LIFE INSURANCE CORPORATION OF INDIA
EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
AN ISO 9001:2015 CERTIFIED DEPARTMENT

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BID- I & BID-II

NAME OF WORK:- E-TENDER (PERCENTAGE RATE) FOR PROPOSED EXTERNAL & INTERNAL REPAIRING AND PAINTING WITH RENOVATION OF FLOORS & TOILETS OF HOWRAH GUEST HOUSE AT 6/5, G.T.ROAD, PANCHANANTALA MORE, HOWRAH MAIDAN, HOWRAH.

(WORKING OFFICE/GUEST HOUSE)

Tender No. : LICI/EZO/ENGG/2026-27/42 dated- 21.08.2026

CONDITIONS OF CONTRACT AND TECHNICAL SPECIFICATIONS
(THIS DOCUMENT IS TO BE STAMPED & SIGNED OF EACH PAGE BY LOWEST TENDERER ONLY AS & WHEN ASK FOR).

This document is a part of BID-II. The Earnest Money Deposit and Tender Document Fee are to be physically submitted, if the Tenderers avail the option of Demand Draft/Pay Order/Banker's Cheque/NEFT UTR No. etc at the following address by 17.30 hrs on 02.09.2026.

CHIEF ENGINEER
LIFE INSURANCE CORPORATION OF INDIA
EASTERN ZONAL OFFICE
ENGINEERING DEPARTMENT
HINDUSTHAN BUILDING
4, C. R. AVENUE, KOLKATA – 700 072

CONTRACTOR **CHIEF ENGINEER**

LIFE INSURANCE CORPORATION OF INDIA
EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
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CONTRACTOR **CHIEF ENGINEER**

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Information about e-tender

System Tender No. : LICI/EZO/ENGG/2026-27/42 date- 21.08.2026

1. Online bids are hereby invited for the works mentioned below through online e-Tendering System portal **http://www.tenderwizard.com/LIC** **from the intended contractors.**

Sr. No.	Name of Work	Estimated Cost (In Rs.)	Earnest Money Deposit (EMD)	Tender Document Fee(non- refundable)
1.	E-TENDER (PERCENTAGE RATE) FOR PROPOSED EXTERNAL & INTERNAL REPAIRING AND PAINTING WITH RENOVATION OF FLOORS & TOILETS OF HOWRAH GUEST HOUSE AT 6/5, G.T.ROAD, PANCHANANTALA MORE, HOWRAH MAIDAN, HOWRAH.	**42,81,324.70**	**Rs.86,000.00** (Rupees Eighty Six Thousand only)	**Rs. 590.00 including 18% GST.**

2. Possession of Digital Signature Certificate (DSC) and registration of the contractors on the portal i.e. **http://www.tenderwizard.com/LIC** is a prerequisite for e-Tendering.

3. Last Dates of various activities by bidder :-

i) Downloading of Tender Documents : **From 10.30 hrs on 21.08.2026 Upto 17.30 Hrs on 02.09.2026**

ii) Tender Closing Date & Time : **Upto 17.30 Hrs on 02.09.2026**

iii) Opening of **BID- I & BID- II (F.B)** : **On 03.09.2026 at 15.30 Hrs (Bid-I) & On 03.09.2026 at 15:30 Hrs. (Bid-II)**

For Registration and for further details on e-tendering, please visit website above mentioned portal (website) or below mentioned Helpdesk details.

Office Address :	**Help Desk Contact Details:**
E-Tender helpdesk #24, Sudha Complex, 03rd Stage, 04th Block, Basaveshwaranagara, Bangalore - 560079,	Mr. Kanchan Kumar, Mobile No: 8420265123 / 7488023861(Kolkata) Tel: 080-40482000/121/133/140 Mobile: 9686115304/9686115323 E-mail: lokesh.hr@antaressystems.com raghuprashanth@antaressystems.com

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KEY DATES

Sl. No.	Department Stage	Contractor Stage	Start Date and Time	Closing Date and Time
1		Downloading of Tender Document	**21.08.2026 from 10.30 Hrs**	**02.09.2026 up to 17.30 Hrs**
2		Online submission of tender documents	**21.08.2026 from 10.30 Hrs**	**02.09.20265 up to 23.59 Hrs**
3		Last date of submission of EMD & Tender document fees**, if tenderers avail the option through online NEFT/RTGS etc.**	**21.08.2026 from 10.30 Hrs**	**02.09.2026 up to 23.59 Hrs**
4		Last date of physical submission of EMD & Tender document fees, **if tenderers avail the option in form of DD/PO/MR/NEFT UTR No. in the office of LIC of India, EZO, Kolkata**.	**21.08.2026 from 10.30 Hrs**	**02.09.2026 up to 17.30 Hrs**
5	Opening of Tender processing fee, EMD bid (BID-I):	**-**	**On 03.09.2026 at 15:30 Hrs**	
6	Opening of financial bid (BID-II):	**-**	**On 03.09.2026 at 15:30 Hrs**	

The venue of the Physical Submission of BID-I (EMD & Tender document fees) :

Life Insurance Corporation of India
Eastern Zonal Office,
Engineering Department (4th floor),
"Hindusthan" Building,
4, C.R. Avenue,
Kolkata-700072.

NOTE : If the Tenderers avail the option through online NEFT/RTGS etc , a line of confirmation of the same with Transaction reference details , Name of Work /Tender reference details is to be send to ez_engineering@licindia.com before opening of the Tender.

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INSTRUCTIONS IN REGARD TO SUBMISSION OF TENDERS

NOTE: Tenderer should note that non-compliance of the following instructions will render the tender liable for rejection.

1. **Address to which the BID - I i.e. Earnest Money Deposit, Tender document Fee** by the tenderer **in a sealed envelope marked BID - I is to be submitted physically:**

   The Chief Engineer,
   Life Insurance Corporation of India,
   Eastern Zonal Office, Engineering Department (4th floor),
   "Hindusthan Buildings",
   4, C.R. Avenue, Kolkata - 700072.

2. Last date for receipt of tenders: As per e-tendering programme**.**

3. Tenderer should ensure that the tender is received before the due date and time specified in the e-tendering programme of online tender.

4. Tenderer should fill in all the relevant information in prescribed templates/forms and put his Digital signature on the relevant places as required in the e-tendering System.

5. **Tenderer should note that he is to quote percentage rates only in the e-tendering System**.

6. No liability whatsoever will be admitted nor claim allowed in respect of errors in the submitted tender due to missing / duplicate uploaded documents.

7. Proforma for Articles of Agreement should not be filled in by the tenderer. While the contract shall be deemed to have come into existence on issue of letter of acceptance to the successful tenderer, formal agreement shall be signed thereafter with the successful tenderer on non-judicial stamp paper of requisite value as per the proforma of Articles of Agreement.

8. Earnest Money accompanying the tender will be accepted only in the form of Demand Draft/Pay Order/Banker's Cheque/NEFT of any Nationalized Bank/Approved Scheduled Bank drawn in favour of "LIFE INSURANCE CORPORATION OF INDIA" payable at "**Kolkata**" / CROSSED DEMAND DRAFT/ Pay Order/ Banker's Cheque/NEFT of any of the Nationalized Banks / Approved Scheduled Banks drawn in favour of the **"LIFE INSURANCE CORPORATION OF INDIA"** payable at **"Kolkata"** Any tender, which is not accompanied by Earnest Money Deposit, shall be summarily rejected. No interest will be paid for the period during which the earnest money lies in deposit with the LIC of India.
9. The tender shall be accompanied by a certified true copy of Power of Attorney in favour of the signatory to the tender documents. If the tender is submitted on behalf of a firm, it must be signed either by all partners or person holding a valid power of attorney from all partners constituting the firm. The person signing the tender on

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behalf of another partner(s) or on behalf of a firm on Company shall attach with the Tender a proper Power of Attorney duly executed in his favour by such other person(s) or by all the partners in accordance with the Constitution of the Company / Articles of Association, stating that he has the authority to sign on behalf of such other person(s) of the firm or the Company as the case may be, in all matters pertaining to the contract including the Arbitration Clause. The tenderers can submit the scan copy of the same on the online portal.

10. **Contractors are warned that Cash, or Encashable Cheque, or Insurance Guarantee, or Fixed Deposit receipt in lieu of the aforementioned form of Earnest Money remittance will not be accepted.**

11. Tenders containing errors are liable to be considered non-bonafide at the discretion of the Chief Engineer.

12. **Tenderer should note that tender should remain open for consideration for a minimum period of THREE MONTHS from the date fixed for the receipt of tenders**.

13. The Life Insurance Corporation of India reserves the right to accept any tender or to accept tenders in part or to reject any or all tenders without assigning reasons thereof.

14. Contractors should fill in their **"PERCENTAGE RATE" (Below / at Par / Above) in the Price Bid on online portal in both FIGURES and WORDS.** Tenders containing the percentage rate only in figures are liable to be considered non-bonafide at the discretion of the Chief Engineer and entail forfeiture of Earnest Money Deposit.

Note:

IMPORTANT NOTE: Please note that if submitted documents filed by the Tenderer are found false/forged or fabricated during verification process and / or after opening of financial bid, not only Earnest Money Deposit will be forfeited in totality but also they will be debarred from LIC of India from participating of tendering for a period of 3 (three) years and such information will also be shared with other Organizations.

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INFORMATION & INSTRUCTIONS TO THE BIDDERS
FOR USING ONLINE ELECTRONIC TENDERING SYSTEM (eTS)

Special Conditions & instructions for using online Electronic Tendering System (eTS) through portal (website) http://www.tenderwizard.com/LIC adopted by Life Insurance Corporation of India (LIC), Eastern Zonal Office, Kolkata as given in the subsequent pages will over-rule the conditions stated in the tender documents, wherever relevant and applicable.

- **Registration of the Contractors/Bidders:** All the Contractors intending to participate in the tenders floated online using Electronic Tendering System (ETS) are required to get registered on the e-Tender Portal (website) http://www.tenderwizard.com/LIC

  After successful Registration on above mentioned portal, contractor will get a User ID and Password to access the website.

- **Viewing of Online Tenders:** The contractors/bidders can view tenders floated on online Electronic Tendering System (ETS) hereinafter referred as "e-Tendering System" through portal (website) at http://www.tenderwizard.com/LIC. They can view the details like Tender Notice, Terms and Conditions, drawing (if any) and any other information. To download through they need to login on to the above portal and can download the tender documents of an e-Tender.

- **Obtaining a Digital Certificate and its Usage**: On e-Tendering System the bids should be Encrypted and Signed electronically with a Digital Signature Certificate (DSC) to establish the identity of the bidder on online Portal. The Digital Signature Certificates (DSCs) are issued by an approved Certifying Authority, by the Controller of Certifying Authorities (CCA India), Government of India.

- The contractors may obtain Class III digital certificate from any Certifying Authority or Sub-certifying Authority authorized by the Controller of Certifying Authorities on the portal http://cca.gov.in. or may obtain information and application format and documents required for issue of digital certificate from our Service Provider for Electronic Tendering System (ETS):

E-Tender helpdesk
#24, Sudha Complex,
03rd Stage, 04th Block,
Basaveshwaranagara,
Bangalore - 560079,

Help Desk Contact Details:
Tel: 080-40482000/121/133/140
Mobile: 9686115304/9686115323
E-mail: lokesh.hr@antaressystems.com
raghuprashanth@antaressystems.com

Tenderwizard Help Desk Center, Kolkata
BD-52/A, Rabindra Pally, Kestopur Behind IDBI Bank
Kolkata-700101
Mr. Kanchan Kumar– 8420265123 / 7488023861

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- The Bid (Online Offer) for a particular e-Tender may be submitted only using the Digital Signature Certificate (DSC), In case, during the process of a particular e-Tender, the user loses his Digital Certificate (i.e. due to virus attack, hardware problem, operating system problem), he may not be able to submit the bid online. Hence, the users are advised to keep their Digital Signature Certificates in safe custody.

- The same procedure holds true for the authorized users in a private/Public limited company. In this case, the authorization certificate will have to be signed by the directors of the company.

- Bidders participating in e-tendering shall check his/her validity of Digital Signature Certificate before bidding in the specific work floated online at the e-Tendering Portal (website) through **http://www.tenderwizard.com/LIC**.

- **Submission of Earnest Money Deposit:**

- Earnest Money accompanying the tender will be accepted only in the form of Demand Draft/Pay Order/Banker's Cheque/NEFT of any Nationalized Bank/Approved Scheduled Bank drawn in favour of "LIFE INSURANCE CORPORATION OF INDIA" payable at "**Kolkata**" / CROSSED DEMAND DRAFT/ Pay Order/ Banker's Cheque/NEFT of any of the Nationalized Banks / Approved Scheduled Banks drawn in favour of the **"LIFE INSURANCE CORPORATION OF INDIA"** payable at **"Kolkata"** Any tender, which is not accompanied by Earnest Money Deposit, shall be summarily rejected. No interest will be paid for the period during which the earnest money lies in deposit with the LIC of India.

