbed. Wherever the meter shall be fixed to a newly fitted pipe line, the pipe line shall have to be completely washed before fittings the meter.

4.6 **Connections to RCC Water Tanks**

The Contractor shall provide all inlets, outlets, washouts, vents, ball cocks, overflows control valves and all such other piping connections including level indicator to water storage tanks as called for. All pipes crossing through RCC work shall have puddle flanges fabricated from MS/GI pipes of required size and length and welded to 6mm thick MS plate. All puddle flanges must be fixed in true alignment and level to ensure further connection in proper order. Suitable float controls of approved make, securely fixed to the tank independent of the inlet pipe and set in a position that water inlet into the tank is cut off when filled upto the water line. The water level in the tanks shall be adjusted to 25mm below the lip of the overflow pipe. Fullway gate valves of approved make shall be provided as near the tank as practicable on every outlet pipe from the storage tank except the overflow pipe. Overflow and vent pipes shall terminate with mosquito proof coupling.

The overflow pipe shall be so placed to allow the discharge of water being readily seen. The overflow pipe shall be of size as indicated. A stop valve shall also be provided in the inlet water connection to the tank. The outlet pipes shall be fixed approximately 75mm above the bottom of the tank towards which the floor of the tank is sloping to enable the tank to be emptied for cleaning.

5. **Disinfection of Piping System and Storage Tanks.**

Before commissioning the water supply system, the contractor shall arrange to disinfect the entire system as described in the succeeding paragraph.

The water storage tanks and pipes shall first be filled with water and then thoroughly flushed out. The storage tanks shall then be filled with water again and disinfecting chemical containing chlorine added gradually while tanks are being filled to ensure thorough mixing. Sufficient chemical shall be used to give water a dose of 50 parts of chlorine to one million parts of water. If ordinary bleaching powder is used, the proportions will be 150gms of powder to 1000 liters of water. The powder shall be mixed with water in the storage tank. If a proprietary brand of chemical is used, the proportions shall be specified by the makers. When the storage tank is full, the supply shall be stopped and all the taps on the distributing pipes are opened successively working progressively away from the storage tank. Each tap shall be closed when the water discharged begins to smell chlorine. The storage tank shall then be filled up with water from supply pipe and added with more disinfecting chemical in the recommended proportions. The storage tank and pipe shall then remain charged at least for three hours. Finally the tank and pipes shall be thoroughly flushed out before any water is used for domestic purpose.

6 **Protection Against Corrosion.**

All embedded piping material and accessories shall be suitably protected against corrosion. All embedded GI pipes shall be wrapped throughout with 2 layers of 400 micron Polythene sheet with two coats of bitumen paint. Where G.I. pipes are laid under floors, trenches etc. shall be encased with 100mm thick fine sand all round.

7. **Shifting of Excavated Surplus Material.**

Contractor shall make his own arrangement to shift the surplus excavated material directed by Engineer.

8. **Testing.**

a. All water supply system shall be tested to hydrostatic test pressure of at least two and half line the maximum pressure but not less than 10 kg/sq.cm. for a period of not less than 24 hours. All leaks and defects in joints revealed during the testing shall be rectified and got approved at site.
b. Piping required subsequent to the above pressure test shall be tested in the same manner.
c. System may be tested in sections and such sections shall be entirely retested on completion.

SECTION – D : INTERNAL DRAINAGE (SOIL, WASTE & VENT PIPES)

1. Basic Piping System.

Soil, waste and vent pipes in shafts, ducts and in corrosion areas i.e. false ceiling etc. shall consist of cast iron pipes & fittings as called for in general. Where pipes are smaller than 50mm dia they shall be of medium class Galvanised MS.

The soil pipes shall be circular with a minimum diameter of 100mm Pipes shall be fixed by means of stout cast iron clamps in two sections, bolted together, built into the walls, wedged and neatly jointed as directed and approved by the Engineer. All bends, branches, swan necks and other parts shall conform to the requirement and standards as described for the pipes.

Where indicated, the soil pipes shall be continued upwards without any diminution in its diameter, without any bend or angle to the height shown in the drawings. Joints throughout shall be made with molten lead as described under jointing of cast iron pipes. Soil pipes shall be painted as provided under painting. The soil pipes shall be covered on top with cast iron terminal outlets as directed and as approved. All vertical soil pipes shall be firmly fixed to the walls with properly fixed clamps, and shall as far as possible be kept 50mm clear of wall. Waste pipes and fittings shall be of cast iron or galvanized mild steel pipes. Pipes shall be fixed jointed and painted as described in installation of soil, waste & vent pipes.

Every waste pipe shall discharge above the grating of properly trapped gully. The contractor will ensure that this requirement is adequately met with. Wherever floor traps are provided, it shall be ensured that at least one wash is connected to such floor traps to avoid drying of water seal in the trap. Ventilating pipes shall be of cast iron or galvanized mild steel pipes, conforming to the requirements laid down earlier. Anti-syphon vent pipes/relief vent pipes where called for on the drawings shall be of cast iron or galvanised mild steel pipes as specified. The pipes shall be of the diameter shown on the drawings.

All traps on branch soil and waste pipes shall also be ventilated at a point not less than 75mm or more than 300mm from their highest part and on the side nearest to the soil pipe or waste pipe.

All connections, between soil, water and ventilation pipes and branch pipes shall be made by using pipe fittings with inspection doors for cleaning. The doors shall be provided with 3mm thick rubber insertion packing and when closed and bolted shall be air and water tight.

Where soil, waste and ventilating pipes are accommodated in shafts ducts, adequate access to cleaning eyes shall be provided,

2. Piping Materials

2.1 Cast Iron Pipes.

Cast iron pipes and fittings shall be of good tough quality, dark grey on fracture. The pipes and fittings shall be true to shape smooth and cylindrical, their inner and outer surface being as nearly as practicable concentric. They shall be sound and nicely cast, shall be free from cracks, taps, pinholes and other manufacturing defects.

The pipes and fittings shall conform to IS:1729 or IS:3989 as called for. All fittings shall conform to IS:1729 or IS:3989. Fittings shall be of required degree with or without access door. All access doors shall be made up with 3mm thick insertion rubber gasket, white lead, and tightly bolted to make the fittings air and water tight. The fittings shall be of the same manufacture of the pipes used for soil and waste.
All HCI pipes and fittings shall bear the manufacturer's name and ISI specification to which is conforms.

All pipes and fittings shall be coated internally and externally with the same material at the factory, the fittings being preheated prior to total immersion in a bath containing a uniformly heated composition having a tar/other suitable base. the coating material shall have good adherence and shall not scale off. The coating shall be smooth and tenacious and hard enough not to flow when exposed to a temperature of 77 degree C but not so brittle at a temperature of 'O' degree C as to chip off when scrubbed lightly with a pen knife.

All pipes and fittings before installation at site shall be tested hydrostatically to a pressure of 4.0 Kg/sq.cm without showing any sign of leakage, sweating or other defects of any kind. The pressure shall be applied internally and shall be maintained for not less than 15 seconds. All these tests shall be carried out in the presence of the representative of the Engineer. Alternatively a test certificate from manufacturers be obtained before despatch of material to site.

All cast iron watermain pipes, and fittings shall be manufacturered to IS: 1536 of tested quality. The pipes and fittings shall either be spigot and socket type or as called for. The pipes and fittings shall be of uniform material throughout and shall be free from all manufacturing defects.

2.2 **Cast Iron Specialities.**

Cast iron speciality item such as deep seal floor traps, urinal traps, trap integral pieces with integral inlet/outlet connections, manhole cover with frame, chamber cover etc. shall be fabricated to suit individual location requirements. The contractor shall arrange the fabrication of these items from an approve source. All traps shall be minimum 6cm deep seal shall be supplied with cast iron caps and collars capable of receiving screwed grating.

2.3 **Galvanised Iron Pipes.**

Waste pipes below 50mm dia and where called for shall be galvanised iron pipes screwed and socketted conforming to the requirements of IS:1239 of medium grade. The pipes and sockets shall be cleanly finished, well galvanised in and out and free from cracks, surface flaws laminations and other defects. All screw threads shall be clean and well cut. All pipes and fittings shall bear manufacturer's trade mark and conform to the IS as specified.

3. **Installation of Soil, Waste & Vent Pipes.**

Soil, waste & vent pipes in shafts, under the floors shall consist of cast iron pipes as described earlier. Waste pipes from bottle traps to floor/urinal traps. For wash basin, urinal and sink medium class GI pipes and fittings shall be used.

All Horizontal pipes running below the slab and along the ceiling, shall be fixed on structural adjustable clamps, of sturdy design. The pipes shall be laid in uniform slope and proper levels. All vertical pipes shall be truly vertical fixed by means of stout clamps in two sections, bolted together, built into the walls, wedged and neatly jointed. The branch pipes shall be connected to the stack at the same angle as that of fittings. All connections between soil, waste and ventilating pipes and branch pipes shall be made by using pipe fittings with inspection doors for cleaning. Pipes shall be fixed in a manner as to provide easy accessibility for repair and maintenance and shall not cause obstruction in shafts. All cast iron pipes and fittings shall be jointed with soft pig lead of 99% purity and free from all impurities.

Before joining, the interior of the socket and exterior of the spigots shall be thoroughly cleaned and dried. The spigot end shall be inserted into the socket right upto the back of the socket and carefully centered by two or three laps of threated spun yarn, twisted into ropes of uniform thickness, well caulked into the back of the socket. No piece of yarn shall be shorter than the circumference of the pipe. The jointed pipe line shall be at required level, and alignment. The reminder of the socket is left for lead caulking. Where the gasket has been tightly home, a jointing ring shall be placed round the barrel against the face of the socket. Molten pig lead shall be poured to fill the reminder of the socket in one pouring. the lead shall then be solidly caulked with suitable tools by hammering right round the joints to make up for the srinkage of the molten metal on cooling and preferably finished 3mm behind the socket face. the depth of the lead joints for the cast iron pipes shall be 45mm for the pipes upto 100mm dia and 50mm for the pipes beyond 100mm dia respectively. Twenty percent variations shall be permissible in accordance with IS:3114.

The joint shall not be covered till the pipe line has been tested under pressure. Rest of pipe line shall be covered so as to prevent the expansion and contraction due to variation in temperature.

4. **Inspection and Testing.**

Before the appliances are connected all opening pipes shall be inspected and tested. All opening of pipes shall be sealed with plugs. Water test in small sections of pipes shall be carried out to a static head of 4.5 meters.

The contractor shall give a smoke test to the drains and sewers at his own expense and charges as directed by the Engineer.

After installation of all the appliances, discharge test shall be conducted singly and collectively. Obstruction in any of the pipe lines shall be traced and whole system examined for hydraulic performance, including the retention of adequate water seal in each trap. Any defect revealed by the tests shall be made good and the tests repeated until a satisfactory result is obtained.

5. **Pipe Protection.**

Where pipes are embedded in floor, slabs, columns, beams etc. they shall be given protection by encasing them with 100m thick cement concrete all round the pipes and fittings as specified in BOQ.

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SECTION – E
EXTERNAL DRAINAGE & SEWAGE DISPOSAL.

1. GENERAL SCHEME.

The contractor shall install drainage system to effectively collect, drain and dispose all soil and waste water from the various parts of buildings, The piping system shall finally terminate and discharge into the sewage treatment plant. If provided at site. The piping work mainly consists of laying of salt glazed stoneware pipes, reinforced cement concrete pipes and cast iron soil pipes as called for on the drawings. To be shown on drawings. All piping shall be installed at depth greater than 80 cm below finished ground level. The disposal system shall include construction of gully traps, manholes, intercepting chambers as indicated. The piping system shall be vented suitably at the starting point of all branch drains, main drains, the highest/lowest point of drain and at interval as shown. All venting arrangement shall be unobstructive and concealed. The work shall be executed strictly in accordance with IS:1742. The sewerage system shall be subject to smoke test for its soundness as directed by the Engineer. Wherever the sewerage pipes run above water supply lines, same shall be completely encased in cement concrete of M-20 grade all round with the prior approval of the Engineer.

2. PIPING MATERIAL

2.1 Stoneware Pipes.

Stoneware pipes shall be perfectly salt glazed, sound, free from cracks, deformities and imperfections in glazing. They shall be cylindrical, straight and of standard nominal diameter, length and depth of socket. They will be made of hard burnt stoneware of dark grey colour and thoroughly glazed and shall give a sharp clear note when struck with a light hammer. The pipe shall conform to the requirements of Indian Standards IS:651 and the sizes and make specified in the Schedule of to appear in BOQ Quantities.

2.2. S.W. Gully Trap.

Gully trap shall be stoneware conforming to IS:651. These shall be sound and free from visible defects such as fire cracks, or hair cracks. The glaze of the traps shall be free from crazing. They shall give a sharp clear note when struck with light hammer. There shall be no broken blisters. Each gully trap shall have one CI grating of square size corresponding to the dimensions of inlet of gully trap. It will also have a water tight CI cover with frame inside dimensions 300 x 300mm the cover weighing not less than 4.5 kg and the frame not less than 2.7kg. The grating cover and frame shall be of good casting and shall have truly square machined seating faces.

2.3 Cast Iron Pipes.

Cast iron pipes and fittings shall conform to IS:1729/3989 or IS:1536 as called for in the documents.

2.4 Cast Iron Manhole Cover and Frame.

The Cast Iron Manhole Cover and Frame shall conform to IS:1726 and of the grade and types to appear in BOQ specified in the schedule of quantities. The cover and frames shall be cleanly cast and they shall be free from air and sand holes and from cold shuts. They shall be neatly dressed and carefully trimmed. All castings shall be free from voids whether due to shrinkage, gas inclusion or other causes. Covers shall have raised checkered design on the top surface to provide an adequate non-slip grip.

The sizes of covers specified shall be taken as the clear internal dimensions of the frame.

The covers and frames shall be coated with a black bituminous composition. The coating shall be smooth and tenacious. It shall not flow when exposed to a temperature of 63 C and shall not mbe so brittle as to chip off at temperature of 0 C.

3. LAYING AND JOINTING OF PIPES.

3.1 General.

All the material shall be new and of best quality conforming to specifications and subject to the approval of the Engineer. Drainage lines shall be laid to the required gradients and profiles. All drainage work shall be done in accordance with the local municipal by-laws.

Contractor shall obtain necessary approval and permission for the drainage system from the municipal or any other competent authority. Location of all manholes, catch basins etc. shall be got confirmed by the Engineer before the actual execution of work at site. All work shall be executed as directed by the Engineer.

3.2 **Alignment and Grade.**

The sewer and storm water drainage pipes shall be carefully laid to levels and gradients shown in the plans and sections but subject to modifications as shall be ordered by the Engineer from time to time to meet the requirements of the works. Great care shall be taken to prevent sand soil consures etc. from entering the pipes. The pipes between two manholes shall be laid truly in straight lines without vertical or horizontal undulations. The body of the pipes shall, for its entire length, rest on an even bed of the trench and places shall be excavated to receive collor for the purpose of jointing. No deviations from the lines, depths of cuttings or gradients called for on the drawings shall be permitted without the written approval of the Engineer. All pipes shall be laid atleast 60cms below the finished ground level or as called for on should be shown on drgs.

3.3 **Setting out Trenches.**

The contractor shall set out all trenches, Manholes, chambers and such other works to true grades and alignments as called for. He shall provide the necessary instruments for setting out and verification of the same. All trenches shall be laid to true grade and ins straight lines and as shown on the drawings. The trenches shall be laid to proper levels by the assistance of boning rods and sight rails which shall be fixed at intervals not exceeding 10 meters or as directed by the Architect.

3.4 **Trench Excavation.**

The trenches for the pipes shall be excavated with bottoms formed to level and gradients as shown on the drawings or as directed by the Architect. In soft and filled in ground the Architect may require the trenches to be excavated to a greater depth then the shown on the drawings and to fill up such additional excavation with concrete (1:4:8) consolidated to bring the excavation to the required levels as shown on the drawings.

All excavation shall be properly protected where necessary by suitable timbering, piling and sheeting as approved by the Architect. All timbering and sheeting when withdrawn shall be done gradually to avoid falls. All cavities be adequately filled and consolidated. No blasting shall be allowed without prior approval in writing from the Architect. It shall be carried out under thorough and competent supervision, with the written permission of the appropriate authorities taking full precaution connected with the blasting operations, all excavated earth shall be kept clear of the trenches to a distance equal to 75 cms.

3.5 **Obstruction of Roads.**

The contractor shall not occupy or obstruct by his operation more than one half of the width of any road or street and sufficient space shall then be left for public and private transit. he shall remove the excavated maaterials and bring them back again when the trench is required to be refilled. The contractor shall obtain the consent of the Engineer in writing before closing any road to vehicular traffic and the footpaths must be clear at all times.

3.6 **Protection of Pipes etc.**

All pipes, water mains, cables etc. met in the course of excavation shall be carefully protected and supported. Care shall be taken not to disturb the cables, the removal of which shall be arranged by the contractor with the written consent from the Owner.

3.7 **Trench Back Filling.**

Refilling of the trenches shall not be commenced until the length of pipes therein has been tested and approved. All timbering which may be withdrawn safely shall be removed as filling proceeds. This should be included in BOQ it has heavy financial implications. Where the pipes are unprotected by concreted haunching selected fine material shall be carefully hand-packed around the lower half of the pipes so as to buttress them to the sides of the trench.

The refilling shall then be continued to 150mm over the top of the pipe using selected fine hand packed material, watered and rammed on both sides of the pipes with a wooden hammer. The process of filling and temping shall proceed evenly in layers not exceeding 150mm thickness, each layer being watered and consolidated so as to maintain an equal pressure on both sides of the pipe line. In gardens and fields the top soil and turf if any, shall be carefully replaced.

3.8. **Contractor to ensure Settlement and Damages.**

The contractor shall at his own costs and charges, make good promptly during the whole period for the works in hand, any settlement that may occur in the surface of roads, beams, footpaths, garden, open spaces etc. whether public or private, caused by his trenches or by his other excavations and he shall be liable for any accident caused thereby. He shall also, at his own expense and charges, repair and make good and damage done to building and other property. If in the opinion of the Engineer the Contractor he fails to make good such works with all practicable dispatch, then the Engineer shall be at his liberty to get the work done by other means and the expenses thereof shall be paid by the contractor or deducted from any money that may be or become due to him or recovered from him in any other manner according to the law of the land.

The contractor shall at his own costs and charges disposal of all surplus materials not required to be used on the works. As directed by the Engineer as each trench is refilled in the surplus soil shall be immediately removed, the surface properly restored and roadways and sides left clear.

3.9 **Removal of water from Sewer, trench etc.**

The contractor shall at all times during the progress of work keep the excavations free from water which shall be disposed by him in a manner as will neither cause injury to the public health nor to the public or private property not to the work completed or in progress nor to the surface of any road or streets, nor cause any interference with the use of the same by the public.

If any excavation is carried out at any point or points to a greater width than the specified cross section of the sewer then no extra payment shall be made to refilling and it compaction for the additional exeution, Cross sections of the sewers to be specified.

3.10 **Route Markers.**

Markers indicating the particulars service shall be provided along the routes of pipe trenches. Markers shall be of mild steel indicating the type of service installed and the direction of flow painted on it. the markers shall be set firmly in a concrete base and installed at all corner and turning points. Over straigth runs, market's shall be spaced at 50 meter centre generally.

3.11 **Laying and jointing of Cement Concrete Pipes.**

Cement concrete pipes shall be laid and jointed as described in IS:783.

After setting out the pipes, the collars shall be centered over the joints and spun yarn soaked in a neat cement wash shall be inserted in the groove at the end of the pipe and two adjoining pipes butted against each other. After setting out the pipes, the collar shall then be slipped over the joint, covering equally both the pipes. Spun yarn soaked in neat cement wash shall be passed round the pipes and inserted in the joint by means of caulking tools from the ends of

the collar. More skins of yarn shall be added and well rammed above. The object of the yarn is to centre the two ends of pipes within the collar and to prevent the cement mortar of the joints penetrating into the pipes.

Cement mortar with one part of cement and two parts of sand shall be slightly moistened (they must on no account be soft or sloppy) and shall be carefully inserted by hand into the joint and more cement mortar added until the space of the joint has been filled completely with tightly caulked mortar. The joint shall be finished off neatly outside the collar on both sides at an angle of 45 degree. Any surplus mortar projecting inside the joint is to be removed and to guard against any such projections sack or gunny bags shall be drawn past each joint after completion. Cement mortar joint shall be cured for seven days.

4. **FIXING OF S.W. GULLY TRAP.**

The excavation for gully trap shall be done true to dimensions and levels as indicated on plans or as directed by the Engineer. The gully traps shall be fixed on cement concrete foundation 65cm square and not less than 10cm thick. should appear in BOQ. The grade of the concrete will be M-10. The jointing of gully outlet to the branch drain shall be done similar to the jointing of S.W. Pipes describe earlier. After fixing and testing gully and branch drain, a brick work of specified class in cement mortar 1:5 from the top of the bed concrete upto ground level should appear in BOQ. The space between the chamber and trap shall be filled in with cement concrete of M-10 grade. The upper portion of the chamber i.e. above the top level of the trap shall be plastered inside with cement mortar 1:3 finished with a floating coat of neat cement. The corners and bottom of the chamber shall be rounded off so as to slope towards the grating.

CI cover with frame 300 x 300mm (inside) shall then be fixed on the top of the brick masonry with cement concrete M-15 grade and rendered smooth. The finished top of cover shall be so as to exclude the surface water from entering the gully trap.

5 5. **CONSTRUCTION OF MANHOLE.**

Where manholes are to be constructed, the excavation, filling back and ramming, disposal of surplus earth, preparation of bottom and sides etc. shall be carried out as described earlier under trench excavation. Manholes shall be of sizes and depths as called for in the drawings and Schedule of Quantities should appear in BOQ. The manhole shall be built on a base concrete of grade M-10 of 150mm thickness for manholes upto 1500mm depth and 250mm thickness for manholes from 1500 to 2500mm depth and 300mm thickness for manholes of depth greater than 2500m. Reinforcement as shown shall be provided in the base slabs. The walls shall be of brick work of thickness as shown in drawings built in cement mortar 1:5. the joints of brick work shall be raked and plastered internally and externally with cement plaster 1:3 to a thickness of 20mm and finished with a coat of neat cement. In the bottom of the manholes, semi circular channels of the same diameter as the pipes shall be provided with neat smooth finish of cement plaster 1:3.

Above the horizontal diameter the sides of channel shall be extended vertically to the same level as the crown of the outgoing pipe and the top edge shall be suitably rounded off. The branch channels shall also be similarly constructed with respect to the benching but at their junction with the main channel an appropriate fall suitably rounded of in the direction of flow in the main channel shall be given. Rungs of cast or mild steel of suitable dimensions shall be provided in all manholes over 800mm depth. These rungs shall be set at 30cms interval in two vertical runs at 300mm apart horizontally. The top rung shall be 450mm below the manhole cover. Unless otherwise mentioned, manholes shall be constructed to requirements of Indian Standard IS:4111 (Part I). All manholes shall be constructed so as to be water tight under test. All angles shall be rounded to a 75mm radius with cement plaster 20mm thick. The benching at the side shall be carried out in such manner as to provide no lodgment for any splashing in case of accidental flooding. Manhole cover with frame shall be cast iron of an approved make. The covers and frame shall generally be double seal as specified in the Schedule of Quantities.

6. **DROP CONNECTION.**

Drop connection of required size shall be provided between branch sewer and main sewer in the main sewer itself in steep ground when the difference in invert level of two exceeds 45cms . Drop connections from gully traps to main sewer shall be made inside the manholes and shall have HCI special types door bend on to top and heel rest bend at bottom connected by a HCI pipe. The pipe shall be supported by holder bat clamps at 180 cms intervals with atleast one clamp for each drop connection. All joints shall be lead caulked joints 25mm deep.

Drop connection from branch sewer to main sewer shall be made outside the manhole wall with HCL/CI class LA pipe connection, vertical pipe and bend at the bottoms. the top of the tee shall be finished upto the surface level and provided with a CI hinge type frame and cover 30cms x 30cms. Drop connection made from vertical stacks directly into manholes shall not be considered as drop connections. They shall be paid for under the relevant soil and waste pipes.

7. **MAKING CONNECTIONS.**

Contractor shall connect the new sewer line to the existing manhole by cutting the walls benching and restoring them to the original condition. A new channel shall be cut in the benching of the existing manhole for the new connection. Contractor shall remove all sewage and water if encountered in making the connection without additional cost.