- Refund of Earnest Money Deposit to the unsuccessful bidders will be made through RTGS/NEFT.

- A scanned copy of Earnest Money Deposit in appropriate format as mentioned above should be uploaded mandatorily while Bid Preparation stage (as per the Key Dates mentioned in e-Tender and Tender document) and **original Demand Draft should be submitted to the Chief Engineer, Life Insurance Corporation of India, Eastern Zonal Office, Engineering Department (4th Floor), Hindusthan Buildings, 4, C.R. Avenue, Kolkata – 700072 in the sealed envelope (BID- I) on or before the due date mentioned in Key Dates of e-Tender, otherwise your BID-II will not be opened.**

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- **Submission of Tender Document Fees:**
- The Contractors have to submit a Demand Draft of requisite amount as mentioned in the particular e-Tender against the Tender Document fees of any of the Nationalized / Scheduled Banks drawn in the favour of the "**Life Insurance Corporation of India**" payable at **"Kolkata"** only, and not in the favour of any other Authority or Location.
- The scanned copy of the Demand Draft/ bankers cheque /Pay order / NEFT receipt against Tender Document Fees should be uploaded mandatory during Tender Submission stage (as per the due date mentioned in Key Dates of e-Tender and original Demand Draft should be submitted to the **Chief Engineer, Life Insurance Corporation of India, Eastern Zonal Office, Engineering Department (4th Floor), Hindusthan Buildings, 4, C.R. Avenue, Kolkata -700072 in the sealed envelope on or before the due date mentioned in Key Dates of respective e-Tender, otherwise your Tender will not be opened.**
- If the tenders are cancelled or recalled on any grounds, the tender document fees will not be refunded to the agency.
- The Eligible Bidders can download the Tender Document online from above e-Tendering Portal **http://www.tenderwizard.com/LIC** before the Tender closing date & time mentioned in the e-Tender floated.

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E-mail: ez_engineering@licindia.com
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LETTER TO CONTRACTOR FROM CHIEF ENGINEER

To, Date:

_____

_____

Dear Sir / Sirs,

Sub: E-TENDER (PERCENTAGE RATE) FOR PROPOSED EXTERNAL & INTERNAL REPAIRING AND PAINTING WITH RENOVATION OF FLOORS & TOILETS OF HOWRAH GUEST HOUSE AT 6/5, G.T.ROAD, PANCHANANTALA MORE, HOWRAH MAIDAN, HOWRAH. (Working Office/GH).

We hereby publish the TENDER on e-Tendering Portal (Website) through **www.tenderwizard.com/LIC** in **Electronic Mode** hereinafter referred as "**e-Tendering**" and consisting of following:

a. **BID I : EMD AND TENDER DOCUMENT FEES.**
b. **BID II : FINANCIAL BID**

Please note that copy of above e-Tender can be downloaded from above portal (website) and should be mandatorily submitted in **Online Electronic Mode** hereinafter referred as "**Online Offer**". The submission of Online offer duly Encrypted & Digitally Signed on above portal should be in prescribed Electronic Forms (Online) available on above portal for respective tender in Online Envelope(s) on or before **As per the Key Dates mentioned in the tender document and online portal for above tender.**

Tender document fee and **Earnest Money Deposit shall be submitted separately** in the following form:-**.**

a) **Tender document Fee** of **Rs 500/- +@ 18% GST i.e. Rs.90.00 = Rs. 590.00** (non-refundable) and **Earnest Money Deposit** of **Rs. 86,000.00** in the form of Crossed Demand Draft/ Pay order/ Bankers Cheque of any Nationalized/ Scheduled Bank drawn in favour of **"Life Insurance Corporation of India"** payable at **"Kolkata"**

(or)

b) **Tender document Fee** of **Rs 500/- +@ 18% GST i.e. Rs.90.00 = Rs. 590.00** (non-refundable) and **Earnest Money Deposit** of **Rs. 86,000.00** payment through NEFT/RTGS mode directly to LIC following Bank Account.

FOR BANK GUARANTEE SUBMISSION		FOR ONLINE NEFT/RTGS	
Name of Bank:	**: IDBI BANK LIMITED**	**Name of Bank:**	**: IDBI BANK LIMITED**
Branch	**: Esplanade Branch**	**Branch**	**: Esplanade Branch**
Account No.	**: 1270102000014580**	**Account No.**	**: 1270102000014580**
IFSC No.	**: IBKL0000135**	**IFSC No.**	**: IBKL0001270**
Account Type	**: Current**	**Account Type**	**: Current**
All BG shall be verified through SFMSmessage.			

NOTE : If the Tenderers avail the option through online NEFT/RTGS etc , a line of confirmation of the same with Transaction reference details , Name of Work /Tender reference details is to be send to ez_engineering@licindia.com OR NEFT/UTR No. and date receipt copies should be physically submitted to

CONTRACTOR **CHIEF ENGINEER**

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E-mail: ez_engineering@licindia.com
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our office EZO, Engg Dept. Kolkata in sealed envelope before opening of BID-I & II otherwise the same bidders to be disqualified.

c) BIDs will be received at the office of Chief Engineer at above address **on or before <u>As per the Key Dates</u>** and the e-Tenders will be opened at **<u>As per the Key Dates</u>** in the presence of contractors or accredited representatives, who wish to attend the online Tender Opening process. The bidders can view the Tender Opening details through their respective Login IDs on the above mentioned e-Tender portal (Website). The Tenderer should ensure that their tender is received **<u>Online Electronically</u>** on or before the due date and time as specified in **"Key Dates"** in the Tender Document and above mentioned Portal (website). **Please note that above e-Tendering System is an automatically time locked system which will be locked immediately as soon as due date and time is over and will not accept any offer after that. So, the tenderers are strictly advised to do their process well before the due date and time to avoid any such instances.**

d) The Guidelines to Submit tenders on Electronic Tendering System (ETS) is part of **BID -I** of the Tender document. The tenderers are advised to carefully read the above document for understanding of e-Tendering System. The above Annexure will supersedes all the terms & conditions mentioned for submission of tender in document.

e) The Life Insurance Corporation of India does not bind itself to accept the lowest or any tender.

Yours faithfully,

CHIEF ENGINEER

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LETTER FROM CONTRACTOR TO CHIEF ENGINEER

TO BE SUBMITTED ONLINE ON OR BEFORE ON As per the Key Dates

Date:

From:
……..

……..

……..

To
The Chief Engineer,
Life Insurance Corporation of India
Eastern Zonal Office
Hindusthan Building,
4, C.R. Avenue,
Kolkata - 700072

Sub: : E-TENDER (PERCENTAGE RATE) FOR PROPOSED EXTERNAL & INTERNAL REPAIRING AND PAINTING WITH RENOVATION OF FLOORS & TOILETS OF HOWRAH GUEST HOUSE AT 6/5, G.T.ROAD, PANCHANANTALA MORE, HOWRAH MAIDAN, HOWRAH. (Working Office/GH).

Dear Sir,

1) Having examined the Technical Specifications & Conditions of Contract , Schedule of Quantities, etc. included in the tender document for the **Percentage Rate Contract** relating to the above work, having visited/examined the site of the existing premises, having acquired the requisite information relating thereto as effecting the tender invited by you on behalf of the Life Insurance Corporation of India, I/We, the undersigned hereby offer to carry out the above mentioned work on Percentage Rate basis in strict accordance with the Contract Conditions and Specifications.

I/We, undertake to complete and deliver the whole of the works within a period as specified in Appendix to the Conditions of Contract from the date of issue of intimation from you that the tender has been accepted and upon receiving possession of the site. I/We shall be under the obligation to complete the entire work within the period of completion failing which to pay the sum as stated in the Appendix to the Conditions of Contract for every week that the works shall remain incomplete, damages as compensation subject to the conditions of contract relating to extension of time.

2) I/We enclose herewith my/our tender with an Earnest money remittance of **Rs. 86,000.00** in the appropriate format as specified in BID-I. I/We, hereby agree that part of this sum shall be forfeited by the Life Insurance Corporation of India in the event of my/our tender being accepted and I/We fail to execute Contract when called upon to do so.

CONTRACTOR **CHIEF ENGINEER**

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PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
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3) In the event of the tender being accepted, I/We, agree to the retention of my/our EMD as a part of Security Deposit and the balance amount of Security Deposit to be recovered at 7.5% of Gross Value of work done from my / our Running Account Bills.

OR

I/We, agree to furnish a lump sum Bank Guarantee for total Security Deposit or two Bank Guarantees each with 50% value from any Nationalized/Scheduled Bank at as per specimen given in **Annexure "B"** to Conditions of Contract, within 10 (ten) days of acceptance of tender. The Bank guarantee shall be from any Nationalised /Scheduled Bank preferably at or where a Branch/Division of LIC of India exists.

4) I/We, note that the Earnest Money Deposit of **Rs. 86,000.00** would be refunded to me/us.

a) On expiry of the validity of the tender or earlier at the discretion of Chief Engineer in case my/our tender is not accepted and
b) In case my/our tender is accepted, after I/We, furnish as mentioned above.

5) I/We, agree,

a) in case my/our tender is withdrawn before expiry of the validity period or before the issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the Department, in such case 25% of the EMD will be forfeited by the department.

b) in case my/our tender is accepted and the Security Deposit option is not submitted within the prescribed period or approved extended period, 50% of the EMD will be forfeited automatically without any notice.

c) in case of forfeiture of Earnest money as prescribed above [5(a) and 5(b)], the tender shall not be allowed to participate in the retendering process of the work.

Yours faithfully,

(SIGNATURE OF THE CONTRACTOR)
Name and Seal
NAME OF THE PARTNER OF THE FIRM
OR
NAME OF THE PERSON HAVING POWER OF ATTORNEY TO SIGN THE CONTRACT
(CERTIFIED TRUE COPY OF THE POWER OF ATTORNEY SHOULD BE ATTACHED)

CONTRACTOR **CHIEF ENGINEER**

LIFE INSURANCE CORPORATION OF INDIA
EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
AN ISO 9001:2015 CERTIFIED DEPARTMENT

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GST REGISTRATION DETAILS FORMAT

SR. No.	Requirement	Submissions
1.	Name of Construction Associate as per GST Registration Certificate	
2.	Address as per GST Registration Certificate	
3.	City	
4.	Police Station	
5.	Postal Code	
6.	Region / State (to provide complete State name)	
7.	Permanent Account Number	
8.	GST IN ID / PROVISIONAL ID Number (copy of acknowledgement is required)	
9.	Business nature as per Registration with GST	
10.	Service Accounting Code / HSN Code	
11.	Contact Person	
12.	Phone Number / Mobile Number	
13.	E-mail ID	
14.	Compliance Rating if updated by GST IN	

NB : The specific details should also be asked for all new contracts and it should be an integral part of the Contract Document.

As per GST Act, there is no such condition which makes him mandatorily register in the state where they are making supplies. Rather, GST registration should be obtained by a taxable person under GST in each of the State or Union Territory, from where the taxable supply of goods or services is made.

As such, vendor, if making inter-state supplies he shall charge IGST and if making intra-state supplies he shall charge CGST plus SGST/ UTGST in his invoice.

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CONDITIONS OF CONTRACT

1. INTERPRETATIONS:

1.1 In construing these Conditions, the Specifications, the Priced Schedule of Quantities, Tender and Agreement, the following words shall have the meanings herein assigned to them except where the subject or context otherwise requires:

1.2 "Employer" shall mean THE LIFE INSURANCE CORPORATION OF INDIA and his (their) **heirs, legal representatives, assignees and successors.**

1.3 "Chief Engineer" shall mean the person occupying the post of head of the Zonal Engineering Department of the Corporation.

1.4 "Corporation's Engineers" shall mean such Deputy Chief Engineers, Superintending Engineers and/or Executive Engineers of the Corporation, who shall from time to time be appointed by the Chief Engineer for supervising the work carried out by the Contractor or for any purpose in connection therewith:

1.5 The term "Site Engineer" shall mean the person appointed and paid by the Employer, acting under the order of the Corporation's Engineer to superintendent the work.

1.6 The Contractor shall mean the individual, firm or company whether incorporated or not, who is awarded the contract & shall include the legal representative of such individual or the persons composing such firm or company or the successors of such individual, firm or company & the permitted assignees of such individual, firm or company.

1.7 The "Site" shall mean the lands/buildings and/or other places on, in, into or 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.

1.8 "This Contract" shall mean the Articles of Agreement, these Conditions, the General Instructions to Contractor, the General Preambles to Schedule of Quantities, Special Conditions, the priced Schedule of Quantities, the Specifications, the Appendices, the Drawings and other related correspondence.