8. **GREASE TRAP.**

a. SIZE OF GREASE TRAP.

The size given in Bill of Quantities and drawings shall be internal size of chamber. The work shall be done strictly as per standard drawing and following specifications.

b. BED CONCRETE.

Shall be in M-10 grade cement concrete 100mm thick.

c. BRICK WORK.

Brick-work shall be with best quality bricks in 1:6 CEMENT MORTAR,

d. Baffle walls shall be of R.C.C and of size as mentioned in schedule of quantities. brick partition constructed of best quality bricks in cement mortar 1:6 shall be provided for the entire height of chamber.

e. PLASTER.

Inside of the walls of chamber shall be plastered with 15mm thick cement plaster 1:3 and finished smooth with a floating coat of neat cement.

f. CHAMBER COVERS.

Covers shall be of size and duty as mentioned in Schedule of Quantities. Covers shall be of cast iron as per the details given in the drawing and shall be fixed on M.S. frame embedded in concrete.

g. C.I. steps shall be provided at two corners of the chamber.

h. All Cast Iron and M.S. items shall be given two coats of bitumastic paint.

9. **SHIFTING OF EXCAVATED SURPLUS MATERIAL.**

Contractor shall make his own arrangement to shift the surplus excavated material directed by Engineer.

10. **TESTING.**

All lengths of the sewer and drain shall be carefully tested for water tightness by means of water pressure maintained for not less than 30 minutes. Testing shall be carried out from manhole to manhole. All pipes shall be subject to a test pressure of 1.5 metre head of water. The test pressure will however, not exceed 6 metres head at any point. the pipes shall be plugged preferably with standard design plugs with rubber plugs on both sides, the upper end shall, however, be connected to a pipe for filling with water and getting the required head poured at one time.
The contractor shall give a smoke test to the drains and sewer lines at his own expenses and charges as directed by the Engineer.
Sewer lines shall be tested for a straightness by :

a. Inserting a smooth ball 12mm less than the internal diameter of the pipe. In the absence of obstruction such as yarn or mortar projecting at the joints the ball should roll down the invert of the pipe and emerge at the lower end.

b. Means of a mirror at one end and a lamp at the other end. If the pipe is straight the full circle of light will be seen otherwise obstructions or deviations will be apparent.

c. The Contractor shall give a smoke test to the drain and sewer at his own expense and charges, as directed by the Engineer.

d. A test register shall be maintained which shall be signed and dated by contractor, Engineer and representative of consultants.

TECHNICAL SPECIFICATIONS FOR PLUMBING DRAINAGE AND WATER SUPPLY WORKS

1.0 GENERAL

1.1 Completeness of Contract

1.1.1 Contractor shall be deemed to have carefully examined the specifications, general conditions and tender drawings etc. and to have been fully informed and have satisfied himself as to the nature and character of the work to be executed, site conditions and other relevant matters and details.

1.1.2 Contractor shall provide all terms whether specifically mentioned or not but which are usual or required to make a complete working system and to ensure safe and satisfactory operation. All apparatus, appliances, material or labour which may be necessary to complete the work in accordance with the intent or purpose of these specifications shall be considered to be in the scope of work of the contract and shall be furnished without extra charge, as if fully described and called for in these specifications. In case of doubt or doubts, the tenderer shall clearly point out his understanding of the specifications, before award of contract.

1.1.3 Contractor shall study the site conditions before tendering and shall satisfy himself before submitting his Tender as to the nature of the ground and subsoil, form and nature of the site, the hydrological, climatic and physical conditions at the site, the quantities and nature of work and materials necessary for the completion of the work and means of access to the site, the proneness of site to floods as also the highest flood levels, recorded, observe or found in the past, as also accommodation required by him, and, in general, shall himself obtain all necessary information as to the risks, contingencies, and other circumstances which may influence or affect his tender.

1.1.4 Unless otherwise agreed in writing, these specifications, drawings and general conditions etc. form the contract documents and all clauses and conditions specified by the contractor stands null and void.

1.2 References

1.2.1 References to standards, code, specifications, recommendations shall mean the latest edition of such publications adopted and published at date of invitation to submit proposals.

1.3 Drawings and Literature

1.3.1 Before proceeding with the work, the contractor shall submit general layout and working drawings for approval as are necessary to demonstrate fully that all parts of the materials to be furnished will conform to the specifications.

1.3.2 Within 30 days of the acceptance of the tender the contractor shall furnish three (3) prints of layout, assembly and erection drawings for approval. If any modifications are proposed by the owner / Consultant, six (6) further prints of the modified drawings shall be submitted. No modifications shall made in drawing after it has been approved by the Consultant/Owner without prior consent.

1.3.3 Approval by the owner/Consultant of the drawings shall not relieve the contractor of any part of his obligation to meet all the requirements of the Contract or of the correctness of his drawings. The contractor shall be responsible for and pay for all alterations of the works due to discrepancies or omissions in the drawings or other particulars supplied by him, whether such drawings have been approved or not.

1.3.4 After execution of works, contractor shall furnish a set of original tracings of as built drawings incorporating the modifications if any during execution.

1.4 Inspection and Testing at Contractor's premises

1.4.1 Owner or its authorised representative shall have full power to inspect drawings of any portion of the work or examine the materials and workmanship of the plant at contractor's works or at any places from which the material is obtained. Acceptance of any material shall in no way relieve the contractor of his responsibility for meeting the requirements of the specifications. The cost of any special tests and/or analysis not called for in this specification shall be borne by the owner in case the material proves satisfactory but shall have to be paid by the contractor in case the material or work is found defective or of inferior quality.

1.5 Material Availability

1.5.1 The successful contractor shall ensure that all materials are processed well in advance to avoid any delay in completion of the project. They will intimate in writing to the consultant in the daily report proforma.

1.5.2 In case of non availability of any particular material the contractor shall procure next best available material and install the same at no extra cost to the Owner after written approval of the Engineer – in – charge..

2.0 BASIS OF TENDERING

2.1 The tender shall be complete covering the entire work of plumbing & Sanitation system and ancillary services including all building system and outside utilities as shown in drawing and specified in the tender documents.

2.2 The contractor shall consult specification & drawings which give an idea on these system and seek clarifications from the Engineer – in – charge. Where ever found necessary before quoting and before executing the work.

3.0 DRAWING

3.1 The drawings accompanying these specifications are design drawings and generally are schematic. They do not show every off set, T's, cross, Y's, Junctions coupling/flanges etc. which are required for installation in the space provided. The contractor shall show the drawings, as closely as is practicable and install additional bends, elbows or junctions, etc of required type and size. where required to suit local site conditions, from actual site measurement taken, subject to approval and without additional cost of the Owner. The Engineer – in – charge. reserves the right to make any reasonable change in outlet location prior to roughing in. All connections and appurtenances, shown in the various diagrams, shall be included in the finished job.

3.2 It shall be the contractor's responsibility to coordinate with all others, for proper and adequate installation clearances.

4.0 ORDINANCE, CODE AND REGULATIONS

4.1 It shall be the contractor's responsibility to provide complete system, as indicated and as required by applicable code of practice / Local bye laws etc. All clarifications, which have to be cleared with appropriate authorities shall be carried out without additional cost, to owner. Unless otherwise approved, the product shall bear the mark of approval of I S, as required, by the governing bodies, code and ordinances and local authorities whose permission are required for occupation of the building on completion.

5.0 SHOP DRAWINGS

5.1 The contractor shall prepare and submit for approval, detailed shop drawings of all items, not detailed on the drawings, setting drawings, clearance drawings where required, for proper coordination and all changes to the drawings. It shall be the contractor's responsibility to see that all deviations from drawings and specifications, noted on the drawings and brought to the attention of the consultants, otherwise approval shall be automatically voided.

5.2 The Contractor shall prepare plumbing and water supply shop drawing coordinating with Electrical and HVAC layouts to avoid any conflict at the time of execution of work.

5.3 The Contractor shall prepare a shop drawing for sanitary ware, fixtures and fittings showing positions planned with reference to tile line, height & all other aspects for approval of Engineer – in – charge.

6.0 MEASUREMENT LINES AND LEVELS

6.1 Before proceeding of with the work check, dimension of the building site and establish lines and levels for the work specified.

6.2 All inverts, slopes and manholes elevations shall be established by instruments, working from an established datum point. Elevation markers and lines shall be provided for consultants' use, to determine that slopes and elevations are in accordance with the drawings and specifications and local bye laws.

6.3 Established grid and area lines shall be used for location of trenches in relation to building and boundaries. Trenches shall be carried out to the true alignment and to required levels. No refilling will be allowed for the purpose of making up the bed of trenches, but to make the same with lean concrete mix 1:4:8.

6.4 Use of sight rails, boning rods shall be adopted during the whole process of excavation and laying of the pipes.

6.5 Sight rails shall be fixed at suitable intervals which shall not exceed twenty metres before the excavation is begun. No extra charges will be paid for excess excavation.

6.6 Sufficient width shall be available in the trenches to allow a space of 300 mm. on the either side of the body of drain pipe to facilitate laying of the pipes and jointing.

6.7 When the trenches are in deep or bad ground, the sides of the trenches shall be supported with suitable timbering.

6.8 All pipes, water mains or gas mains, telephones and cables etc. met within the course of excavation, shall be carefully protected and supported without any extra charges.

7.0 STONEWARE PIPES, BENDS, JUNCTIONS, JOINTING AND TESTING.

7.1 All stoneware pipes, bends, junctions, gully traps, intercepting traps shall be salt glazed inside and outside and shall conform to the specifications of IS 651.

7.2 The pipes shall be 1st grade hard, sound, truly circular in cross Section, perfectly straight, free from all flaws and projections.

7.3 Before being laid, the pipes shall be thoroughly cleaned specially from the inside. Cracked or chipped pipes shall not be used on the work.

7.4 WORKMANSHIP

Tarred gasket or hemp yarn soaked in thick cement shall first be placed round spigot of each pipe and the spigot then be placed well home into the socket of the pipe previously laid. The pipe shall then be adjusted and fixed in the correct position and the gasket caulked tightly home so as to fill more than 1/4 of the total depth (13 mm. in depth) of the socket.

7.5 The remaining space in the socket shall then be tightly and completely filled with cement mortar comprised of one part of cement and one part of sand, and shall be neatly leveled off, outside the socket of the pipe at an angle of 45 . A wooden caulking tool shall be used for forcing the mortar home into the socket. The inside of each pipe shall then be carefully wiped with the mop or scraper, sufficiently long to pass two joints from the end of each pipe and any projecting or extra cement shall be removed to leave the inside of the pipe clean as the work proceeds. All the joints shall be kept moist by means of wet Hessian bags to protect them from the sun or wind. All pipes entering manholes shall be set in cement mortar to effect a complete water tight junction.

All around the pipe, there shall be a joint of cement mortar 13 mm. thick between it and the bricks. The end of all pipes shall be properly built in and neatly finished with cement mortar with the manhole/ancillary structure.

The approximate quantity of cement and spun yarn per joint shall conform to IS 4127.

7.6 After sufficient interval has been allowed for the joints to set and before filling the trench, the joints of the pipes and drains shall be proved water tight by filling the pipes with water in between two successive manholes to a level above the top of the highest pipe in the length to be tested, closing the ends of the sections and maintaining the water level for a period of one hour with a water head of 1500 mm. and water level dropping not more than 25 mm. during that hour.

7.7 All such testing shall be done wholly at the Contractors' expenses, inclusive of apparatus, provision of water, etc., and the rate covers all the above work.

7.8 The pipes shall be laid to the alignment and gradient shown on the plan. The maximum permissible slopes to the various diameters of pipes are as follows:

100 mm dia. pipe ... 1 in 40
150 mm dia. pipe ... 1 in 60
200 mm dia. pipe ... 1 in 80

230 mm dia. pipe ... 1 in 90

7.9 Where necessary, pipes shall be laid on a bed of plain cement concrete 1:3:6 and minimum 150 mm. thick, and shall be projected by providing haunching upto half the diameter of the pipes. The width of the concrete bed for various diameters shall be as follows:

100 mm. dia. pipe ... 380 mm. wide
150 mm. dia. pipe ... 450 mm. wide
200 mm. dia. pipe ... 600 mm. wide
230 mm. dia. pipe ... 700 mm. wide

7.10 BED CONCRETE FOR SEWER LINES

7.11 Where the pipes are laid on a soft soil, with the maximum water table level, lying at the invert level of the pipe, the pipe shall be bedded in concrete.