1.9 "Act of Insolvency" shall mean any act of insolvency as defined by the Presidency Towns Insolvency Act, or the Provincial Insolvency Act or any amending Statute.

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1.10 "Notice in Writing" or written notice shall mean a notice in written, typed or printed characters, sent (unless delivered personally or otherwise proved to have been received) by registered post to the last known private or business address or registered office of the addressee and shall be deemed to have been received when in the ordinary course of post it would have been delivered.

1.11 Words importing persons include Firms and Corporations, words importing the singular only also include the plural and vice versa where the context so requires.

1.12 The titles of the Clauses shall not affect or alter the meaning of Clauses and are solely for the purpose of facilitating reference.

1.13 The following abbreviations shall be followed for the designations of various LIC Officers:

DESIGNATIONS	**ABBREVIATIONS**
Executive Director (Engineering)	E.D.(E)
Zonal Manager	Z.M.
Chief Engineer	C.E.
Chief Architect	C.A.
Deputy Chief Architect	D.C.A.
Deputy Chief Engineer	Dy.C.E.
Superintending Engineer	S.E.
Senior Architect	S.A.
Executive Engineer	E.E.
Deputy Senior Architect	D.S.A.
Asstt. Secretary	A.S.

1.14 Wherever the words "approved", "directed", "as required", "selected" or words of like effect are used, it is to be understood that the approval/direction, requirement or selection of the Corporation's Engineer are intended unless otherwise specified.

1.15 The words "as described" shall mean the description in the Special Conditions, Specifications, General Instructions, Drawings etc. of this tender.

1.16 The words "allow" shall mean that the Contractor shall include in his rates for the particular matter referred to.

1.17 "Day Work" shall mean items of labour and/or materials which in the opinion of the Corporation's Engineer are not capable of being evaluated by the accepted method of measurement and analysis.

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2. SCOPE OF CONTRACT:

2.1 The Contractor shall carry out and complete the works in every respect in accordance with this Contract and in accordance with the directions and to the satisfaction of the Corporation's Engineer. The Corporation's Engineer may issue further drawings and/or written instructions, details, directions and explanation in regard to:

a. The variation or modification of the Design, quality of works or the addition or omission or substitution of any work;

b. Any discrepancy in the Drawings or between the Schedule of Quantities and/or Drawings and/or Specifications;

c. The removal from the site of any materials brought thereon by the Contractor and the substitution of any other material thereof;

d. The removal and/or re-execution of any work executed by the Contractor;

e. The dismissal from the work of any persons employed thereupon;

f. The opening up for inspection of any work covered thereupon;

g. The amending and making good of any defects under relevant Clause giving details of defects after completion.

2.2 The Contractor shall forthwith comply with and duly execute all works comprised in such Instructions subject to the provisions of relevant specific conditions of the Contract. In the event of any dispute or difference of opinion the contractor shall refer the matter within 7 (seven) days of the issue of such instruction to the Chief Engineer whose decision shall be final & binding.

3. DISCREPANCIES:

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

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3.2 The several documents forming the Contract are to be taken as mutually explanatory of one another, and the order of precedence shall be as follows;

a) Special conditions
b) General preambles to schedule of quantities
c) General instructions
d) Conditions of contract

3.3 In case of discrepancies between the Schedule of Quantities, the specifications and/or drawings the following order of precedence shall be observed

- Description in Schedule of Quantities
- Specifications of relevant Trade
- Drawings; detailed drawings shall be followed in preference to small scale drawings and figured dimension in preference to scale.
- Indian Standard Specifications of `BIS'

4. DRAWINGS AND SCHEDULE OF QUANTITIES:

4.1 Two complete sets of the Drawings and Specifications and Schedule of Quantities shall be furnished by the employer to the contractor. Two copies of the additional Drawings, if any, shall be furnished within such time as the Chief Engineer may consider reasonable which may be necessary for execution of any part of the work. Such copies shall be kept on the work site and the CE and his representatives shall at all reasonable times have access to the same and they shall be returned to the EE by the Contractor on completion of the contract.

This Contract and the signed Drawings, Specifications and Schedule of Quantities shall remain in the custody of the Employer.

5. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY FOR EXECUTION OF WORK:

5.1 Contractor shall provide everything necessary for the proper execution of the work according to the intent & meaning of the Drawings, Priced Schedule of Quantities and Specifications taken together, whether the same may or may not be explicitly shown or described therein provided that the same can reasonably be inferred there from and if the Contractor finds any discrepancy therein he

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shall immediately and in writing refer the same to the CE whose decision shall be final and binding on the Contractor.

5.2 The Contractor shall supply, fix and maintain at his cost during the execution of any work all the necessary Centering, Scaffolding, Staging, Planking, Timbering, Strutting, Shoring, Pumping, Fencing, Boarding, Watching and Lighting by night as well as by day, required not only for the proper execution and protection of the said work but also for the protection of the Public and the safety of any adjacent Roads, Streets, Cellars, Vaults, Ovens, Pavements, Walls, Houses, Buildings and all other erections, matters or things and the Contractors shall take down and remove any or all such Centering, Scaffolding, Staging, Planking, Timbering, Strutting, Shoring, etc., as occasion shall require or when ordered to do so, and shall fully reinstate and make good all matters and things disturbed during the execution of the work to the satisfaction of the Corporation's Engineer.

6. AUTHORITIES NOTICES AND PATENTS:

6.1 The Contractors shall conform to the provisions of any Acts of the Legislature relating to the work and to the Regulations and Bye-Laws of any Authority and or any Water, Lighting and other Companies and/or Authorities with whose system the structure is proposed to be connected and shall before making any variations from the Drawings or Specifications that may be necessitated by so conforming give to the CE written notice specifying the variations proposed to be made and the reasons for making them and apply for instructions thereon. In case the Contractor shall not within 7 (seven) days receive such instructions, he shall proceed with the work conforming with the Provisions, Regulations or Bye-Laws in question.

6.2 In particular, the Contractors shall be responsible to Register themselves under the Contract Labour (Regulation & Abolition) Act 1970 and Rules there under and any amendment thereto; they must comply with and carry out all the provisions and obligations under the said Act and Rules and furnish all information to Employer as may be required by it and shall indemnify the Employer against any penalties/claims arising from any default on their part.

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6.3 The Contractor shall arrange to give all notices required by the said Acts, Regulations or Bye-Laws to be given to any Authority and to pay to such Authority or to any Public Office all fee that may be properly chargeable in respect of the work and lodge the receipts with the Employer.

6.4 The Contractors shall indemnify the Employer against all claims in respect of patent, rights, and shall defend all actions arising from such claims unless he has informed the Chief Engineer before any such infringement and received his permission to proceed and shall himself pay all royalties, licence fees, damages, costs and charges of all and every sort that may be legally incurred in respect thereof.

6.5 The Contractor should observe that his work shall not cause any nuisance to the Public in general and to the neighbouring occupants in particular.

6.6 Should the Contractor desire to work on Sundays, Holidays and during night hours, permission in writing from the Corporation's Engineer must be obtained in time. It shall be the responsibility of the Contractor to obtain permission from Civil Authorities, if necessary.

7. SETTING OUT WORK:

7.1 The Contractor shall set out the work and shall be responsible for the true and perfect setting out of the same and for the corrections of the positions, levels, dimensions and alignment of all parts thereof. If at any time any error shall appear during the progress of any part of the work, the Contractor shall at his own cost rectify such error, if called upon, to the satisfaction of the Corporation's Engineer. The Contractor must not commence work until the outlines of the building and Centre line layout have been pegged out and approved by the Corporation's Engineer.

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8. CONTRACTOR IMMEDIATELY TO REMOVE OFFENSIVE MATTER:

8.1 All soil, filth or other matter of an offensive nature taken out of any trench, sewer, drain, cesspool or other place shall not be deposited on the surface, but shall be at once carted away by the Contractor to some pit or place provided by him.

9. MATERIALS AND SAMPLES:

9.1 All the materials stores and equipment required for the full performance of the Contract must be provided through normal trade channels and must include applicable import duties and all applicable taxes and other charges, if any.

They shall be of approved quality and the best of their kind available and the Contractor must be entirely responsible for the proper and efficient carrying out of the work. The Contractor shall order all materials required for the execution of the work from local as well as from outside sources if situation warrants so as early as necessary to the satisfaction of the Corporation's Engineer and to ensure that such materials are on site well ahead of requirement for use in the work. Non-availability of materials in local market will not be an issue behind slow progress of work.

9.2 Before ordering such materials, the Contractor shall get samples of the materials approved well in time. Preference shall be given to ISI marked products and approved brands of requisite quality as mentioned in the tender. For materials, which are neither approved brands nor ISI marked, the same shall be got tested from approved laboratories at the Contractor's cost before approval. Approved brand and ISI marked product will also be tested if desired by the CE and if the test results are satisfactory, the cost of testing shall be borne by the Employer otherwise by the Contractor. No claim will be allowed for delay to the progress of work caused by test. If called upon by the Executive Engineer the Contractor shall produce proof for having arranged for the supply of materials well in time.

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9.3 The Contractor shall furnish well in time before work commences at his own cost, any samples of workmanship that may be called for by the Corporation's Engineer for his approval and any further samples in case of rejection until such samples are approved. Such samples when approved shall be the minimum standard for the work to which they apply. In case of items like suspended ceiling, partitions, etc. typical sample panels or proto-types shall be erected in position for approval before undertaking work. Rates quoted shall cover for such preliminary work.

10. ACCESS:

10.1 Any of the Corporation's Engineers or any persons authorized by any one of them shall at all reasonable time have free access to the work and/or the workshops, factories or other places where materials are being prepared or constructed for the Contract and also to any place where the materials are lying or from which they are being obtained and the contractor shall give every facility to all of them necessary for inspection and examination and test of the materials and workmanship. Except the representatives of the Public Authorities, no person shall be allowed on the work at any time without the written permission of the Corporation's Engineer.

If any work is to be done at a place other than the site of the work, the Contractor shall obtain the written permission of the Corporation's Engineer for doing so.

11. CONTRACTOR'S SUPERVISION & MINIMUM REQUIREMENT OF SUPERVISING STAFF:

11.1 The Contractor shall either himself supervise the execution of the contract or may appoint a supervising staff at site to receive instructions from Corporation's Engineers. Any directions, instructions or notices given by the Corporation's Engineer to such supervisor(s) shall be deemed to be given to the contractors.

12. DISMISSAL OF WORKMEN:

12.1 The Contractor shall, on the instruction of the Corporation's Engineer, immediately dismiss from the work any person employed thereon, who may, in the opinion of the

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Corporation's Engineer, be unsuitable or incompetent or who may misconduct himself and such person shall not be again employed or allowed on the work without the permission of the Corporation's Engineer.

13. DATES OF COMMENCEMENT AND COMPLETION:

13.1 The "Date of Commencement" shall be as stated in the Work Order and the Contractor shall thereupon and forthwith begin the work and shall regularly proceed with and complete the same on or before the "Date of Completion" stated in the Work Order, subject to the provisions for extension of time hereinafter contained.

14. ASSIGNMENT:

14.1 The whole of the work included in the Contract shall be executed by the Contractor and the Contractor shall not directly or indirectly transfer, assign or underlet the Contract or any part, share of interest therein nor shall he take a new partner without the written consent of the CE and no subletting shall relieve the Contractor from the full and entire responsibility of the Contract or from the active superintendence of the work during its progress.

15. DEVIATION, VARIATION, EXTRA/DEVIATED ITEMS AND PRICING:

15.1 The Contractor should note that unless otherwise stated, the tender is strictly on Percentage Rate basis and his attention is drawn to the fact that rates for each and every item should be correct, workable and self supporting. The quantities in the Schedule of Quantities approximately indicate the total extent of work and no variation i.e. additions, omissions or subtractions shall vitiate the Contract. No liability shall attach to the Employer for any error therein or variation there from.

15.2 The contractor may when authorized and shall when directed, in writing by the CE or the Corporation's Engineers, whom the CE may for that purpose appoint, add to, omit from, make alterations in, substitutions for, or vary the works shown upon the Drawings or described in Specifications or included in the priced Schedule of Quantities but the Contractor shall make no additions, omissions, alterations, substitutions or variations without such authorization or direction. A verbal authority or direction by the CE, if

Confirmed by the contractor in writing within 7 (seven) days, be deemed to have been given in writing.