7.12 Haunching

Where the pipes have to be laid in a soft soil with maximum water table level above the invert level of pipe, but below the top of the barrel, the pipe sewers shall be haunched.

7.13 Encasing

The sewer pipes shall be completely encased or surrounded with concrete.

a) Where the maximum Water table level is likely to rise above the top of the barrel.

b) Where the sewers are to be laid adjacent to growing trees, to avoid damage or displacement to pipe joints or to the pipe likely to be caused by the roots of the trees.

c) Where the top (Overt) of the pipe is less than 1200 mm. under the road surface.

d) Wherever the intensity of loading on pipes are expected to exceed the normal limit of 1600 kg per metre length for stoneware.

8.0 CONCRETE PIPE DRAINS, LAYING, JOINTING AND TESTING

8.1 Cement concrete pipes, where called for on the drawings, shall be centrifugally spun reinforced cement concrete pipes of an approved manufacture. Pipes shall be true, perfectly sound, free from cracks, cylindrical, straight with a uniform bore throughout. Cracked or warped pipes with uneven texture shall not be used. These pipes shall conform to Indian Standard 458 NP2 Class.

8.2 The pipe shall be straight and free cracks.The end of the pipe shall be square to their longitudinal axis, so that when placed in a straight line in the trench, no opening ends in contact shall exceed 1/8" (3 mm.) from 6" (150mm.) including and upto 24" (600 mm) dia.

8.3 The outside and inside surface of the pipes shall be smooth dense, and hard, and shall not be coated with cement wash or other preparation. The pipes shall be free from local dents and bulges greater than 1/8" (3 mm.) in depth and extending over a length in any direction greater than twice the thickness of the barrel.

8.4 The pipes, before being laid, shall be brushed throughout to remove any soil or stone, that may have accumulated therein, the inside of the socket and outside of the project being carefully cleaned. For small pipes, they should be titled up to remove any accumulations.

8.5 The pipes shall then be carefully laid in position.

8.6 Concrete Pipe Shall be jointed as described in I.S. 783. After setting out the pipes, the collar shall be centered over the joint and filled in with tarred gaskin, till sufficient space is left on either side of the collar to receive the mortar (1:2 1 cement :2 washed coarse sand) and caulked by means of proper tools. All joints shall be finished at an angle of 45 to the longitudinal axis of the pipe on both sides of the collar. The joint shall be cured for at least 4 days with wet Hessian bags.

9.0 Cast iron pipes & fittings

C I L A to IS 1536 and 1538 for laying, jointing and testing and for application in water main- embedded in foundation or through building drain lines above false ceiling, or below slab in horizontal position.

9.1 C I Spun pipes as per IS 3989 and Sand cast pipes as per IS 1729 for laying, jointing and testing and for application in Soil Waste Vent and Roof drain system – Fixed vertically of hanging pipes below floor slab.

9.2 The fittings shall be medium type cast iron conforming to the latest I.S. Specification 1538.

9.3 The pipes shall be lowered into the trench by means of suitable pulley blocks, shear legs, chain, ropes, etc. After lowering the pipes they shall be arranged to coincide the centre line with the centre line of alignment. The pipes shall be laid in position Socket and of all pipes facing the direction of flow. (This shall also apply to double socketed specials as per IS).

9.4 Preparing the Joint

The interior of the sockets and exterior of the spigots shall be thoroughly cleaned and dried. The yarn shall be placed around the spigot of the pipe, and shall be of proper dimensions, to centre the spigot in the socket. Making up of required length by knotting of strands of yarn shall not be allowed. Required length of yarn strands shall be in one place. When a single yarning material is used it shall have an over lap at the top of not more than 50 mm. When more than a single strand is required for a joint, each strand shall be cut to sufficient length so that the ends will meet on opposite sides of the pipe and not on top or bottom. When the spigot is shoved home, the yarning material shall be driven tightly against the inside base or hub of the socket with suitable tools.

9.5 Leading

The leading of pipes shall be made by means of ropes covered with clay or by using special leading rings. Lead shall be heated to proper temperature in a melting pot kept in easy reach of the working area so that molten metal will not be chilled on being carried from the melting pot to the joint (Molten lead at proper pouring temperature when stirred shows a rapid change of colour). The lead used shall be pig lead with 99.8% purity and shall conform to latest I.S. specification.

Before pouring, all scum or dross which may appear on the surface of the lead during melting shall be skimmed off. Each joint shall be filled in one continuous poured or imperfectly filed joints shall be burnt out and repoured.

9.6.1 Precaution shall be taken for melting the lead as under :

i) The pot and the ladle in which lead shall be put shall be clean and dry.

ii) Sufficient quantity of lead shall be melted.

iii) Lead shall not be overheated.

9.6.2 The approximate depth of pig lead for each joint of Cast Iron pipes and fittings shall be as under with a tolerance of + 5% :

Dia of pipe	Depth of lead (Min)
80 mm. to 125 mm. dia.	45mm.
150 mm. to 250 mm. dia.	50mm.
300 mm to 450 mm dia.	55mm.
500 mm and 600 mm. dia.	60mm.

9.6.3 Quantity of lead and spun yarn for each joint in cast iron pipes and fittings shall be as under, unless otherwise indicated.

Nominal dia.	Lead required of pipe(in mm.)	Spun yarn per joint required per [in kg.] (Min)	Joint (in Kg) (Min)
80	1.8	0.10	
100	2.2	0.18	
125	2.6	0.20	
150	3.4	0.20	
200	5.0	0.30	

250	6.1	0.35
300	7.2	0.48
350	8.4	0.60
400	9.5	0.75
450	14.0	0.95
500	15.0	1.00
600	19.0	1.20

9.6.4 After the joints have been run, they must be thoroughly bulked until they are perfectly watertight. Caulking of joints will be done after a convenient length of pipe has been laid and leaded. The leading ring shall first be removed with a flat chisel and the joint caulked round three times with caulking tools of increasing thickness and hammer 2 to 2.5 Kg. weight. Lead joints shall not be covered till the pipe lines are tested under pressure, but the rest of the pipe lines many be covered to prevent expansion and contraction due to variation in temperature.

9.6.5 Lead wool joint

Wherever it is impracticable or dangerous to use cast molten lead, such as inverted joints or in wet drainages or under water where there is a need for cold application, joints may be made with caulking lead wool or lead yarn. Joints caulked with lead wool or lead yarn shall withstand greater displacement than cast lead joints.

9.6.6 i] Approximate weights and depths of lead wool required for each joint of various dia. of Cast Iron pipes and fittings shall be as given in the following table. Just sufficient quantity of spun yarn shall be put so as to give specified depth of lead wool. A allowance of five percent variation in the specified weights and depths shall be permissible.

Diameter of pipe in mm. [min]	Wt. of lead wool in kg required [min]	Depth of lead wool spun yarn in mm. [min]
80	0.80	19
100	0.90	19
125	1.25	20
150	1.60	23
200	2.05	23
250	2.95	25
300	3.50	25
350	4.65	29
400	5.70	31
450	6.70	32
500	8.30	33
600	10.00	35

9.6.6 ii] Jointing shall be made of with caulking lead wool or yarn inserted in strings of not less than 5mm. thick and the caulking shall be repeated with each turn of lead wool or yarn. The whole of the lead wool or yarn shall be compressed into a dense mass. When working with lead wool, it is very important to use caulking tools of appropriate thickness to fill the joint space to thoroughly consolidate the materials from the back to the front of the socket.

9.7 Jointing Flanged Pipe

The pipes and fittings shall be accurately aligned in the back. The jointing materials shall be inserted in between the flanges and the nuts shall be carefully tightened, in opposite pairs, until the joint ring is only just sufficiently compressed between the flanges to ensure water tightness of the joint under the desired water pressure.

The packing used should be rubber insertion cloth three-ply and of approved thickness. The packing should be of the full diameter of the flange with proper pipe hole and bolt hole neat and even at both the inner and outer edges. Where the flange is not fully faced, the packing may be of the dimension of the facing strip only. Its proper placing should be tested before another pipe is joined on.

9.8 The led joints shall be tested to a pressure of 150 1bs/sq. inch minimum [10.54 kg./sq.cm] or such head as otherwise specified after being caulked and should any leakage occur, the leaking joints shall be remade and section re-tested at contractor's expenses, until satisfactory results are established.

9.9 Water Pressure Mains

Shall conform to IS 1538 1967 Class LA as specified in the schedule. They shall be laid, jointed, and tested along with Cast Iron pipes as described in the specification for Cast Iron S/S pipes.

After each section of the pipe line has been completed it shall be tested for water tightness before being covered. This can be done by closing each end, by means of a valve or blank flange, or plug and fill the pipe with water. The pressure should then be raised by means of a small hand operated pump till it registers fifty percent more than the 150 p. s. i. [10.54kg./Sq. cm] and the test pressure should be ascertained by means of a reliable gauge. When the pipe is laid on any appreciable gradient, the test should be carried out at the lower end of the section with an air vent at outer end. Any leaking joint should be made good and the above test reapplied until no further leaks are apparent.

10.0 SOIL, WASTE, RAIN WATER, VENT AND ANTI SYPHONAGE PIPES & FITTINGS.

10.1 Material and Fixing

All soil, waste and anti syphonage pipes and fittings with in toilet areas or within plumbing shafts vertical run, shall be centrifugally cast iron socket and spigot conforming to IS 3989 or its subsequent revision. All cast iron pipes and fittings shall be of the best approved Indian make of soil variety and free from flaws, air bubbles, cracks, sand holes and other defects , truly cylindrical and in uniform thickness. They shall not be brittle but shall allow for heavy cutting, chipping and drilling, and shall not be less than the diameter, mentioned in the Drawing and shall be fixed against the wall or on M S brackets & `U' Bolts & painted with two coats of paint.

10.2 JOINTS

Jointing shall be carried out with molten lead. The spigot of the pipe must be forced well home into its socket and must be entered, so that the joint may be of even thickness all round. At least, one complete lap of clean white hemp spun yarn shall be drawn into the bottom of the socket without being forced through the joint into. As many laps as may be needed to leave the space of not less than 25 mm. for the lead shall than be poured into the joint and caulked tight. The joints shall then be run with molten lead in sufficient quantity so that after being caulked solid, the lead may project 3 mm. beyond the face of the socket against the outside of the spigot but must be flush with the outside edge of the socket.

10.3 Clean outs at the head of cast Iron horizontal pipes running under the floor shall be of cast Brass screwed in type. Floor and wall clean outs shall be of cast brass screwed type. The connection pieces shall be of G.I. threaded to suit the clean out with lead caulked joint.

10.4 Inspection chambers, gully traps, etc. , within the building shall be of `Patel Pattern' cast iron with bolts, nuts to close the cover, all to be fabricated as per actual requirement, if so specified.

10.5 Supports, pedestals and base for inspection chambers gully traps and pipes shall be in 1:3:6 cement concrete mix.

10.6 Pipe sleeves and inserts, etc., through RCC walls either external or internal shall be of G I. provided with M S water bar flange.

10.7 During installation openings of pipes shall be plugged with wood cut into required shape of gunny bags and to be maintained free from dirt.

10.8 G.I. waste pipes and fittings shall be of heavy class with G.I. unions, tail pieces, reducers and connections to be provided between joints to either lead or Cast Iron pipes.

10.9 The size of branch waste pipes for different fittings shall be as follows:

Wash Basin	32 mm. dia.
Urinal	40 mm. dia.
Sink	40 mm. dia.
Nahani Trap	80 mm. dia.
P Trap	80 / 100mm. dia.

Special Floor Trap 80 or 100 mm.as required with bolted aluminium grating in 25 x 25 M.S. angle.

10.10 W.C. pan connectors shall be to suit the requirements as per drawing, with 40 mm. Vent horn for connection to the anti syphonage pipe with pan connector of cast iron or lead.

10.11 Connection to the sewage or storm water collection sumps to be perfectly water tight and as specified.

10.12 Rainwater flashing shall be made as per details with cast Iron dome shape grating and extension piece .

10.13 All Roof drain pipes and fittings shall be soil pipe variety conforming to IS 3989 / IS- 1729. This shall apply to pipes outside building or within the building or separate shafts.

10.14 The floor traps for toilet blocks shall be cast iron deep seal with C.P. brass grating, bolted down design.

10.15 Bathroom C. P. grating shall be of bolted down design out of heavy cast brass with the chromium plating of the best approved standard.

10.16 Cast iron gratings shall be flat with perfect edge of the best quality procurable of the specified width and thickness and in the available lengths.

10.17 Spigot and socket. cast iron pipes shall be of heavy pattern for the portion below the floor and embedded and laid over 150 mm. cement concrete 1:4:8, the width of the concrete being :

80 mm. dia. ... 320 mm. wide
100 mm. dia. ... 400 mm. wide
150 mm. dia. ... 450 mm. wide
200 mm. dia. ... 600 mm. wide

10.18 The connection between the main pipe and branch pipes shall be made by using branches and bends with access doors for cleaning.

10.19 Floor trap shall be provided with 25 mm. dia. puff pipe where the length of the waste is more than 1.80 meter or the floor trap is connected to a waste stack through bends.

10.20 The waste from lavatories, basins, sinks, baths and other floor traps shall be separately connected to respective waste stack of upper floor. The waste stack of lavatories will be connected directly to manhole while the waste stack of others shall be separately discharged over gully trap.

10.21 The main anti syphonage pipe shall be of 80 mm. internal diameter. When more than one branch from water closet, sink are connected with soil pipe and discharged into it anti syphonage from the lowest one should pass through and be carried up parallel to the soil for a point 1.5 metres minimum above the highest branch. It can then be connected to the soil pipe or it can be carried independently. The anti syphonage pipes of all the intermediate floors water closets should be joined with main anti syphonage pipe. The ventilating pipe shall have internal diameter of not less than 80 mm. in all parts and shall be connected with arms of soil pipe on trap through a 45□ branch, at a point not less than 75 mm. and not more than 300 mm. from the highest part of the trap and on the side of the water seal which is nearest to the soil pipe. The jointing shall be done according to the specifications for piping materials used in soil, vent or connected to the drain. On no account should lime or lime concrete come in direct contact.

11.0 G.I. PIPES AND FITTINGS

11.1 All pipes shall be " C " class (heavy) I.S. quality and out of the specified make to the requirement of the local authorities unless specified otherwise.

11.2 Pipes shall be galvanised inside and outside treated and fixed in accordance with the Municipal requirements. The joints shall be distributed in strict conformity with the regulations. They shall be secured clear of the wall surface by means of G.I. holder bats. All control values, stop cocks, ball valves, bib cocks shall be of the best approved quality procurable, of heavy cast drawn brass. All branches shall have individual control arrangement with fullway [peet] valves, to enable regulation and cut off as required. They shall be of best Indian manufacture specified in the schedule of quantities and of tested stampings and bear I. S. I. markings. all fittings shall be either `RR' or Ring & Cross make.

Laying and fixing

Where pipes have to be cut or re-threaded, ends shall be carefully filled out so that no obstruction to bore is offered. In joining the pipes, the inside of the socket and the screwed ends of the pipe shall be rubbed over with zinc and few turns of hemp yarn wrapped round the screwed and of the pipe which shall then be screwed home in the socket with a pipe wrench. Care must be taken that all pipes and fittings are kept at all times free from dust and dirt during fixing.

11.2.1. The water tightness of joints shall be assured by approved methods of jointing material.

11.3 Internal Work

All internal water supply pipes should be concealed pipes of GI C class.For fittings outside the walls shall be fixed either visible by means of standard pattern holder bat clamps, keeping the pipe clear off the plastered wall by 15 mm. for cold water and 38 mm. for hot water. Wherever indicated on the drawing or as directed by the Consultants, chasing of walls shall be done to embed pipes. All pipes and fittings shall be fixed truly vertical and horizontal or as directed by the Engineer-in-charge. All embedded cold water pipes are to be covered with bituminous polyethylene wrapping or equivalent approved by local regulations and National Building code. All embedded hot water pipes are to be painted with at least three coats and wrapped as above and then wrapped with three ply asbestos twine wrapped tightly around the pipe.

11.3.1 External Work

For external work, G.I. pipes and fittings shall be laid in dug or prepared trenches as called for or directed by the Engineer-in-charge. They should be wrapped, as specified above. The width of the trench shall be of minimum width required for working. The pipes laid underground shall not be less than 600 mm. from the ground level. They shall be surrounded on all sides by soft earth. The work of excavation and refilling shall be done in accordance with the general specification for earth work.

11.3.2 The wrapping of pipe shall be with 0.3 mm. thick FRP tissue as per manufacture's specifications.

11.4 All G.I. pipes and fittings are to be tested to a pressure of 10.54 kg/cm2 for 2 hours to ensure that pipes have proper threads and that proper materials [such as white zinc and hemp] have been used in jointings. All leaky joints must be made leak proof by tightening or redoing at Contractor's expense.

11.5 All water fittings shall be of approved make and shall in all respects comply with the latest Indian Standard Specification I.S.1239 [part II] The brass fittings shall be fixed in the pipeline in a workman like manner. Care shall be taken to see that joints shall be repaired, redone or replaced.

11.6 Wherever a G. I. pipe crosses a floor, the H D P E sleeve with 15 mm. all round clearance and projection by 80 mm. and below the floor should be provided. On no account should lime or lime concrete come in direct contact with G.I. pipe and fittings. This important condition shall not be waived under any circumstances.

12.0 MANHOLE, INSPECTION CHAMBERS, GULLY TRAPS, INTERCEPTING CHAMBERS, DROP CHAMBERS ETC.

12.1 General: Unless otherwise specified, manholes or inspection chambers of required depth shall be provided on all external drains, at all change of direction of the drain and where branch drain meets the main drain. They shall be of rectangular shape with a clear opening of 900 x 450 mm. Manholes shall be constructed of 230 mm. thick brick over P.C.C. bedding extending 230 mm. beyond the external face of the brick wall. Manholes beyond 1500 mm. depth shall be conical in section and circular at top with clear opening of 600 mm. diameter.

Masonry chambers shall be of such size as will allow necessary examination and clearance of drains. The minimum internal bases as per the requirement of MCGM and their bye laws if any, shall be adhered to.

In the absence of local bye laws, the requirements stipulated in I.S. 4111 [Part-I] code of practice for ancillary structures on sewerage system, shall be followed.

12.2 Excavate to the sizes and depths required for the manholes. Construct the manholes and refill outer space with selected excavation materials and dispose off surplus earth, as specified in "Excavation" 14.3 The specified size of manholes and chambers refers to inside dimensions. Build the manholes and chambers to the sizes and depths specified with brick wall in cement mortar as specified.

12.3 The manhole shall be built on a base of concrete of thickness of at least 150mm. for manholes up to 1000 mm. depths, 230mm. for manholes from 1000mm. to 2000 mm. depth and 300 mm. for manholes of greater depths. For special soil conditions, the thickness has to be as per structural design.

12.3.1 The thickness of walls shall be 230 mm. brickwork up to 1500 mm. depth and 350 mm. for depths greater than 1500 mm. The actual thickness for deeper manholes shall be based on structural requirements.

12.3.2 In the case of manholes deeper than 1500 mm. but up to 1800 mm. where conical manholes have been specified, the inside shall be 1200 mm. Up to 900 mm. below G.L./R.L and then taper off to 600 mm at the top, to conform to regulations. For greater depths, the internal dia. shall be increased as directed as per drawings.

12.3.3 Benching in manholes shall be in P.C.C. 1:2:4 and formed in position with necessary channels as required.

Bench up bottoms in fine cement rising 80mm. above the entire channel with rounded edge and launched up to the sides, at an angle of 45 degree and rendered in cement and sand [1:3] trowelled smooth.

Proper cement concrete channel shall be provided at the bottom and the branches from the various pipes shall discharge in the chamber with a suitable slope.

12.3.4 In all manholes over 900 mm. in depth, provide and build into walls approved cast Iron catch ring and steps at 300mm. interval beyond 450 mm. depth and make good cement rendering around as per I.S. 1742.

12.4 Cover the manholes with single seal cast iron heavy Duty manhole cover and frame(135 kg for 900 x 450 mm size & 225 kg for conical chamber) of approved make. Fill the seal with prepared manhole grease.

12.5 The top level of the manhole with the cover on must be in line with the finished ground level. However, if required and the finished ground level is not ascertained during construction of the manhole, the contractor shall temporarily fix the manhole cover till such time the final/paved ground level is established, or temporarily cover the built up manhole at no extra cost to owner. In case of any damage to the covers due to traffic or any other reasons

during the course of the project, or in the maintenance period attributable to the negligence of the contractor, the same shall be replaced immediately by the contractor at his own cost. The frame and the cover shall be painted with black Bitumen Anti-corrosive paint.

12.6 Drop Connections: In case the difference in invert levels between main drain and branch line requires a drop more than 600 mm., a drop connection should be provided generally as described below.

Cast iron or stoneware four way junction shall be fixed in position, at right angle to the drop pipe, at the level where branch pipe enters the manholes; provide suitable height of vertical drop pipe terminating into a plain bend, duly benched into the cement concrete [1:2:]. Access for cleaning the bend should be provided at finished ground level.

12.7 Gully traps in all waste pipes shall be of best quality 150 x 100 or 230 x 150 as indicated and laid on a 150 thick 1:3:6 cement bedding. They shall be enclosed in brick and cement mortar masonry with cement plaster forming as inspection chamber with full size 230 x 300 cast iron frame and cover (15 kg) or open grating 300 x 300 as required. Location and details will be indicated in the drawing.

12.8 There shall be 100 mm. dia vent pipes at the sewer trap chamber and 100 mm. ventilating pipe at the manhole at the head of the drain to be routed aesthetically as directed.

12.9 TRAPS

Exposed trap for all wash basin and urinal in public area shall be chromium plated cast brass.

12.10 Traps installed in connection with cast iron pipe shall be of the same quality and grade of the pipe; the size of outlet all correspond to the socket of the pipe receiving it.

12.11 Provide 150 x 100 size heavy cast iron sealed gully trap with extension piece having single or double inlet as shown. where required provide cast iron sealed cover, for such trap, secured with threaded gun metal bolts and felt gaskets.

12.12 An intercepting trap of required size shall be installed in the last inspection chamber prior to connecting with the public sewer or disposal system. this chamber shall be about 2000 mm. within the boundary of the property.

13.0 SANITARY FITTINGS

All sanitary fittings shall be as specified in drawings and as approved by the Engineer- in- charge

13.1 All setting and bedding of sanitary fittings shall be done carefully to suit the required levels. Mortar drops, paint splashes etc. shall be removed from fittings, walls and floors immediately before these get dry.

13.2 Wooden plugs

The plugs shall be of hard wood and of size 50 mm. x 38 mm. at a top and of length 50 mm. These shall be fixed on wall in cement mortar 1: 3 (cement : 3 sand), after the plugs are fixed in wall, the mortar shall be cured till it is set.

13.3 Wall Hung Water Closets

Wall hung box rim closets in pastel shades of approved make having back inlet and "p" trap outlet shall be fixed an appropriate cast iron or M S Brackets of suitable design to suite the thickness of toilet wall and ensure that the chair is self supporting and independent of the wall.

13.4 Plastic Seat and Cover

The Seat shall be fixed to the pan by mean of two 8 mm. dia corrosion resistant C.P. hinge bolts with a minimum length of shank of 65 mm. and threaded to within 15 mm. of the head. Each bolt shall be provided with two suitably shaped washers of rubber of or of other similar material for adjusting the level of the seat while fixing it to the closet. In addition one 8 mm. non/ferrous metal of stainless washer shall be provided with each bolt. The maximum external diameter of the washers fixed on the underside of the pan shall not be greater than 25 mm. One arm of the hinge in each bolt shall be fixed to the underside of the seat by three nos. 20 mm. long C.P. screws. The other arm of the hinges shall be fixed to the underside of the cover flush with the surface by means of 3 nos. 10 mm. long C. P. Screws.

13.5 Flush Valve: The Brass C P / S .S concealed Flush valve shall be of approved make and shall be fixed as per tile pattern as shown in detail drawing

13.6 Health Faucets: The Health faucets (Jet spray) shall be of approved make along with C P angle cock and wall flange and shall be fixed as per tile pattern as shown in detail drawing

13.7 Coat Hook: The Brass C P coat hooks shall be of approved make along with S.S screws and shall be fixed as shown in detail drawing.