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15.3 The rates of such altered, additional or substituted works shall be determined in accordance with the following.

a) The net rates or prices in the original tender shall determine the valuation of the extra work where such extra work is of similar character and executed under similar conditions as the work priced therein.

b) The net price of the items in the original tender shall determine the value of the items omitted. However, if omissions vary the conditions under which any remaining items of the work are carried out or if the amount of any omission relative to the amount of the whole of the Contract works or to any part thereof shall be such that in the opinion of the Chief Engineer, the net rate or price contained in the Priced Schedule of Quantities or Tender or for any item of work involves loss or expenses beyond that reasonably contemplated by the Contractor and is by reason of such omission rendered unreasonable or inapplicable, the Chief Engineer shall fix another rate or price as in the circumstance he shall think reasonable and proper.

c) If the rate for any altered, additional, or substituted item of work is not specified in the schedule of quantities, the rate for that item shall be derived from the rate for the nearest similar item specified therein.

d) If the rate for altered, additional or substituted item of work cannot be determined in the manner specified above, then such items of work shall be priced on the basis of coefficients of labour and materials as given in the latest CPWD rate analysis handbook and rates for labour and materials wherever applicable shall be the market rate prevailing at the time of execution.

e) Where such co-efficient are not available in C.P.W.D. rate analysis, the actual Labour/Materials involved and recorded by the LICI Engineer in executing the items shall be considered.

f) Where extra work cannot be properly measured or valued, the Contractor shall be allowed "Day Work" prices at the net rates stated in the Tender or the Priced Schedule of Quantities or, if not so stated, then in accordance with the local "Day

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Work" rates and wages for the district, provided that in either case vouchers specifying the date and time (and if required by the LICI Engineer the names of workmen employed) and materials incorporated be delivered for verification to the LICI Engineer or his representative at or before the end of the week following that in which the work has been executed. The LICI Engineer is not bound to recognize the cost of materials furnished in vouchers; the CE at his discretion will fix the price of such materials based upon market value.

g) While fixing rates of extra items 15% (Fifteen percent only) shall be allowed over & above the basic rate of material (without GST) T &P, Water Charges & labour to cover all supervision, overheads, profits and all other applicable taxes/cess. GST on works contract will be paid separately.

h) For all extra items of work, the contractor should submit to the concerned Corporation's Engineer the necessary particulars along with his analysis and the rate he proposes to claim for consideration within a period of 4 (four) weeks from the time of cropping up of any authorized extra / deviated item. He shall also ensure that all the authorized claims are included in the final bill. If the contractor fails to submit his claim within the stipulated period or the period duly extended by the Corporation's Engineer, then the CE shall proceed to fix the rate for the item(s) and the same shall be final and binding on the contractor.

i) The Contractor shall note that Extra/Deviated items claim and/or any other claim whatsoever if submitted after submission of his Final Bill will not be entertained and considered by the Employer. The Contractor shall not be allowed to make any Additions/ Alterations/ Revisions / Changes/ Modifications/ Variations in the final bill, after the final bill is submitted by him.

16. SUB-CONTRACTORS:

16.1 All specialist Merchants, Tradesmen and others, executing any work or supplying, fixing any goods for which provisional sums are included in the Schedule of Quantities and/or Specifications, who may be nominated or selected by the CE, who shall be the final authority are hereby declared to be Sub-Contractors and are herein referred to as nominated Sub-Contractors.

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16.2 No nominated Sub-contractor shall be employed on or in connection with the work against whom the Contractors shall make reasonable objection or (save where the CE and the Contractor shall otherwise agree) who will not enter into a Contract providing:-

a. That the nominated Sub-Contractor shall indemnify the Contractor against the same obligation in respect of the Sub-Contractor as the Contractor is under, in respect of this Contract;

b. That the nominated Sub-Contractor shall indemnify the Contractor against claims in respect of any negligence by the Sub-Contractor or his servants or agents or any misuse by him or them of any scaffolding or other plant or the property of the Contractor or under any Workmen's Compensation Act in force.

17. THIRD PARTY LIABILITY, DAMAGE TO NEIGHBOURING PROPERTY, LOSS OF MATERIAL AND WORKMEN'S COMPENSATION:

17.1 The Contractor shall be responsible for all injury to persons, animals or things, and for all damage to structural and/or decorative part of property which may arise from the operations or neglect of himself or of any Sub-contractor or any of his Sub-Contractor's employees, whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of his Contract. This Clause shall be held to include inter-alias, any damage to Building, whether immediately adjacent or otherwise and any damage to roads, streets, footpaths, bridges, or ways as well as all damage caused to the building, and the works forming the subject of this Contract by frost, rain, wind or other inclemency of the weather. The Contractor shall fully indemnify the Employer and hold him harmless in respect of all and any expenses arising from any such injury or damage to persons or property as aforesaid and also in respect of all and any claim made in respect of injury or damage under any acts of Government or otherwise and also in respect of any award or compensation or damages consequent upon such claim.

17.2 The Contractor shall fully indemnify the employer against any loss, damage or deterioration for whatever reason, of all materials brought at site and especially material supplied by or paid for partly or wholly by the employer.

17.3 The Contractor shall reinstate all damage and loss of every sort mentioned in this Clause so as to deliver up the whole of the Contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damage to the property of the third parties.

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17.4 The Contractor shall fully indemnify the Employer against all claims which may be made against the Employer by any member of the Public or other third party in respect of anything which may arise in respect of the works or in consequence thereof.

17.5 The contractor shall at his own expense arrange to effect from the date of commencement & maintain till the date of virtual completion of contract, with any licensed general insurance company, a ***POLICY OF INSURANCE(Contractor's All Risk Policy)***to cover all such risks detailed above viz. loss, damage & third party liability etc. The policy shall be of an amount as mentioned in Appendix to Conditions of contract and in the joint names of the employer & contractor and shall be deposited with the employer and renewed as required from time to time during the currency of the contract.

17.6 The Contractor shall also fully indemnify the Employer against all claims which may be made upon the Employer, whether under the ***WORKMEN'S COMPENSATION ACT*** or any other ***STATUTE*** in force during the currency of this Contract or at Common law in respect of any Employee of the Contractor or any Sub-Contractor and shall at his own expense effect and maintain until the Virtual completion of the work, with "licensed General Insurance Company" a ***POLICY OF INSURANCE*** of adequate amount in the joint names of the Employer and the Contractor against such risks and deposit such policy or policies with the employer & renew the same as required from time to time during the currency of the Contract.

17.7 The Contractor shall be responsible for anything, which may be excluded from the Insurance Policies above referred to, and also for all other damage to any property arising out of or incidental to the negligence or defective carrying out of the Contract.

17.8 The amount of insurance to be taken for the above policies will be jointly decided between the contractor and the employer before issue of acceptance letter based on the tendered cost, nature of work, location of site, local hazards etc.

17.9 In default of the Contractor insuring as provided above, or having insured failing to renew the same as required the Employer on his behalf may so insure/renew and may deduct the premiums paid from any monies due or which may become due to the Contractor together with penalty as the CE deems appropriate.

17.10 The Contractor shall also fully indemnify the Employer in respect of any costs, charges or expenses arising out of any claim or proceedings at law and also in respect of any award of compensation of damages arising there from.

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17.11 The Employer shall be at liberty and is hereby empowered to deduct fully the amount of any damages, compensation costs, charges and expenses arising or accruing any such claim of damage from any sum or sums due or to become due to the Contractor.

18. DELAY AND EXTENSION OF TIME:

18.1 If the works be delayed due to any of the following:

a) by force majeure ,

b) by reason of any exceptionally inclement weather,

i) by reason of proceedings taken or threatened by, or disputes with, adjoining or neighbouring owners, or public authorities,

ii) by the work, or delays, of other Contractors or Tradesmen engaged by the Employer,

c) by reason of any additional work or instruction ordered by the employer,

i) by reason of Civil Commotion, local commotion of workmen or strike or lock-out affecting any of the building trades,

d) in consequence of the Contractor not having received in due time necessary instructions from the CE for which he shall have specifically applied in writing,

a) from other causes which the CE may certify as beyond the Control of the Contractor,

b) by reason of non-payment of interim certificate at specified time, Then upon the happening of any such event causing delay, the contractor shall immediately, give notice thereof in writing to the Corporation's Engineer, but shall nevertheless use constantly his best endeavors to make good this delay.

18.2 Request for extension of time shall be made by the contractor at the earliest of the event causing delay.

18.3 In case of strike or lockout the Contractor shall give written notice thereof to the CE as soon as possible but he shall nevertheless constantly use his

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LIFE INSURANCE CORPORATION OF INDIA
EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
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endeavours to prevent delay and shall do all that may reasonably be required to the satisfaction of the CE to proceed with the work.

18.4 The CE shall make a fair and reasonable assessment of the delay and grant extension of time accordingly. Such extension shall be communicated to the contractor by the Corporation's Engineer immediately within 30 (Thirty) days of the date of receipt of request for extension. Non-application by the contractor for extension shall however not be a bar for giving fair and reasonable extension which shall be as decided by the CE.

18.5 The decision of the CE as communicated by the Corporation's Engineer to the contractor on the extension of time shall be final & binding.

18.6 No claim in respect of compensation or otherwise, howsoever arising, as a result of extension granted under the above conditions shall be admissible.

19. <u>COMPENSATION IN THE FORM OF PENALTY FOR DELAY OF WORK :</u>

19.1 If the Contractor fails to complete the work by the date of completion stated in the "Appendix to Condition of Contract" or within time properly extended under Clause (18) hereof and the CE certifies in writing that in his opinion the same ought, reasonably so, to have been completed, the Contractor shall pay or allow the Employer compensation as mentioned in the " Appendix to condition of contract" as "Compensation in the form of penalty for delay of work" for delay of the work " for the period during which the said works shall so remain incomplete and the Employer may deduct such damages from any money due to the Contractor. In case liquidated damages in accordance with the above provision accrue to maximum limit as mentioned in the Appendix to the Conditions of the Contract, the Chief Engineer shall be at liberty to rescind the Contract and to get it completed entirely at the risk and cost of the Contractor through any other agency he decides to appoint. All extra expenses incurred shall be recoverable from the money due to Contractor or lying to his credit with the Employer against the present or any other Contract.

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
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20. FAILURE BY CONTRACTOR TO COMPLY WITH CE'S INSTRUCTIONS :

20.1 If the Contractor after receipt of written notice from the CE, requiring compliance with such further Drawings and/or his instructions, fails within 7 (seven) days to comply with the same the CE may employ and pay other persons to execute any such work whatsoever as may be necessary to give effect thereto and all additional costs incurred in connection therewith shall be deducted from any money due or to become due to the Contractor.

21. MEASUREMENT OF WORKS &PAYMENT OF BILLS :

21.1 MEASUREMENT OF WORKS : The measurement of works shall be recorded in EXCEL format by the Construction Associates at the site as works progress. Any approved authorised extra/deviated work executed during the period will also be measured in EXCEL format. The EXCEL sheet measurement will be submitted by the Construction Associate to the LIC site Engineer in both hard and soft format. The soft copy to be forwarded through e-mail to the concerned site engineer. The measurements then will be checked 100% by LIC site engineer and if required, the same shall be corrected by LIC site engineer to establish that the measurement so given by the Construction Associate is in order and complete in all respects.

All concealed measurements shall be verified by LIC site engineer and test checked by Higher Officials, wherever required, before its concealing and hard copy duly signed by Construction Associate and LIC engineers shall be maintained/preserved.

If there is any variation of measurement after the test checking, the particular measurement will be re-entered by the LIC site engineer and then the corrected EXCEL measurement will be converted to PDF format. A print of such PDF formatted measurement sheet will be taken and signed by the LIC site engineer, Test Checking engineer and the Construction Associate on the hard copy.

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
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Abstract of bill in EXCEL & PDF will be submitted by Construction Associate. The Construction Associate will have their key in the quantities of the corresponding item from the PDF formatted measurement sheet.

The Construction Associate on receipt of the corrected hard copy of Abstract of bill from LIC will prepare their tax invoice on their letter head and submit to LIC of India for further processing of their bill for release of payment.

21.2 Should the contractor not attend or neglect or omit to send such representative, then the Measurements taken by the LICI Engineer or representative shall be taken to be correct measurements of the work. Wherever not specified in the "Schedule of Quantities or elsewhere" the mode of measurements shall be in accordance with the latest brochure issued by the Indian Standards Institutions (now renamed as Bureau of Indian Standards) on "Method of measurement of Building works".

21.3 The Contractor or his representative may, at the time of measurement, take such notes and measurements as he may require.

21.4 All authorized extra work. Omissions and all variations made without the Chief Engineer's knowledge, if subsequently sanctioned by him in writing, shall be included in such measurement.

21.5 If the contractor or his authorised representative does not record the measurements periodically for the completed works, then the site Engineer shall take measurements after giving notice in writing of at least 3 (three) days. Measurements recorded in the absence of Contractor shall be intimated with a copy of such measurements to the contractor. If the contractor fails to countersign or record objections within a week from the date of measurement, then such measurement recorded in absence by the Site Engineer shall be deemed to be accepted by and binding on the Contractor.