13.8 Toilet Paper Holder: The S S Concealed / Open Toilet paper holder of approved make shall be fixed in position by means of C.P screws embedded in the wall to suit tile pattern

14.0 Half stall Urinals : Urinals shall be Large flat back in pastel shade fixed in position by using screws, and shall be at a height of 600 mm. from the floor level to the top of the lip of urinal, unless otherwise directed.

14.1 Each urinal shall be connected to 32 mm. dia G I waste pipe which shall discharge into the channel or floor trap. The connection between the urinal and flush or waste pipe shall be made by means of C.P. Bottle Trap heavy type.

14.2 All urinal pans will have individual Auto flush electronic sensing system of approved type and make complete, including all accessories / wiring etc..

14.3 C P Spreaders, Intel, outlet connections shall be prepared to actual site measurement, to ensure proper verticality and elegance. These shall be full bore and shall not form any dents.

15 Wash Basin : The basin shall be Oval / Round below counter type in pastel shade of approved make supported on a pair of concealed cast iron brackets

15.1 Each Wash Basin shall be connected to 32 mm. dia G I waste pipe which shall discharge into the floor trap. The connection between the wash basin and waste pipe shall be made by means of C.P. Bottle Trap heavy type.

15.2 C P Single leaver Pillar cock , C P Angle cock with wall flange, C P flexible connection shall be of approved make and range and fixed as per tile pattern as shown in detail Drawing.

16 S. S. Sink

The Sinks shall be of large size with bowl and single drain board of approved make supported on a pair of concealed cast iron brackets

16.1 Each Sink shall be connected to 40 mm. dia G I waste pipe which shall discharge into the floor trap. The connection between the sink and waste pipe shall be made by means of C.P. Bottle Trap heavy type.

16.2 C P Single leaver swinging sink cock , C P Angle cock with wall flange, C P flexible connection shall be of approved make and range and fixed as per tile pattern as shown in detail Drawing.

17.0 HANGERS AND SUPPORTS

17.1 General:

Provided proper solid angle iron/channel section. supports for all pipes complete with clamps. Wherever insulation comes, provided wooden guide to support pipe on the angle iron hanger / supports. In general where a bunch of pipes run as far as possible MS plates inserts are provided in the beams / slabs to facilitate welding of angle iron supports. For attachment in concrete, use "DASH" fasteners or Anchor plug type inserts or equivalent. Provide hangers within 1 mtr. of all changes in direction of mains and a minimum of 3 hangers per expansion bend. provide all additional structural steel angels, channel or other members not specifically shown but are required for proper support.

17.2 Where necessary additional hangers to be provided to arrest water hammers or hydraulic resonance with proper rubber padding.

17.3 Space hangers, as noted below, except on all soil pipe which shall have a hanger of multiple fittings, sufficient hangers shall be provided to maintain proper slope without sagging; in case of angle suspended lines, the following is suggested :

A) Pipe sizes	Hanger Road Dia
20 mm. through 50 mm.	10 mm.
63 mm. through 125 mm	13 mm.
150 mm. and over	16 mm.

B) Pipe Sizes	Spacing of supports
13 mm. to 20 mm.	1500 mm. apart
25 mm. to 38 mm.	1800 mm. apart
50 mm. and above	2000 mm. apart as per I.S.

17.4 Provided floor stands, wall brackets or masonry piers etc. for all lines running near the floor near walls so that those lines can be properly supported or suspended from the walls or floors. pipe lines, near concrete or masonry walls may be hung also by hangers carried from wall brackets at a higher level than pipe. Hanging of one pipe from another is prohibited.

18.0 VALVES AND PRESSURE GAUGES

18.1 Pressure gauges shall have not less than 115 mm. dial, 10 mm gas threads, brass body syphon and gauge cock of 10 mm. size. Dial ranges shall be adequate for the pressures encountered and as specified.

18.2 Provided valves on branch pipe connection to mains and at connection to equipment where indicated. All valves are to be located for easy access and are to be full bore of pipe connected together. Support all valves wherever necessary. Valves are to be as per I.S 780 (Class I) for cast iron sluice valves and to I.S 778 for G. M valves and tested and approved by local authorities as per bye laws in force.

18.3 All globe and check valves shall have working parts suitable for cold water, as required. Valves shall be tagged with permanent label under hand wheel indicating type and duty.

18.4 All valves over 150 mm. dia. in equipment rooms located over 2000 mm. above floor shall be provided with chain wheels with chains extending upto 1800 mm. above floor.

18.5 Where indicated and specified, angle pattern stop cocks, at each cold water inlet to be provided. They should be anti scalding pattern same as faucets of approved manufacture.

18.6 Provide C.I. body with brass disc spring loaded & straineof approved quality.

19.0 Strainers :

Cast iron pot strainer with G.M. mesh screen in perforated brass strainer body of approved manufacture are to be provided before valves. Provide each Strainer with a cock for blowing down. Screening area of the strainer shall be minimum of 5 times more than pipe area, with 1 mm. maximum size holes.

20.0 CLEANING, OPERATION AND TESTS

20.1 Plumbing equipment fixtures, piping etc. shall be free of stampings, markings (except those required by codes) iron cuttings and other foreign materials.

20.2 cold and drinking water systems shall be cleaned thoroughly, filled and flushed with water.

20.3 The entire mechanical apparatus shall operate at full capacity without objectionable noise or vibration.

20.4 The system has to be periodically given the tests specified in the presence of site engineer and the client's representative as herein specified.

All test equipments, accessories, materials and labour necessary for conducting the tests and for inspection and repair work shall be arranged well in advance of the test date.

After shortcomings are repaired or defective items replaced the test will be repeated until the entire system found satisfactory. If the local regulations insist on similar tests before approving authorities, the same shall be complied with and acceptance from the authorities lodged with the Consultants/Owner.

20.5 The entire system of soil, waste and vent piping to be tested with water after the roughing in is completed and before the fixture are set. After setting the fixtures, provide smoke test, after sealing all types.

20.6 Water Test entire system or sections of system by closing all openings in piping except the highest opening and filling system with water to the point of overflow. If the system is tested in sections, plug each opening except the highest opening of the section filled with water. Keep the water in system or in the specific section under test for atleast 45 minutes before inspection starts with test pressure/head lasting for two hours. The system must be tight at all joints.

20.7 Final Test : After fixtures are set, test system with smoke as follows:

Smoke Test :

Fill traps with water, then introduce into system a pungent thick smoke produced by one or more smoke machines. When smoke appears at stacks on the roof, plug, stacks and allow pressure of 25 mm. water column to build up in system. Maintain pressure for 15 minutes before inspection starts. The system shall be tight at all joints. Sulphur smoke shall not be allowed.

20.8 Test all down spouts or rain headers and their branches within the building by water as described for the above soil, waste and vent system.

20.9 All Water Piping :

Hydro static test 10.54 Kg/cm2 for a minimum of two hours without drop in pressure as required.

20.10 On completion of the works, the following tests shall be performed to the

satisfaction of the consultants/client's representative before issue of Virtual Completion Certificate, if so required.

a) Smoke test.
b) Hydraulic test.
c) Self induced test for fixtures.
d) Tests for anti syphonages system.
e) Pump rating and output.
f) Inspection of all units and fixtures.

20.11 The contractor shall arrange on his own initiative for similar tests during the progress of works, to ensure that there are no defects in material/workmanship in portions of work to be concealed or embedded under the floor or walls in ceiling.

20.11.1 Air or Smoke Test :

A uniform gauge pressure of 0.5 Kg/cm2 or sufficient to balance a column of mercury 250 mm. in height. This pressure will be held for a period of at least 15 minutes without any loss of pressure.

20.11.2 Hydraulic Test :

i) All underground drains for a static head of 2 metres with the down stream and plugged.
ii) All vertical drains also for a static head of 2 mtrs.
iii) Water lines for 11.25 Kg/cm2 test pressure for minimum 24 hours.
iv) Section wise isolation and test.
v) Air locks.

20.11.3 Manholes : Clean the manhole free from all dirt, soil and other extraneous material and wash it with water to clear all mortar, mud etc. The pipe outlets to be plugged with gunny bags or wooden stopper to ensure proper closure. Clean water from an approved source shall be filled into the manhole to depth not exceeding 1.2 mtrs, as directed by the Engineer In Charge and the same is kept for about 2 hours. Test should be conducted early in the morning before 9 a.m so that tendency for evaporation losses are minimum.

20.11.4 Self induced test for fixtures: All units will be operated individually and the flow checked.

20.11.5 Inspection of individual units and fixtures for visible defects in shape etc.

20.11.6 Test for anti symphonage system : Units on a single system will all be operated to check up the effect on symphonage.

20.11.7 Pump rating and output : Checking discharge and terminal head both at the free end as well as the overhead storage tank.

21.0 PAINTING

21.1 Equipments :

After complete installation and testing all the equipments including mounting frames etc. shall be painted with 3 coats of paints, as per colour code required by the client or a directed by the consultants.

21.2 Piping :

After all the piping has been installed and tested, the piping shall be given one coat of anti corrosive paint followed by two coats of paint as per colour code required by the client or as directed by the consultants.

21.3 Colour code :

Identification of the pipe lines shall be as per standard colour prescribed by IS : 2379.

22.0 EQUIPMENT AND PIPING IDENTIFICATION

22.1 Pipe Markers :

Each piping system shall be provided with a name plate properly clamped or stenciled. Letters are to be 80 mm. if 3 mtrs. above the floor and 50 mm. minimum if below that height. Name plates on parallel groups of pipes etc. shall be neatly lined up. Wording of lettering shall correspond to the equipment designations used in piping legend and shall be as approved. Name plate to be of G.I sheets (gauge 20 SWG on 25 x 25 mm. angle) secured on to sheet metal and angle iron to be welded on main pipe. In case of insulated pipe the 25 x 25 mm. angle bracket should be projecting beyond insulation thickness.

22.2 Valve Register :

To be submitted in triplicate along with location and identification number in final drawing to be furnished by contractor.

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23.0 TOOLS AND MATERIALS AND STORAGE

23.1 The Contractor at his own cost and charge shall provide all materials, tools, tackles, measure, scaffolding, labour and water, necessary for the completion of the whole work in all respect.

23.2 The contractor shall pay the fees for testing the materials to local authorities, or other statutory authorities.

23.3 The Contractor will obtain, from time to time various permissions and the completion certificates as per rules of all local and statutory authorities.

23.4 The Contractor shall insure the work against damages, for such sum as the Engineer - in - charge may, from time to time, direct.

23.5 All the brackets and hangers for pipe shall be fixed to the wall or R.C.C slab using `Dash' fasteners, wherever necessary. Exposing reinforcement bars for hooking will not be permitted.

24.0 GENERAL SERVICES

The Contractor shall pay the fees for testing the materials by the Municipal Corporation.

The Contractor will process and arrange from time to time various permissions and obtain the drainage completion certificate, storm water drainage completion, rain water harvesting and adequate water supply certificate will be obtained by Owner / Architect, under the rules of the local authorities.

24.0 BUREAU OF STANDARDS, COLOUR CODE

In industrial and multi disciplinary installations like Hotels and Hospitals, additional item may be added for other systems. To indicate the class of its contents, each pipe and appurtenances connected therewith shall be marked as under.

i]	Water Drinking	Sea Green
ii]	Non Potable Water	orange
iii]	Treated effluent	Admirably Blue
iv]	Fire installation	Fire Red
v]	Steam & Hot water	Silver Gray
vi]	Compressed Air	Sky Blue
vii]	Vacuum	Canary Yellow
viii]	Liquified petroleum Gas	Red
ix]	Diesel oils	Light Brown
x]	Sprinkler pipes	Dark Violet

Charts showing the colours for primary identification should be displayed at points where they are likely to be needed for reference.

NOTE :

a) To comply with the Bureau of Standards Act enacted by Parliament the fixtures selected should have ISI making along with brand name of manufacturer.

b) Fittings without ISI make if selected as a Functional/aesthetic requirement should be got tested in an approved test House prior to installation.

c) The Engineer-in- charge will have the discretion to select from the above list, in consultation with the Architect./ consultants .