21.6 The Contractor shall, without any extra charge provide all assistance with every appliance, labour and other things necessary for taking measurements (either

LIFE INSURANCE CORPORATION OF INDIA
EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
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by him or by site Engineer) and recording levels including test checking of such measurements by any person authorised by the Employer.

21.7 All work shall be measured net as fixed in its place. All measurements of 'cutting' shall be held to include for the consequent wastage on the materials used.

21.8 Except where any general or detail description of the works 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 for which procedure is not covered in the specification, measurement shall be taken in accordance with the relevant Standard Method of measurement issued by BIS and if for any item no such standard is available then a mutually agreed method shall be followed.

21.9 Measurements of all hidden/concealed items of work including extra items if any, such as, work in foundations including excavations, plinth filling, masonry, concrete etc. steel in all R.C.C. work, pipe to be encased etc. shall be jointly recorded by the contractor and Site Engineer or his authorised representative before they are covered up. Immediately after the work is ready for measurements, Contractor will give specific notice to the Site Engineer for recording the measurements. If the Site Engineer or his authorised representative fails to record the measurements, the Contractor will refer the matter to the Corporation's Engineer for instructions, but in no case shall cover up work without the latter's permission.

22. PAYMENTS:

22.1 The contractor shall be paid by the Employer, from time to time, by installment under Interim Certificate to be issued by the LICI Engineer to the Contractor on account of the work executed, when in the opinion of the LICI Engineer, work to the approximate value named in the Appendix to the conditions of Contract as

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
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"Value of work for Interim certificate" (or less at the reasonable discretion of the LICI Engineer) has been executed in accordance with this contract, subject however to a retention of the percentage of such value mentioned in Appendix to the Conditions of Contract hereto as "Retention percentage on account of Security Deposit". The Interim Certificate shall be based upon interim Bills of Running Account Bills to be prepared by the Contractor and supported by the detailed measurements. The LICI Engineer may include in the Interim Certificate such amount as he may consider proper on account of materials delivered upon the site by the contractor for use in the work, after satisfying price of materials on basis of vouchers/bills submitted by the contractor.

In case any material have been supplied by the Employer to the contractor in connection with the work, necessary recovery for the same shall be effected from the bills of the contractor by the CE at the issue rates of such materials as stipulated while calling for tenders and in other cases at a stock rate or market rates of such materials, whichever is higher. The contractor will, however, not be entitled to modify his rates for items of work requiring use of such materials and when the work has been virtually completed and the CE shall have certified in writing that it has been so completed on the basis of detailed measurements and after obtaining written endorsement by the CE that the CE/ Deputy Chief Engineer has made a final Scrutiny and that there are no disputed items, rates of quantities, the contractor shall be paid by the Employer in accordance with certificate to be issued by the CE the sum of money named in the Appendix as "Installment after Virtual Completion" and the contractor shall be entitled to the payment of the final bill in accordance with the final certificate to be issued in writing by the Deputy Chief Engineer with the approval of the CE with expiration of the period referred to as "Defects Liability Period", in the Appendix to Conditions of Contract hereto from the date of Virtual Completion or as soon after the expiration of such period as to work shall have been finally completed and all defects made good according to the true intent and meaning hereof, whichever shall last happen.

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
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Provided always that the issue by the LICI Engineer of any certificate during the progress of the works or at after their completion shall not relieve the contractor from his liability under Clause (2) in cases of fraud, dishonesty or fraudulent concealment relating to the work of materials or to nay matter dealt with in the certificate in case of all defects and insufficiencies in the work or materials which a reasonable examination would not have disclosed. No certificate of the Deputy Chief Engineer or Executive Engineer shall of itself be conclusive evidence that any work or materials to which it related are in accordance with the contract.

The Chief Engineer may make any correction in previous certificate which shall have been issued by the Executive Engineer/Superintending Engineer.

Payment upon the LICI Engineer's certificate shall be made within the periods named in the Appendix "Period for honouring Interim Certificate" after such a certificate has been delivered to the Employer.

The CE shall have power to withhold any certificate if the work or any parts thereof are not being carried out to his satisfaction.

22.2 Provided always that the issue by the Corporation's Engineer of any Certificate during the progress of the works or after their completion shall not relieve the Contractor from his liability in cases of fraud, dishonesty or fraudulent concealment relating to the work or materials or any matter dealt with in the Certificate in case of all defects and insufficiencies in the work or materials which a reasonable examination would not have disclosed. No Certificate of the Corporation's Engineer shall of itself be conclusive evidence that any work or materials to which it related are in accordance with the Contract.

22.3 Payment upon the Corporation's Engineer's Certificate shall be made within the periods named in the Appendix "Period for honoring Interim Certificate" after such a Certificate has been delivered to the Employer;

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
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22.4 The CE shall have power to withhold any Certificate if the work or any parts thereof are not being carried out to his satisfaction. However, if the final certificate is not issued within the period as mentioned under Clause No.22.5, 26 due to Audit para by CTE etc., the amount involved for such items of deficient work as decided by Chief Engineer would be with held. The same would be allowed as agreed upon by the CTE & the Chief Engineer and the final certificate would accordingly be issued and final bill passed. For such withheld amount, a simple interest @ 6% per annum shall be paid to the contractor along with the said payment. Such interest will be calculated from the last date (as mentioned in Appendix to Conditions of Contract) for honouring final certificate till the date of payment.

22.5 The measurements and valuation in respect of the Contract shall be completed within the "period of Final Measurement" stated in the Appendix or if not so stated then within six months of the completion of the contract works as defined in Clause (26) hereof. No further claim shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished.

22.6 The final certificate shall be based on the submission of final measurements or overall measurements of the work (to be taken if so directed by Corporation's Engineer) with all relevant details similar to 22.1 above. The CE may direct the Contractor to resubmit details if the same are found incomplete to issue the final certificate and his decision to accept the details is final and binding on the Contractor. Final Certificate shall be issued by the CE after the conditions are met with as per 22.4, 22.5, 22.6 and 26 and contractor's submission of **No Claim certificate cum receipt** as per the Proforma given in Appendix to Conditions of Contract.

23. UNFIXED MATERIALS AND EQUIPMENT:

23.1 All tools, plants and materials brought to the site by the Contractor shall vest in the Employer and shall not be removed from the site of works except by

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
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permission of the Corporation's Engineer in writing. The Employer shall have a lien on these materials and plants.

24. REMOVAL OF IMPROPER WORK:

24.1 The Corporation's Engineer shall during the progress of the work have power to order in writing from time to time the removal from the work within such reasonable time or as may be specified in the order, of any materials, which in their opinion are not in accordance with the Specifications or instructions, the substitution of proper materials and the removal and proper re-execution of any work executed with materials or workmanship not in accordance with the Drawings and Specifications or Instructions and the Contractor shall forthwith carry out such an order at his own cost. In case of default on the part of the Contractor to carry out such an order, the CE shall have the power to employ other persons to carry out the same and all expenses consequent thereon or incidental thereto as certified by the EE shall be borne by the Contractor and may be deducted from any amounts due or that may become due to the Contractor.

25. VIRTUAL COMPLETION:

25.1 The work shall be completed in accordance with the Contract and to the entire satisfaction of Chief Engineer. All unused materials, tools, plants, scaffoldings, temporary structures, hutments and things belonging to the Contractor shall be removed and the site of works cleared of rubbish and all waste materials by the contractor at his own expenses and delivered up tidy to the employer. After completion of the work, the contractor will serve a written notice to the CE to this effect. The Chief Engineer after satisfying himself shall thereupon approve the virtual completion. The Defect Liability Period shall commence from the date of such certification.

26. DEFECTS AFTER COMPLETION:

26.1 The defects, shrinkage, settlements or other faults, which may appear within "the Defects Liability Period, stated in the "Appendix to the Conditions of Contract" or if not stated then, within 12 (twelve) months after virtual completion of the work, arising on account of materials or workmanship not in accordance with

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LIFE INSURANCE CORPORATION OF INDIA
EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
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the Contract shall, upon the directions in writing of the Corporation's Engineer and within such reasonable time specified therein, be amended and made good

by the Contractor at his own cost unless the CE shall decide that he ought to be paid for such amendment and for making good, and in case of default, the CE may employ and pay other persons to amend and make good such defects, shrinkage, settlement or other faults, and all damages, loss and expenses consequent thereon or incidental thereto shall be recovered from any monies due or that may become due to the Contractor. The CE may in lieu of such amending and making good by the Contractors, deduct from any money due or that may become due to the Contractor, a sum to be determined by the CE equivalent to the cost of amending such work. Should any defective work have been done or materials supplied by any Sub-Contractor employed on the work, who has been nominated or approved by the CE as provided in Clause No.16 the Contractor shall be liable to make good in the same manner as if such work or material had been done or supplied by the Contractor and been subjected to the provisions of this Clause and Clause No.2 hereof. The Contractor shall remain liable under the provision of this Clause notwithstanding the payment of any Certificate or the passing of any accounts.

27. PROVISIONAL SUMS, APPLICATION OF:

27.1 For all the work listed under items for which provisional sums are provided in the tender, the CE reserves the right to invite separate tenders or select or order from any manufacturer or firms at his discretion and reserves to himself the right of paying direct to persons or firms for any such work. The Contractor will not have any claims over these items, but if tenders are invited for such items, he will also be invited to quote along with others.

27.2 If ordered by the CE, Contractor shall be required to carry out provisional sum items at the same conditions and rates as applicable for this Contract.

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
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PHONE: 033-22129077/22127443,
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28. OTHER PERSONS ENGAGED BY THE EMPLOYER:

28.1 CE reserves the right to execute any work not included in this Contract, which he may desire to have carried out, by other persons and the Contractor shall allow all reasonable facilities and the use of his scaffolding and plant for the execution of such work, but is not required to provide any special plant or materials for the execution of such work except by special arrangement with the Employer. Such work shall be carried out in such manner as not to impede the progress of the work included in the Contract and the Contractor shall not be responsible for any damage or delay which may happen to or be occasioned by such work.

29. SUSPENSION BY THE CONTRACTOR:

29.1 If the Contractor except on account of any legal restraint upon the Employer preventing the continuance of the work, shall suspend the work or in the opinion of the CE shall neglect or fail to proceed with due diligence in the performance of his part of the Contract or if he shall make default in respect of Clause No.2, the Employer shall have the power to give notice in writing to the Contractor requiring that the work be proceeded within a reasonable manner and with reasonable dispatch. Such Notice shall purport to be a notice under this clause. After such notice is given, the Contractor shall not be at liberty to remove from the site of the work or from any ground contiguous thereto any plant or materials belonging to him, which shall have been placed thereon for the work and the Employer shall have a lien upon all such plant and materials to subsist from the date of such notice being given until the notice shall have been complied with. If the Contractor shall fail for 7 (seven) days after such notice given to proceed with the work as therein prescribed, the CE may proceed as provided in Clause No.31.

30. DETERMINATION OF CONTRACT BY EMPLOYER:

30.1 If the Contractor (being an individual or a firm) commit any "Act of Insolvency" or shall be adjudged as Insolvent or shall make an assignment or composition

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
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of the greater part in number or amount of his creditors or shall enter into a deed of assignment with his creditors, or being an Incorporated Company shall have an order made against him or pass an effective resolution for winding up either compulsorily or subject to the supervision of the Court or Voluntarily or if the official Assignee of the Contractor shall repudiate the Contract or if the official Assignee or the Liquidator in any such winding up shall be liable within 7 (seven) days after notice to him requiring him to do so, to show to the reasonable satisfaction of CE that he is able to carry out and fulfill the Contract and if required by the CE to give security therefore or if the Contractor (whether an Individual Firm or Incorporated Company) shall suffer execution to be issued or if the Contractor shall suffer any payment under this Contract to be attached by or on behalf of any of the creditors of the Contractors or if the contractor shall assign or sublet the Contract without the consent in writing of the CE first obtained or if the Contractor shall charge or encumber this Contract or any payment due or which may become due to the Contractor there under, or if the CE shall certify in writing that in his opinion the Contractor,

a. has abandoned the Contract, or

b. has failed to commence the work, or has without any lawful excuse under these conditions suspended the progress of the work for 7 (seven) days after receiving from the CE written notice to proceed, or

c. has failed to proceed with work with such due diligence and failed to make such due progress as would enable the work to be completed within the time agreed upon, or

d. has failed to complete the work within the stipulated date including authorized extensions or

e. has failed to remove the materials from the site or to pull down and replace the work within 7 (seven) days after receiving a written notice from the Corporation's Engineer that the said materials or work were condemned or rejected or

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
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f. has neglected or failed persistently to observe and perform all or any of the acts, matters, or things, by this Contract to be observed and performed by the Contractor for 7 (seven) days after written notice shall have been given to the Contractor requiring the Contractor to observe or perform the same, or

g. has to the detriment of good workmanship or in defiance of the CE's instructions to the contrary sub-let any part of the Contract.

then and in any of the said causes, the CE notwithstanding any previous waiver, after giving 7 (seven) days notice in writing to the Contractors, determine the Contract, but without thereby affecting the powers of the CE or the obligations and liabilities of the Contractor, the whole of which shall continue to be in force as fully as if the contract has not been so determined and as if the work subsequently executed had been executed by or on behalf of the Contractor. And further, the Employer, his agents or servants, may enter upon and take possession of the work and all plant, tools, scaffolding, sheds, machinery, steam and other power, utensils and materials, lying upon the premises or the adjoining lands or road and use the same as his own property or may employ the same by means of his own servants and workmen in carrying on and completing the work or by employing any other Contractors or other person or persons to complete the work, and the Contractor shall not in any way interrupt or do any act, matter, or thing to prevent or hinder such other Contractor, other persons or person employed for completing and finishing or using the materials and plant for the work. When the work shall be completed or as soon thereafter as convenient, the CE shall give a notice in writing to the Contractor to remove his surplus materials and plant and should the Contractor fail to do so within a period of 14 (Fourteen) days after receipt thereof by him, the Employer may sell the same by public auction and shall give credit to the Contractor for the amount so realized. The CE shall thereafter ascertain and certify in writing under his hand what (if anything) shall be due or payable to or by the Employer for the value of the said plant and materials so taken possession of by the Employer and the expense or loss which the

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
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Employer shall have been put to in getting the work to be so completed, and the amount, if any, owing to the Contractor and the amount, which shall be so certified shall thereupon be paid by the Employer to the Contractor or by the Contractor to the Employer, as the case may be and the Certificate of the CE shall be final and conclusive between the parties.

31. TERMINATION OF CONTRACT BY CONTRACTOR:

31.1 If payment of the amount payable by the Employer under any Certificate of the EE shall be in arrears as unpaid for 60 (sixty) days after notice in writing requiring payment of the amount with interest of aforesaid shall have been given by the Contractor to the Employer, or if the work be stopped for six months under order of the CE or by any injunction or other order of any Court of Law, then and in any of the said cases, the Contractor shall be at liberty to determine the Contract by notice in writing to the Employer and he shall be entitled to recover from the Employer payment for all the work executed and for any loss, he may sustain upon any plant or material supplied or purchased or prepared for the purpose of the Contract.

31.2 In arriving at the amount of such payment, the net rates contained in the Contractor's original tender shall be followed or where the same may not apply, valuation shall be made in accordance with Clause No.15 hereof.

32. DETERMINATION OF CONTRACT DUE TO ABANDONMENT OR REDUCTION IN SCOPE OF WORK:

32.1 If at any time after the acceptance of the tender, the Employer shall for any reasons whatsoever not require the whole or any part of the works to be carried out, the CE shall give notice in writing to the Contractor who 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 whole of the works.

The Contractor shall be paid at contract rates for the full amount of work executed and in addition:

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
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PHONE: 033-22129077/22127443,
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a. The cost at site of all surplus approved materials collected for incorporation in the work, which the Contractor does not wish to retain and which shall thereafter become the property of the Employer.

b. Where the Contractor desires to retain the surplus of approved materials (excepting materials supplied by the Employer or obtained in Employer's name, which shall, in any case, be returned to the Employer) the cost of handling and cartage charges for removal from the site to a reasonable distance not exceeding 25 kms.

c. If upon the determination of the Contract under this condition, the Contractor is of the opinion that he has suffered hardship by reason of the operation of these conditions, he may refer the circumstances with full details to the Chief Engineer, who on being satisfied that such hardship exists or has existed, shall make such allowance, if any as in his opinion is reasonable, and his decision shall be final, conclusive and binding.

33. DISPUTES TO BE FINALLY DETERMINED BY CHIEF ENGINEER:

33.1 The Instruction, Decision, Opinion, Direction, Certificate or Valuation of the CE with respect to all or any of the matters under Clause (2), (3), (5), (6), (9), (14), (15), (18), (23), (27), (30), (31) and (32) hereof (which matters are herein referred to as EXCEPTED MATTERS) shall be final and conclusive and binding on the parties hereto and shall be without appeal. Any other Decision, Opinion, Direction, Certificate or Valuation of the CE or any refusal of the CE to give any of the same shall be subject to the right of Arbitration and review as given under Clause No.35.

34. SECURITY DEPOSIT AND PERFORMANCE GUARANTEE:

34.1 Amount towards Security deposit shall be calculated as per details given in "**APPENDIX TO CONDITIONS OF CONTRACT**" in the tender. Security Deposit can be either in the form of Bank Guarantee or DD.

The EMD shall be retained as part of Security Deposit and balance Security Deposit shall be accumulated through retentions from Running Account Bills at

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7.5% (maximum) of gross amount of bill. In case of Bank Guarantee option, the

Contractor shall furnish one Bank Guarantee for full amount of Security deposit valid till end of defects liability period OR, two Bank Guarantees of like amounts each equal to half the Security deposit; one valid till virtual completion and the other till end of defects liability period.

34.2 Performance Guarantee if required shall be as mentioned in "Appendix to Conditions of Contract" and in the form of Bank Guarantee valid up to scheduled date of completion plus six month claim period.

34.3 The Bank Guarantee/s shall be from any Nationalized / Scheduled Bank preferably at place of work site or Zonal Headquarter of LIC within whose jurisdiction the work falls or where a Branch/Division of the Corporation exists.

34.4 Bank Guarantee/s (BGs) against Security Deposit (SD) and Performance Guarantee (PG) shall be executed as per the specimen pro-forma at Annexure B and C. Bank guarantee/s against Security Deposit and Performance guarantee shall be submitted within 21 (twenty one) days from the date of acceptance letter.

34.5 In case of failure by the contractor to furnish the Bank Guarantee against Performance Guarantee as per Cl.34.2 by the stipulated date or extended date if any, Employer shall without prejudice to any other right or remedy available in law, be at liberty to cancel the tender and forfeit the Earnest Money absolutely.

34.6 **50% of the Security Deposit shall be refunded after the certificate of virtual completion is issued to the contractor & provided that the employer has no claim for forfeiture of part or whole of the said deposit.**

34.7 **Balance 50% of Security deposit will be refunded to the contractor after the satisfactory completion of the defects liability period, subject to deductions for any appropriations thereof required to be made by the employer as per the conditions of contract.**

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34.8 **If one Bank Guarantee in lieu of total Security Deposit is furnished, the same will be released only after the successful completion of Defects Liability period subject to any appropriations as aforesaid.**

34.9 **If two Bank Guarantees in lieu of Security deposit are furnished, the First Bank Guarantee will be released after the certificate of Virtual completion is issued to the contractor and second shall be released after the satisfactory completion of Defects Liability Period subject to any appropriations as aforesaid.**

34.10 Bank Guarantees towards Performance Guarantees (where applicable) shall be released after the virtual completion of work as given in appedix to conditions of contract.

34.11 Contractor shall keep the Security Deposit and Performance Guarantee, where applicable, replenished to its full value whenever any recovery or appropriation there from occurs. The employer reserves the right to do so from any money(s) due to the contractor lying with them.

34.12 The Contractor should note that no interest will be allowed on any part of the Security deposit.

34.13 No deductions will be effected from the bills when the total security deposit is paid in the form of Bank Guarantee(s) and the E.M.D shall be refunded after acceptance of Bank Guarantee(s).

34.14 In the event of failure by the contractor to submit Bank Guarantee(s) by the specified / extended date, recovery of Security deposit shall be effected from the R.A Bills. However, where the contractor fails to furnish Bank Guarantee against Performance Guarantee the matter shall be dealt with as per Cl. 35.5 above.

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34.15 In all cases of Bank Guarantees, there shall be further provision of claim period of 6 months. If the contract period gets extended for any reason whatsoever, the contractor shall obtain the required extensions to the Bank Guarantee(s).

35. <u>SETTLEMENT OF DISPUTES, ARBITRATION:</u>

35.1 All disputes and differences of any kind whatsoever arising out of or in connection with the Contract or the carrying out of the work (whether during the progress of the work or after its completion and whether before or after determination, abandonment or breach of the Contract) shall be referred to a Standing Committee consisting of 1 Retired High Court Judge and 2 Members from Engineering fraternity retiring as senior Engineer from Government/ Government Undertaking. The Committee will be constituted by the Chairman, LIC of India.

35.2 Any claims arising out of the contract will be placed before the Committee once in a quarter and decision will be conveyed to both the contractually agreed parties.

35.3 Either of the party on being dis-satisfied with the decision may approach to a Three Member Arbitrial Tribunal, one each will be appointed by Either Party and 2 appointed Arbitrators will appoint 3rd Arbitrator who will act as the Presiding Arbitrator.

35.4 Executive Director (Engg) will appoint the Arbitrator on behalf of LIC of India. The Arbitration shall be conducted in accordance with Arbitration And Reconciliation Act 1996 as amended by the Arbitration and Reconciliation (Amendment) Act 2015 (3 of 2016) and any other amendment thereafter if any.

<u>35.5 The Contractually Agreed Parties hereby also agree that the Arbitration under this Clause shall be a Condition Precedent to any Right of Action in Law of Court under the Contract.</u>

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GENERAL INSTRUCTIONS TO CONTRACTORS FOR BUILDERS WORK

1. DRAWINGS:

1.1 Drawings shall be kept open for inspection at places as mentioned in the letter to the contractor from the Chief Engineer. Drawings generally include the site plan, floor plans, elevations and sections of the proposed work.

2. INSPECTION OF SITE:

2.1 The Tenderer shall visit and examine the site of work and satisfy himself as to the nature of the existing roads or other means of communication, the character of the soil and of the excavations, the correct dimensions of the work and facilities for obtaining materials and shall obtain generally his own information on all matters affecting the execution of the work. No extra charge made, in consequence of any misunderstanding or incorrect information on any of these points or on the grounds of insufficient description will be allowed. All expenses incurred by the Tenderer in connection with obtaining information for submitting this tender including his visits to site and efforts in compiling the Tender shall be borne by the Tenderer and no claims for reimbursement thereof shall be entertained.

3. WHOLE WORK TO BE COMPLETED IN THE SPECIFIED COMPLETION PERIOD:

3.1 The whole work is to be completed within the completion period stated in the Appendix to Conditions of Contract or the extended date of completion, if any. The Contractor will be required if necessary, to work overtime to complete the work by the stipulated date. No extra will be allowed on the Contract sum for such overtime work.

4. BENCHES:

4.1 The Contractor is to construct and maintain proper benches to indicate the inter-section of all main walls in order that the lines and levels may be accurately checked at all times. The Contractor shall provide suitable stones with flat tops and build the same in concrete for temporary or permanent benchmarks. All the pegs for setting out the work and fixing the necessary levels required for the execution thereof shall, if desired by the Corporation's Engineer likewise, be built in masonry at such places and in such a manner as the Corporation's Engineer may determine. Contractors' rates shall cover for these factors.

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5. DRAWINGS ON SITE:

5.1 The Drawings maintained on the site are to be carefully mounted on boards of appropriate size and covered with a coat of approved transparent varnish or laminated at the cost of the Contractor. They are to be protected from the ravages of termites, ants, silver fish and other insects.

6. ORDER OF WORK:

6.1 The Chief Engineer reserves the right to fix the order in which the various items of work involved in this Contract is to be executed and Contractor shall comply with the same. There shall be no extra claims on account of this.

7. WORKMANSHIP:

7.1 The Work calls for a high standard of workmanship combined with speed.

8. REJECTED WORKMANSHIP OR MATERIALS:

8.1 Any workmanship, or materials not complying with the specific requirements or approved samples, or which have been damaged, contaminated or deteriorated, must be removed immediately from the site and replaced at the Contractor's expense as directed.

9. WATCHING AND LIGHTING:

9.1 The Contractor from the time of being placed in possession of the site must allow for watching, lighting and protecting the work, the site and surrounding, properly by day and night on all days including Sundays or other holidays, at his own cost.

10. WATER:

10.1 The rates quoted by the Contractors shall include for providing all water required for the work including that required by special tradesmen and Sub-Contractors and pay all charges required by Local Municipal or other Authorities. Water must be clean, fresh, pure and free from earth, vegetable or organic matters, acid or alkaline substance in solution or suspension. The Contractors shall make their own arrangements for water supply. If supply from the Municipality or other local bodies be

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inadequate, the Contractor should provide tube well or wells or open well at his own cost. The Contractors must execute any temporary plumbing and pay all fees and charges. All health regulations in force shall be strictly observed by the Contractor and pay all necessary charges.