Additional Technical Specifications:

1. POLYMER MODIFIED MORTAR/CONCRETE

Carefully breaking & removing the existing damaged / corroded R.C.C. Columns, beam, slabs, chajjas, paradis, fins etc including disposal & cating away of the debris, cleaning etc in the patches or long stretches by means of light chisel upto 50mm depth, upto the level of reinforcement without damaging brickwork, plaster in the vicinity, including supplying, providing & erecting in position the necessary scaffolding, cleaning, disposing of debris etc complete & then providing and applying polymer modified cementitious mortar treatment upto 50 mm thk. comprising of following operations:
a) Reinforcement treatment coat
Scrapping reinforcement with wire brush and cleaning the same from all sides by light tapping, wire brushing and emery paper.
applying Rusticide Rustprime/Ruskill A or approved equivalent in one or more coats as directed as per manufacturers specification, washing with water.
b) Bond coat
Providing & applying Polyalk Fixoprime or equivalent and Cement (1:1.25) to exposed steel bars in two coats as per manufacturer's specifications and brushable consistency for bonding old and new concrete surfaces.
Providing and applying bonding coat of POLYALK EP or equivalent and Cement (1: 1.25) to the entire concrete surface.
c) Mortar application
"Applying Polymer modified mortar/concrete treatment as per manufacturer's instructions in layers of thickness not exceeding 20 mm (applying bonding coat at every layer) upto profile of concrete in the vicinity by applying Hand pack Polymer Modified Mortar by mixing 1 part by weight of "POLYALK EP" or equivalent with 5 parts by weight of cement and
15 parts by weight of well graded sand and water to achieve the desired consistency [Sand Grading IS383, Zone II, Silt content <6%]"
Including curing, scaffolding, cleaning etc. complete
Note: If the depth of polymer modified mortar/concrete exceeds 50 mm, then quantity shall be paid by considering multiplication factor = (actual depth) / 50mm for additional thickness.
At a time apply mortar layer not more than 20 mm thick. The mortar should be prepared using mechanical mixers / stirrers & should be well compacted and finished using appropriate methods. The rate to include for necessary compaction with mechanical plate vibrator etc. complete to the satisfaction of the EIC.
Note: 1. Quoted rate shall be inclusive of additional concreting done and applying protection coat of polymer + cement (1:1 by volume) to existing reinforcement, which will not be paid seperately.
2. Hammers weighing more than 2 kg shall not be used. The rate shall also include the replacement of the totally corroded and damaged reinforcement steel bars wherever necessary & directed including welding, lapping, clening etc complete.

2. MIRCO CONCRETE

Providing and laying M-35 Grade of 75 mm thk. prepacked dual shrinkage compensated polymer modified microconcrete like Master Emaco S346 of BASF /Renderoc LA55 of Fosroc/ Sikarep Microcrete -4 of Sika or equivalent material, Pouring in narrow location for column, beam, slab. (Rate includes scaffolding,shuttering with the marine plywood/M.S. sheets/plates to be fixed in true line and level as required as per site condition. materials, labour etc. Measurement on the basis of actual consumption of micro concret on square feet area)

The rate is inclusive of chipping of the loose concrete and its disposal away from the site. (The rate should include 8a,b,c and 10) AVERAGE THICKNESS 75 MM (Polymer treatment for damaged R.C.C column/ beams/ slabs/ chajja etc. only upto 50 mm thicknes and microconcrete for entire thickness of damaged area upto only 75 mm-100 mm), core cutting, bond coatetc complete the work as per instruction of the architect / Bank's Engineer**.**

3. CRACK FILLING WITH PMCM

Carefully removing the existing plaster / mortar / loose concrete, chasing the cracks, including supplying, providing & erecting in position the necessary scaffolding, disposal & cating away of the debris, cleaning etc & sealing the separation cracks between R.C.C. and brickwork by raking, open the crack by electrically operating groove cutter as directed, insertion of 20 mm downgraded aggregates by hammering as per the instructions of the consultant, sealing with polymer modified cementatious mortar (25mm width x 25mm depth) using Polyalk EP or equivalent as per the specification of item polymer modified cementatious mortar/concrete, application of chicken mesh (200mm wide, 200mm overlapping length) along the crack by 'U' nails spaced at 300 mm c/c, including necessary breaking plaster, concrete, brickwork, washing with water, curing, cleaning etc. complete

4. GROUTING

Drill the holes of 12mm dia for depth upto 30mm to 50mm inside the damaged or honey combed concrete areas at spacing as instructed by consultants. Clean the holes by blast of air or by jet of wate. Insert the PVC nipples into pre drilled holes and seal peripherally by "M Seal". After 24 hours, injet the "Polymer Cementaceous slurry mix" in the proportion as under into the nipples, at a pressure of 2 kg / Sq. cm using gum pumps of capacity not less than 30 PSI in the rato of (1 kg polymer EP: 3 KG cement: 2 litres of water). After two days of curing, cut the nipples and seal it with polymer modified mortar.

5. JACKETTING

Providing & fixing shear keys upto 12 mm dia and 175 mm long bent to required shape at regular intervals including drilling holes in concrete, dipping ends in epoxy, fixing etc complete for column jacketting etc as directed.
Providing and laying ready mixed Reinforced cement concrete of M-25 grade for jacketting using approved plasticizer etc, including waterproof shuttering, mixing, pouring, temping, consolidation, curing, chemicals & compounds of approved make etc complete. Reinforcement shall be paid for seperately under relevant item.

6. AAC Block Partitions

Providing and constructing autoclaved 100 mm thick wall of 100mmX 240mm X 600mm Siporex Block in proper line and levell, at all levels in cement mortor 1:4 (1 cement and 4 river sand) using standard size of blocks, including all scaffolding, staging, curing, all lifts, raking of joints, all labour, hire and fuel charges for all tools and plants employed etc. complete as directed. rate shall include providing concrete binders in proportion 1:2:4, 75mm thk reinforced with 4 nos of 8mm dia Fe 415 bars, RCC binder to be at every 1mtr interval from floor level. the rate to be inclusive of cost of reinforcement and formwork, cover block for reinforcement and all other incidental charges etc., all complete and as directed.
The rate shall also include closing the gap between the masonary and rcc beam/ slab finished to required slope as directed by engineer in charge. Note : - the width of joints not to exceed 10mm. The Siporex block to withstand the standard fire for 240mins under uniform compressive load of 15 kg/m2 as per IS: 3809, BS : 476 part 20 and ISO 834 with certification. (Siporex/ Godrej/ Ultratech/ equivalent)

7. WATERPROOFING OF CHAJJAS, FINS, PADADIS ETC

Carefully removing the entire water proofing treatment on the chajjas, fins, paradis etc of any thickness including disposal & cating away of the debris, cleaning etc and Providing and applying water proofing treatment of upto any thickness with average 150mm thickness for chajjas, fins, padadis etc consisting of 12mm thick layers in 1:4 cement mortar with water proofing compound comprising of the following operations: - Two coats of "POLYALK WP" or equivalent of M/s. Sunanda Speciality Coatings Pvt. Ltd or equivalent and cement in 1:1.25 ratio, constructing and laying brick bat coba in cement mortar 1:5 including the water proofing compound upto the desired thickness as directed at an interval of 24 hours on the surfaces

and extending it upto 1'0" over the side walls. Air cure the same for 24 hours and damp cure for next 4-5 days. Providing and applying single coat of bonding agent HACK-AID-PLAST or equivalent of M/s. Sunanda Speciality Coatings Pvt. Ltd or equivalent on the POLYALK WP coating by spray and providing wet on wet a chat/dash coat of 1:4 cement mortar in 12 mm thickness including all leads, lifts and laid to proper slope to drain off water entirely

The rate shall include watta at the junction of wall as directed and including finishing the top layer of water proofing treatment with IPS or as directed and covering the whole waterproofing treatment with ten year's guarantee on requisite stamp paper etc complete as directed by Consultant in line with the technical specifications.

All mortar mix to be necessarily added with "SUNPLEX" or equivalent 330 gms pouch per 50 Kg bag of cement. All coats of POLYALK WP or equivalent to be inspected using a Magnifying glass by the EIC to satisfaction to ensure pinhole free coating. Ensure mechanical mixing of "POLYALK WP" or equivalent and cement slurry using stirrers and check that cement particles do not settle down in the prepared mix. Consume the prepared mix within 30 minutes. Payment will be made as per the plan area. Lay small sized well soaked brick bat metal coba in cement mortar 1:3 to proper level and slope as per instructions adding "SUNPLEX" - 330 gms pouch per 50 Kg bag of cement to the mortar mix.

Fill up the joints adding SUNPLEX or equivalent 330 gms pouch per 50 Kg bag of cement to the cement mortar 1:3 mixed and finished smooth with neat cement on top so as to drain water smoothly. Provide about 9" to 12" watta along the walls with cement mortar 1:3 small brick bats. Rate to include for making border at the junction of watta and wall plaster, ponding for seven days by closing the RW outlets and making watas etc. complete to the satisfaction of the EIC.

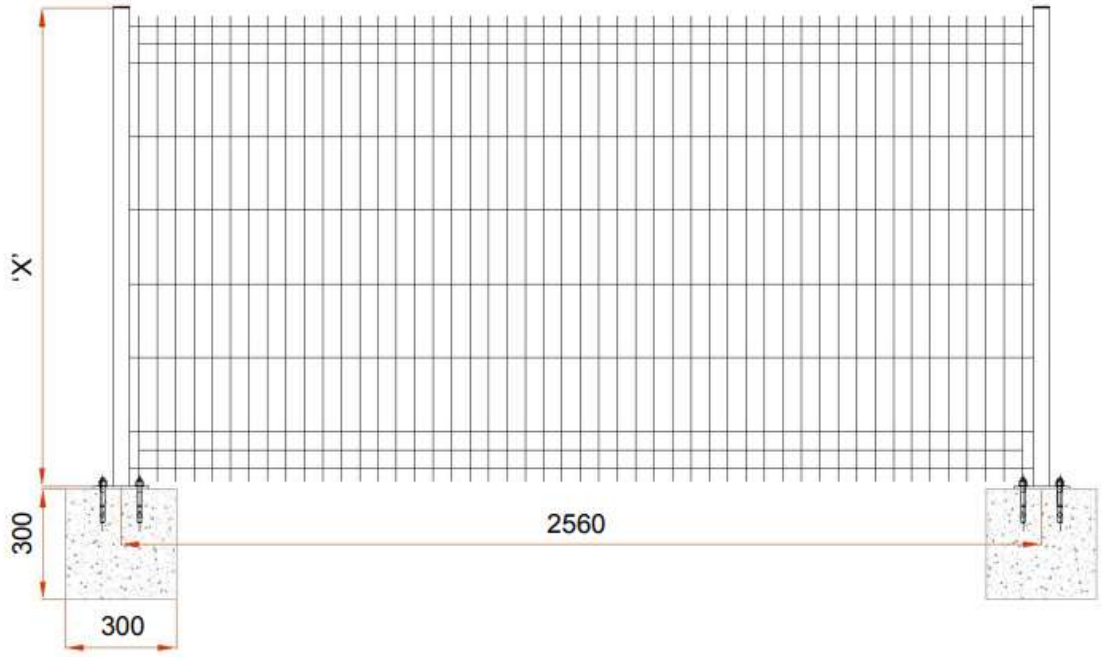
8. TECHNICAL SPECIFICATIONS FOR MODULAR FENCING

1) Unico Shield

Raw Materials:		**Quality Specifications:**	
Panel:	Galvanised MS Wire: Over 40 GSM	Complies BS-EN 10223-	4/7 standards
Tensile Strength:	Over 65 kg/mm²	Sample Testing	as per IS 2500
Post:	Pre-Galvanised MS 80 GSM	Mesh Aperture-	+ 2 mm Tolerance
Base-Plate:	Pre-Galvanised MS	**Welding Specification:**	
Post Cap:	PVC Anchors: GI	Welding Process-	Electrical Resistance Welding
Anchor Caps:	PVC	Weld Strength-	The average weld shear strength of 4 welds taken at random shall not be less than 50 % of the breaking strength of vertical wire
Coating Process:	Pure Polyester Coating (PPC)		
Thickness	Over 65 microns		
Test-	1000 hrs Salt Spray Tested		

Parameter	**Max**
Mesh Aperture	76.2 x 12.5mm
Panel Height	1842mm
Panel Width	2500mm
Post C-C	2515mm
Post Length	1900mm
Post Type	H Profile
Anchors	M12 x 150

2) Unico Prima



All dimensions are in mm

	Mini	Regular	Maxi
'X'	1300 mm	1600 mm	1900 mm

Consider Size of 1900mm

UNICO Prima

Stunning Demarcation solutions for modern architectures.