However, water is available in surplus with LIC, the same may be permitted for use in work and in such case necessary recovery will be effected from contractor's bill as detailed below: **Recovery of water charges from Contractors bill if used from LIC source @ 0.25% of the Gross value of work done.**

11. <u>ELECTRICITY</u>:

11.1 The Contractor shall arrange with the concerned Electricity Supply Authorities for a temporary meter and supply to the site and shall provide all temporary wiring, power and lighting points for the whole of the works and clear away when no longer required. He shall pay all charges for the same and for electricity consumed, including that consumed by Sub-Contractors. **The Contractor should submit disconnection & no dues certificate from the supplying authority along with his final bill.**

However, where existing source of Electricity is available in surplus with LIC, the same may be permitted for use in work and in such case necessary recovery will be effected from contractor's bill as detailed below:

Recovery of Electricity charges from Contractors bill if used from LIC source @ 0.25% of the Gross value of work done.

12. <u>OFFICE ACCOMMODATION FOR CONTRACTOR'S STAFF</u> :

12.1 The Contractor shall, at his cost, provide, fit-up and maintain in an approved position proper office accommodation for his representative and staff, which offices shall be open at all reasonable hours to receive instructions, notices or communications and clear away on completion and make good all work disturbed.

13. <u>SECURITY AND PROTECTION</u>:

13.1 The Contractor shall at his cost, provide any necessary temporary enclosures, gates, entrances, etc. for the protection of the work and materials and for

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altering and adapting same as may be required and removing at completion of the works and making good all works disturbed.

13.2 During inclement weather, the Contractor shall suspend concreting or plastering for such time as the Corporation's Engineer may direct and shall protect such work in course of execution from damage by approved measures.

13.3 The work be suspended by reason of rain, strike, lock-outs or any other cause, the Contractor shall at his cost take all precautions necessary for the protection of the work and shall make good any damage arising from any of these causes.

13.4 The Contractor shall at his expense cover-up and protect from injury from any cause, all new work and supply all temporary doors protection to windows, and any other requisite protection for the whole work executed, whether by himself or special tradesmen of Sub-Contractors and any damage caused must be made good by the Contractor at his own expense.

13.5 All fences, trees, shrubs, grasses, lawn and other surfaces around the buildings or approaches thereto, which are required to be maintained are to be kept free from damage due to operations in connection with the work, at Contractor's expense.

13.6 The Contractor shall, at his expense, protect all projecting sills, jambs, copings, stone or concrete treads and mouldings and all concrete steps, wood work and joinery and the like from injury during the progress of the work.

13.7 The Contractor shall at his cost, protect joinery and make good all damages to the same from any cause whatsoever during the performance of the Contract and leave perfect to the satisfaction of the CE at completion. Before giving possession, the Contractor must see that all doors, windows and ventilation etc. work easily and shall make all necessary adjustments for such smooth working.

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14. SANITATION:

14.1 The Contractor shall at his cost provide adequate latrine facilities and keep the same in a clean and hygienic condition to the satisfaction of the Public Health Authorities and shall cause such latrine and night soil to be cleared away whenever necessary and shall make good all works disturbed by these conveniences.

15. MINIMUM WAGES ACT:

15.1 The Contractor shall pay rates of wages and observe hours of work and conditions of employment to existing rules under Minimum Wages Act. Further, it shall be Contractor's responsibility to ensure that he pays his workmen wages, which are not lower than the minimum prescribed by the Union Government and State Government in which area this Contract, is being operated.

16. SHEDS FOR MATERIALS:

16.1 The Contractor shall at his cost provide and maintain proper approved sheds for the storage and protection of materials etc. and other work that may be executed on the site including the tools and materials of Sub-Contractors and remove on completion. Sheds for storage of Cement are to have floors raised from the ground.

17. WORKS AND SITE TO BE KEPT AND DELIVERED UP CLEAN:

17.1 All shavings, cuttings and other rubbish as it accumulates from time to time during the progress of the work and at completion, including that of Sub-Contractor and special tradesman to be cleared and carted away. All rejected materials shall be removed. Contractor's quoted rates shall allow for these factors.

18. USEFUL EXCAVATED MATERIALS:

18.1 Any sand, gravel, moorum or rock taken from excavation will remain the property of the Employer and in the event of it not being allowed to use in the work, the Employer reserves the right to dispose it off in any way he wishes or to direct the Contractor to cart it away as ordinary materials.

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18.2 Should suitable sand or gravel or moorum or rock be found in the excavations and the Contractor be allowed to use the same in the work, in place of materials to be brought by him from outside he will be required to pay the Employer the full market value of the same.

19. SIGN BOARD AND HOARDINGS:

19.1 The Contractor shall not affix or place any placards or advertisement of any description or permit the same to be affixed or placed in or upon any hoarding, gantry, buildings or structure other than that approved by the Chief Engineer.

20. SCIENTIFIC AND MEASURING INSTRUMENTS:

20.1 Theodolite, levelling instruments, prismatic compass/chain, steel and metallic tapes and all other surveying instruments found necessary on the works, shall be provided by the Contractor at his expense for the due performance of this Contract as instructed by the Corporation's Engineer.

21. TOOLS FOR MASONS:

21.1 Every bricklayer or plasterer on the work shall be provided with suitable level, battens, trowels, wooden floats and breaking hammers for cutting bricks and templates, to enable him to carry out the work in a neat and workman like manner and each gang of brick layers or plasterers not exceeding six in number shall be provided with a suitable measuring rule, a plumb bob, a spirit level and a square in addition to the above mentioned, all to be to the approval of the Site Engineer.

22. CONTRACTOR'S MISTERIES AND SUPERVISORS:

22.1 The Contractor's Masson and the Supervisors on the works shall carry with them a suitable measuring rule, a measuring tape, a spirit level, a plumb bob and a square and shall check the work of the bricklayer, plasterers, and carpenters and joiners to see that the work is being done according to the Drawings and Specifications. The Corporation's Engineer/Supervising Staff will use any and all measuring instruments or tools belonging to the Contractor as he chooses, while checking the work executed or being executed on the works.

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23. NO OVERLOADING OF SLABS:

23.1 Floors of buildings under construction shall not be loaded by stacks of materials during construction without the prior approval of Corporation's Engineer. It is important that no load comes on the reinforced concrete floors until they are at least three weeks old and at no time must the load placed upon them exceed the load for which they are designed.

24. ALTERNATIVE ITEMS:

24.1 In regard to alternative items, if any, specified in the Schedule of Quantities, Contractor should note that the Employer reserves the right to order the Principal item or its alternatives at the CE's discretion.

25 ATTENDANCE ON SUB-CONTRACTORS:

25.1 Co-ordination: The Contractor shall be responsible for the co-ordination of all the work including that of Sub-Contractors, for arranging runs of all services and working to the requirements and layout of the specialist trades, in all matters necessary for the complete execution of the work.

25.2 Rates quoted by the Contractor shall be inclusive of all attendance on Sub-Contractors or other Contractors nominated by the Employer. Contractor must allow for provision of the use of his scaffolding to Sub-Contractors and for its retention until such time all relevant Sub-Contract works are completed.

25.3 The Contractor shall accept liability for and bear the cost of the supply of all necessary water, electricity, lighting, watching etc. for the Sub-Contractors work.

25.4 The Contractor must allow in his rates for making good any holes and chases left by the Sub-Contractors or other Contractors nominated by the Employer before the Builder's Work is completed and handed over

25.5 The Contractors shall, at all times, give access to workmen employed by the local or other authorities or any men directly employed on the buildings and to provide such parties with proper, sufficient, and if required, special scaffolding, hoists and ladders and provide them with water and lighting, and leave or make any holes, grooves etc. in any work directed by the Chief Engineer, as may be required, to enable such workmen to lay or fix pipes, electric wiring, special fittings etc. Contractor's quoted rates shall allow for these factors.

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26. OCCUPATION BY EMPLOYER:

26.1 The Employer reserves the right to occupy the works by sections as completed, as may be considered by the Chief Engineer both practicable and reasonable and without hindrance to the Contractor's progress.

27. TAXES, DUTIES, LEVIES AND DEDUCTION AT SOURCE:

27.1 The Contractors shall be responsible to pay all statutory levies/taxes imposed by the State and Central Government from time to time. It is deemed that the rates quoted by the contractor for each item of works includes all applicable taxes except GST on works contract which shall be reimbursed by LICI as applicable from time to time as per notification of Govt. of India.

27.2 Deduction at source of Income Tax, all other statutory taxes as applicable and Labour cess shall be made by LIC of India as per statutory provisions prevailing from time to time, from the Running Account / Final Bills and remitted tothe concerned Taxation Authorities/State Government on behalf of the contractor.

27.3 The invoices submitted by the vendor should have their GST no. clearly printed on it. The tax amount should be clearly shown in the invoice. The vendor should also mention LIC's GSTIN no on the invoice uploaded by them on GST portal.

FOR WEST BENGAL GSTIN NUMBER : 19AAACL0582H1ZJ

27.4 The vendor needs to display the invoice on the GST portal and remit the tax to the Govt. within specified period.

27.5 The measurement along with the abstract are to be checked, corrected and accepted by the vendor and then only invoice with zero correction will be raised and uploaded by the vendor on GST portal.

27.6 **The vendor should quote their rate considering all taxes/duties/levies/ labour welfare cess etc. but excluding GST as applicable which will be paid extra at the rate prevailing at the time of billing. It is also advised to quote the rate after considering the input tax credit advantage and adjusting / deducting the same in the quoted rate/amount.**

27.7 GST on works contract will be paid extra along with Bill payment as per applicable rate of GST at the time of billing.

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APPENDIX TO GENERAL INSTRUCTIONS TO CONTRACTORS

Name and Location of the proposed work:

NAME OF WORK:- E-TENDER (PERCENTAGE RATE) FOR PROPOSED EXTERNAL & INTERNAL REPAIRING AND PAINTING WITH RENOVATION OF FLOORS & TOILETS OF HOWRAH GUEST HOUSE AT 6/5, G.T.ROAD, PANCHANANTALA MORE, HOWRAH MAIDAN, HOWRAH.

(WORKING OFFICE/GUEST HOUSE)

LOCATION OF WORK

LIFE INSURANCE CORPORATION OF INDIA

HOWRAH GUEST HOUSE(METROPOLITAN BUILDING) AT 6/5, G.T.ROAD, PANCHANANTALA MORE, HOWRAH MAIDAN, HOWRAH

CERTIFICATE

Certified that the Percentage rate quoted after actually visiting the sites of work and acquainting with working condition & above by all the terms & conditions of the tender.

(SIGNATURE OF THE CONTRACTOR)

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ANNEXURE A

PROFORMA FOR ARTICLES OF AGREEMENT

ARTICLES OF AGREEMENT made at.....this.....day of .....20..... between THE LIFE INSURANCE CORPORATION OF INDIA, a body corporate constituted and established by the Life Insurance Corporation Act, 1956 (Act 31 of 1956) and having its Central Office at "Yogakshema", Jeevan Bima Marg, Mumbai and its Zonal Office at ..... hereinafter called the Employer (which expression shall include its successors and assignees wherever context or meaning shall so require or permit) of the one part and M/s ……(hereinafter called **"The Contractor"**) of the other part.

WHEREAS the Employer is desirous of constructing the…….and has prepared drawings and specifications and the Schedule of Quantities which have been signed by or on behalf of the parties hereto.

AND WHEREAS the Contractor has agreed to execute upon and subject to the conditions and instructions set forth herein (hereinafter referred to as **"the said Conditions")** the works shown upon the said drawings and /or described in the said Specifications and included in the said Abstract Schedule of Quantities at the item rates therein set forth amounting to the contract sum of Rs…….. herein after referred to as **"the said contract Amount".**

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. In consideration of the said Contract Amount to be paid at the times and in the manner set forth in the said conditions, the contractor shall upon and subject to the said Conditions execute and complete the works shown upon the said Drawings and described in the Specifications and/or the priced Schedule of Quantities.
2. The Employer shall pay the contractor the said Contract Amount or such other sum as shall become payable for the items and in the manner hereinafter specified in the said conditions.

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3. The said Conditions and Appendices thereto shall be read and construed as forming part of this Agreement, and the parties hereto shall respectively abide by and submit themselves to the conditions and perform the Agreement in their part respectively in such conditions contained.

4. All disputes arising out of or in any way concerned with this Agreement shall be deemed to have arisen in_____and only the Courts in _____shall have jurisdiction to determine the same.

5. The contract comprises:-
   i) Tender Documents Serial Pages……..
   ii) Subsequent Correspondence Serial Pages……
   iii) Architectural Drawings Serial Pages ……..