UNICOPrima is a modular welded mesh fencing system that combines affordability with elegance and durability. Modular design allows end users and DIY enthusiasts to procure component panels, posts and accessories for assembling these fences quickly on site without having to bother with on-site welding and painting.

Applications:

Bungalows | Residential Buildings | Gardens & Parks | Amusement Parks | Schools & Colleges

Commercial Spaces | Walkways | Factories & Industries | Warehouses

03

Features

Easy Installation: The unique post profile of UNICOPrima eliminates the need for any fixing components or welding & fabrication onsite.

Elegant: The distinctive mesh pattern of 200 x 50 mm adds elegance & aesthetics to the perimeter.

Multiple Color Options: UNICOPrima can be customized with different colour options to match the perimeter design theme.

Specifications

Parameter	Mini	Regular	Maxi
Mesh Aperture	50 mm x 200 mm		
Panel Height	1260 mm	1660 mm	1860 mm
Panel Width	2500 mm		
Post Type	UNICOPrima		
Post C-C	2540 mm		
Post Length	1800 mm	2100 mm	2300 mm
Anchors	M10 x 150 mm		
Colour Options	RAL 1021 - Rape Yellow, RAL 3020 - Traffic Red, RAL 5015 - Sky Blue, RAL 6005 - Moss Green, RAL 7016 - Anthracite Grey, RAL 9005 - Jet Black, RAL 9010 - Pure White		

04

Technical Specification of Solar Water Heating System.

Sr. No.	Description
1	**Solar Flat Plate Collector** Copper to Copper, Black Chrome coated, 1.2mm Aluminum Frame with Toughened glass **Standards :** BIS Certified. **Make:** Jay Solar / Emmvee / Neutec. **Supports :** MS Angle with Hardner based Epoxy Paint. **Fasteners** - SS 304.
2	**Axillary Hot water Tank** **Capacity :** 1000 Litres. **Steel Grade / Thickness :** SS 304 / Shell – 3 mm, Dish – 4 mm. **Ports :** SS 304. **Test Pressure :** 4 bars. **Tank Support :** Pre painted MS Channel / Square Pipes / Angles. **Electrical Heater** : 3 KW X 5 Nos, 220 Volts. **Make :** Powertroniks Solar / Emmvee / Neutec.
3	**Galvanized Pipe** **Grade :** C- Class. **Size :** 25 mm. **Standards :** BIS Certified. **Make**: Jindal / TATA / Surya.
4	**Rubber Nitrile Insulation** **Size / Thickness :** ID 40-32 mm / 9 mm. **Make :** ARMAFLEX / Supreme / K-Flex.
5	**Rubber Nitrile Insulation** **Size / Thickness :** ID 25 mm / 9 mm. **Make :** ARMAFLEX / Supreme / K-Flex.
6	**Non Return-Valve** **Type / MOC** : Swing type / Brass **Make**: Zoloto / DRB.
7	**Forced Circulation Motor Pump set.** **Flow Rate** : 4500 LPH. **Head :** 25 Meters. **Fluid Temperature :** 70 Deg. **Make** : CNP/Kirloskar / Grundfos /Wilo.
8	**Automatic Differential Temperature Control Panel.** **Enclosure :** Powder coated Steel. **Build Accessories** : MCB / Contractors / Relay/ Temperature Controllers/ Differential Controller/ PT 100 Sensors / LED Display / Temperature Display/ ON – OFF Functions etc. **Make of Accessories** : L&T / Schneider / Havells / Phoenix / Siemens.

Technical Specifications for Electrical works

A. GENERAL

1.0 The following Technical Specifications are made applicable for the Stated Job and shall be rigidly adhered to while supplying and installing the materials at site.

1.1 Codes and Standards:

1.1.1 The following Codes and Standards shall be applicable for continuous performance of all electrical equipment's to be supplied, delivered at site, erected, tested and commissioned. The Electrical equipment's offered shall comply with the relevant IndianStandard Specifications, Fire Insurance Regulations, Tariff Advisory Committee's Regulations, and in particular to Indian Electricity Rules in all respects with all its latest amendments up-to-date.

1.1.2 For guidelines to the tenderers, few of the Indian Standards are indicated below:

IS 8084 / 1976	Interconnecting bus-bars for A.C voltage above 1KV up to & including 36KV.
IS 13032 / 1991	A.C miniature circuit breaker board for voltage not exceeding 1000V specification.
IS 3043 / 1987	Code of practice for earthing.
IS 3427 / 1997	A.C metal enclosed switchgear & control gears for rated voltage above 1KV up to & including 52KV.
IS 3837 / 1976	Accessories for rigid steel conduits for electrical wiring.
IS 13947 / Part3 / 1993	Specification for low voltage switchgear & control gear.
IS 13947 / Part1 / 1993	Specification for low voltage switchgear & control gear.
IS 4615 / 1968	Switch socket outlets (Non-Interlocked type).
IS 5216 / Part1, 2 /1982	Guide for safety procedures & practices in electric work.
IS 5578 / 1984	Guide for marking of insulated conductors.
IS 5820 / 1970	Specification for precast concrete cable covers.
IS 6381 / 1972	Specifications for construction & testing of electrical apparatus with type of protection 'e'.
IS 10322/ Part1, 2/1982	Specification of luminaries.
IS 10322 /Part3, 4/1984	Specification of Laminaries.
IS 10322/Part5 (Sec1,2)/1985	Specification of Luminaries.
IS 10322/Part5 (Sec3 to 5)/1987	Specification of Luminaries
IS 13947 / Part1 / 1993	Specification for low-voltage switchgear & control gear.
IS 13703 / Part4 / 1993	Specification for low voltage fuse for voltages not exceeding 1000V AC or 1500V DC.
IS 2551 / 1982	Danger notice plates.
IS 2268 / 1994	Call bells / Buzzers.
IS 732 / 1989	Code of practice for electrical wiring installation.
IS 3854 / 1997	Switches for domestic & similar purpose.
IS 2312 / 1967	Exhaust fans.

IS 2309 / 1989	Code of practice for lighting production.
IS 2418 / Part1 to 3/1977	Tubular fluorescent lamps for general lighting service.
IS 1937 / Part3 / 1983	Conduits for electrical installations.
IS 13032 / 1991	AC miniature circuit breaker board for voltage not exceeding 1000V.
IS 2667 / 1988	Fittings for rigid steel conduits for electrical wiring.
IS 2675 / 1983	Enclosed distribution fuse boards cutouts for voltage up to 1000V.
IS 2706 / Part1 to 5/1992	Current transformers.
IS 15086 / Part1 / 2001	Surge arresters.
IS 13925 / Part1 / 1998	Shunt capacitors for AC power systems having a rated voltage above 1000V.
IS 13118 / 1991	Specification for HVAC circuit breakers.
IS 374 / 1979	Ceiling fans.
IS 5578 / 1984	Guide for marking of insulated conductors.
IS 418 / 1978	Tungsten filament general service electrical lamp.
IS 694 / 1990	PVC insulated cable & cords for power / lighting.
IS 13010 / 2002	A.C watt-hour meters.
IS 732 / 1989	Electrical wiring installation (up to 650V).
IS 10870 / 1984	Code of safety for hexane.
IS 1248 / Part1 / 1993	Direct acting indicating instruments & their accessories.
IS 1248 / Part2, 6 /1983	Direct acting indicating instruments & their accessories.
IS 1248 / Part7, 8/1984	Direct acting indicating instruments & their accessories.
IS 1248 / Part9/1983	Direct acting indicating instruments & their accessories.
IS 1293 / 1988	3 pin plugs & socket outlets.
IS 1554/Part1 to 3/1988	PVC insulated cables – heavy duty.
IS 13947/Part 1 to 5/1993	Low voltage switchgear & control gear.IS
1651 / 1991	Lead acid cell batteries.
IS 9537 / Part 5 / 2000	Conduits for electrical installation.

The entire electrical installation work shall be strictly complied with the Codes Standards, Rules and Regulations framed under the Indian Electricity Act. Further, itshall be carried out as per the Regulations and Rules set out by "Tariff Advisory Committee and/or Fire Insurance Regulations".

Any other IS Codes As applicable at the time of execution over and above whateverstated above. Some of the Rules framed under Indian Electricity Rules of 1956 andall amendments thereof more particularly complied to :-

35, 43, 44, 44-A, 45 (Part-I), 50, 51, 59, 61 (a), 61 (c), 62, 63 (2), 65, 66, 67, 68, 69 and 92 (2).

Volume-III
Financial Bid

Letter of Transmittal for Financial Bid

(On Original Letter Head of Bidder)- To be submitted along with Technical Bid

Dated:

To,

Addl. Chief Engineer
INFS-I Division
WAPCOS Limited
76-C, Institutional Area, Sector - 18
Gurugram-122015, Haryana
Email: wapcosiimm@gmail.com

Sub: Financial Bid for the work "Special Repair works in Savitribai Phule Girls Hostel, Swami Vivekananda Hall Boys hostel, Children's Park and Modular Fencing Work in Anand Vihar in IIM Mumbai"

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 an 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 valid as period specified in the NIT.
6. I / We hereby submit our offer Bid Price excluding GST as filled in excel format file for undertaking the aforesaid Work 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**

Financial Bid
(To be submitted online only)

Validate Print Help n Wise BoQ

Tender Inviting Authority: WAPCOS LIMITED| INFS-1 Division

Name of Work: Special Repair works in Savitribai Phule Girls Hostel, Swami vivekananda Hall Boys hostel, Children's Park and Modular Fencing Work in Anand Vihar in IIM Mumbai.

Contract No: WAP/INFS-1/IIMM/R&M/2025/04

Name of the Bidder/ Bidding Firm / Company :	

PRICE SCHEDULE

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

NUMBER #	TEXT #	NUMBER	TEXT #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Estimated Cost in Rs. P	Quoted Currency in INR / Other Currency	Total Amount In Figures excluding Taxes To be entered by the Bidder in Rs. P	TOTAL AMOUNT excluding taxes in Rs. P	TOTAL AMOUNT In Words
1	2	6	12	7	11	13
1	ABSTRACT OF COST					
1.01	Part-A: Repair & renovation of Savitribai phule Girls Hostel	43,34,811.00	INR	0.00	0.00	INR Zero Only
1.02	Part B: Preliminary estimate for Repair & renovation of Swami vivekananda Hall Boys hostel.	67,04,134.00	INR	0.00	0.00	INR Zero Only
1.03	Part C: Repair of existing solar in Savitribai phule Girls Hostel	15,36,607.00	INR	0.00	0.00	INR Zero Only
1.04	Part D: Repair / Renovation & providing modular fencing of Children Park / Kids Play Area	11,97,934.00	INR	0.00	0.00	INR Zero Only
1.05	Part E: Installation of Modular fencing work & gates at Anand Vihar	17,72,476.00	INR	0.00	0.00	INR Zero Only
Total in Figures					0.00	INR Zero Only
Quoted Rate in Words		INR Zero Only				

Note:

- The quoted rate filled in Summary of Cost/Financial Bid (as per the format of CPP Portal in excel), should include all associated costs with the project including any out of pocket / mobilization expenses, taxes (excluding GST) if any applicable as per Govt. terms, shall be paid by the Contractor.
- The contractor shall enter the Rates excluding GST for each Item in the excel format rounded off up to Zero decimal places. The rate shall be inclusive of all for the item description.
- 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 be reimbursed to the Agency on submission of proof of Deposition of GST.
- The company shall be performing all its duties of deduction TDS and other deduction on payment made to the contractor as per applicable legislation in force on the date of submission of bid or to be newly / amended introduced during the execution of the Contract.
- The Quantity may vary at the time of execution as per the Requirement of IIM Mumbai. IIM Mumbai may Choose not to execute any particular Items in the BoQ.
- No Escalation on the rates shall be provided at later stage.

Important Note for submission of online tender:

- **DO NOT FILL ABOVE TABLE OF SUMMARY OF COST AT THE TIME OF SUBMISSION OF TECHNICAL BID.**
- THE ABOVE FINANCIAL PROPOSAL IS TO BE FILLED BY BIDDER IN THE BOQ FILE ATTACHED IN E-PORTAL and shall be submitted under Financial Bid Only.