6. Only ( ) alterations have been made in these documents and as evidence that these alterations were made before the execution of Contract Agreement, they have been initialed by the contractor and.....
   _____Engineer, _____ Zone, Life Insurance Corporation of India _____. The said officer ishereby authorised to sign and initialon the Employer's behalf, the documents forming part of this contract.

7. IN WITNESS WHEREOF THE Official seal of the LIFE INSURANCE CORPORATION OF INDIA, _____ ZONE, was thereto affixed and signed on its behalf by the Chief Engineer and by _____ on behalf of the Contractor/s on the dates respectively mentioned against their signatures in the presence of the witnesses whose signatures are also appended.

In the presence of

CHIEF ENGINEER
FOR AND ON BEHALF OF THE
LIFE INSURANCE CORPORATION OF INDIA

1. Signature : .....
Name :.....
Address : .....

Date:…….

2. Signature : .....
Name : .....
Address : .....

1. Signature : .....
Name :.....
Address : .....

FOR AND ON BEHALF OF THE CONTRACTOR
M/S.....
Date : .....

CONTRACTOR **CHIEF ENGINEER**

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ANNEXURE-B

LIFE INSURANCE CORPORATION OF INDIA

(Refer Clause No. 35 of Conditions of Contract)

FORM OF BANK GUARANTEE IN LIEU OF SECURITY DEPOSIT

IN INDIVIDUAL CONTRACTS

To

THE LIFE INSURANCE CORPORATION OF INDIA

In consideration of the Life Insurance Corporation of India having its _____ Zonal Office at _____ in the State of _____ (hereinafter called **'the Corporation'** which expression shall unless repugnant to the subject or context include its successors and assignees) having agreed under terms and conditions of contract (vide its acceptance letter No._____ dated_____) made between _____ (hereinafter called the said Contractor) and the Corporation in connection with _____ (hereinafter called **'the said contract'**) to accept a Deed of Guarantee and Indemnity as herein provided for Rs._____ from the _____ in lieu of the Security Deposit to be made by the contractor and/or in lieu of the deduction to be made from the Contractor's bills, for the due fulfillment by the said contractor of the terms and conditions contained in the said contract, we the _____ (hereinafter referred to as **'the said Bank'**) and having our office at _____ do hereby undertake and agree to indemnify and keep indemnified the Corporation from time to time to the extent of Rs._____ (Rupees _____ only) against any loss or damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Corporation by reason of any breach or breaches by the said contractor in respect of the said contract or of any of the terms

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
AN ISO 9001:2015 CERTIFIED DEPARTMENT

and conditions contained in the said contract, or in respect of all its claims for money and / or material found due and recoverable from the said contractor and to unconditionally pay the amount claimed as such by the Corporation on demand and without demur to the extent aforesaid.

2. We, the said Bank further agree that the Corporation shall be the sole judge of and as to whether the said contractor has committed any breach or breaches of any of the terms and conditions of the said contract and the extent of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Corporation from time to time on account thereof and the decision of the Corporation in this respect shall be final and binding on us.

3. The Corporation shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or Indemnity from time to time to vary any of the terms and conditions of the said contract or to extend time of performance by the said contractor, or to postpone for any time and from time to time any of the powers exercisable by it against the said contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said Contract or securities available to the Corporation and the said Bank shall not be released from its liability under these presents by any exercise by the Corporation of the liberty with reference to the matters aforesaid or by reason of time being given to the said contractor or any other forbearance, act or omission on the part of the Corporation or any indulgence by the Corporation to the said contractor or of any other matter or thing whatsoever, which under the law-relating to sureties would but for this provision have the effect of so releasing the Bank from its liability.

4. It shall not be necessary for the Corporation to proceed against the contractor before proceeding against the Bank and the Guarantee and Indemnity herein contained shall be enforceable against the said Bank, notwithstanding any security which the corporation may have obtained or obtain from the contractor shall at the time when proceedings are taken against the Bank hereunder be outstanding or unrealized.

CONTRACTOR **CHIEF ENGINEER**

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5. Notwithstanding anything contained in any of the foregoing clauses the liability of the Bank under this Guarantee shall not exceed Rs. _____ (Rupees _____ only). The guarantee shall remain in force till_____. If any extension of time be granted to

the contractor, we undertake to extend the guarantee with the consent of the contractor. Unless a claim or demand under this guarantee is made or presented to the Bank within six months from the expiry date, all the rights of the Corporation under this Guarantee shall cease and the Bank shall be released and discharged from all liability hereunder.

6. We, the said bank lastly undertake not to revoke this guarantee and indemnity during its currency except with the previous consent of the Corporation in writing and agree that any change in the constitution of the said contractor or the said Bank shall not discharge our liability hereunder.

For and on behalf of the Bank

(Name and Designation)

The above Guarantee is accepted by the
LIFE INSURANCE CORPORATION OF INDIA.

For and on behalf of the LIC of India
(Name and Designation)

Dated:

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Note No.1 □ : FILL IN AS APPLICABLE

A) For Proprietary concerns:-

Shri _____ son of _____ resident of _____ carrying on business under the name and style of _____ at _____ (hereinafter called **'the said contractor'** which expression shall unless the context requires otherwise include his heirs, executors, administrators and legal representative).

OR

B) For Partnership concerns:-

1. Shri _____
   son of _____
   resident of _____

2. Shri _____
   son of _____
   resident of _____

carrying on business in partnership under the name and style of _____ of _____ at _____ (hereinafter collectively called **'the contractor'** which expression shall unless the context requires otherwise include each of them and their respective heirs, executors, administrators and legal representatives)

OR

C) For companies :-

M/S / Shri _____ a company under the Companies Act 1956 and having its registered office at _____ in the state of _____ (hereinafter called **'the said contractor'** which expression shall unless the context requires otherwise include its successors and assignees).

Note No.2:

□□Please fill in the name and address of Bank.

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SPECIAL CONDITIONS:

1. **PHOTOGRAPHS OF THE BUILDING**

1.1 The contractor shall submit 3 sets of the prints of the photographs size 4"x6" to LIC of India at various stages:

a. Before commencement of the work.

b. During progress of work.

c. After all repairs works i.e. external plaster etc.

d. Completion before handing over the site/ buildings.

The photographs can also be submitted in CD/DVD in lieu of printed photographs.

One or more photographs shall be taken to have complete clear views of the project as directed by Corporation's Engineer.

1.2 The quoted **Percentage Rate** shall include for the same and no extra is payable to contractor on this account.

1 Contractors shall note that the site is working office. Hence, contractor shall take into account this aspect and quote their rates accordingly.

2 Contractors are advised to inspect the site before quoting their **RATE.** The contractors shall also note that they have to co-operate with other agencies carrying out the work(s) of LIC of India in the same site.

3 All statutory fees to be paid to municipal, water and sewerage authorities, water supply connection, sewerage connection and road cutting etc., will be paid/reimbursed by LIC against production of receipts towards payments of such fees. No overhead charges shall be paid in this regard. It is responsibility of the Contractor to obtain work permissions / approvals, if any, from the Municipality/ Fire Authority/Police/traffic, any other appropriate authorities.

4 The contractors shall not stack building materials on footpath and road margin.

5 The contractor shall thoroughly clean all the dust and dirt's, debris etc. and remove all the scaffoldings and other materials used for the works away from the site as and when needed. Disposal of the debris and Surplus Excavated earth should be done in such a way that the site is kept free from such unwanted materials.

6 The site is located in commercial area and therefore Contractor shall take all precautions to cause least inconvenience to the neighbors /surroundings during the work.

7 There may be some traffic restrictions with regard to heavy vehicles since the site is located in commercial area. Contractor shall take note of the same and obtain necessary permission from appropriate authorities for transportation of materials

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required for the construction. In case work is required to be done during the night time, permission from the Employer as well as local/police authorities shall be taken.

8 Noise pollution should be kept at minimum tolerance level.

9 Contractors to note that if hutments for labour provided at site all the necessary facilities shall be done as per statutory labour laws.

10. OTHER CONDITIONS:

i) Labourers may allow at site only after showing photo I Card issued by the agencies and duplicate of which is to be submitted to our office.

ii) Gate pass for daily labour may be issued.

iii) Every effort should be made to restrict the movement beyond working area.

iv) Materials can be taken away only after getting gate pass from Engg. Deptt.

Well co-ordination should be maintained with all agencies / LICI Officials and designated coordinator from LICI side to avoid any kind of disturbances in office working.

i) Every day, before the office starts the common area / working area should be cleaned in all respect if this area is used anyway for the work.

ii) LIC is no way responsible for issuing way bill or C – form to any agencies.

iii) During the execution of the work, the cleaning of pavements to be done on day to day basis.

iv) The contractor has to depute sufficient number of supervisory staff for making all arrangements and to ensure no disturbance in working office.

v) It is responsibility of the contractor to adhere to all security measures for the workers.

vi) The Contractors has to ensure protection to building and other assets etc. in the campus. In case of any damages caused due to work or due to ignorance of ant worker, contractor has to make good the damages and / or compensate the LIC for the damages done.

vii) Contractor is advised to inspect the site before submitting the tender and examine all parts of the work.

11. The quantities shown in the schedule i.e. Civil, Painting, external repairing work, CGI sheet roof work, plumbing/ sanitary/ sewerage system work are provisional and are likely to increase or decrease in any extend. Some of the items may be omitted altogether. No claim whatsoever shall be entertained on this account.

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12. All works in course of execution or after execution in pursuance of the Contract, shall at all times be open to the inspection and supervision of the Chief Engineer or his authorized representatives and the Contractor or his responsible agent, duly accredited in writing, shall at all such times, be present to receive instructions/orders. The work during the progress or any time before settlement of the final bill is also liable to be inspected by Chief Technical Examiner of the Central Vigilance Commission, New Delhi, on behalf of the Employer and this shall be also considered as an inspection by the Employer for all purpose.

13. Contractors to note that the quoted rates shall be firm throughout the currency of the Contract. The escalation towards materials, labour etc. is not allowed and will not be paid.

14. Price variation of materials shall not be allowed where the basic price of materials is mentioned in the respective items. However, if the purchase price of materials is less than the basic price of materials, the recoveries shall be made from the contractor bills.

15. <u>APPLICABILITY OF MSME PROVISION ON WORKS CONTRACT</u>

Works contract does not falls within the ambit of Public Procurement Policy-2012 and MSME Act. Hence benefits under Public Procurement Policy for MSMEs shall not be extended against tender for "**WORKS CONTRACTS**".

16. One approved sample of the colour will be prepared on wall surface for calculating actual consumption of primer and external paint in presence of LIC Engineer. On the basis of the same, the total consumption will be calculated and the contractor has to purchase and apply the said quantity. The empty drums of the paint & primer will be kept in safe custody till completion of the work and will be reconciled.
17. The repairing of the external surface will be done as per instruction. Documentary photographs of the repaired surface will be taken and kept for record on each side at each stage. The contractor has to obtain clearance from LIC Engineer after record of repairing measurement and surface preparation before application of each coat of paint.
18. The contractor has to submit bill/s against purchase of all paint/primer for reconciliation. The representative of the Approved Manufacturer of paint will make periodical site inspection for quality control and also give a certificate of satisfaction after completion of work.

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19. Special care to be taken to avoid any unwanted incident and to provide net/ polythene sheet for safety and security.

20 TESTING OF MATERIALS

During the progress of work, tests as instructed for various materials shall be conducted.

20.1 For all materials, expense towards testing shall be borne by the contractor and his quoted rates shall include for the same and no claim on the account shall be entertained.

20.2 The Corporation's Engineer may instruct Contractor to test any material to be incorporated in work even if it is not specifically mentioned. In all such cases testing charges alone excluding incidentals shall be reimbursed to the contractor provided test results are satisfactory. For all tests incidental charges such as cutting, loading, unloading, transporting, casting etc shall be at contractor's cost and shall be borne by him.

21. During the execution of the work, the cleaning of pavements to be done on day to day basis.

22. The work is to be carried out in the working office Building with least disturbance to the occupants/staffs/employees and therefore the work may have to be carried out in phased manner but entire work is to be completed within stipulated time limit. No consideration shall be given for extension of time limit on account of work taken in phases.

23. The Contractors has to ensure protection to building and other assets including parked vehicles (2 wheelers & 4-wheelars) / Car (4-wheelers) in the campus. In case of any damages caused due to work or due to ignorance of ant worker, contractor has to make good the damages and / or compensate the LIC for the damages done.

24. Contractor is advised to inspect the site before submitting the tender and examine all parts of the work including guarantee to be given after completion of work.

25. Only painted area will be measured flat in case of external paint, Cement Paint & Exterior Emulsion paint. No co-efficient shall be applied towards painting surface such as pebble dash finish, sand face finish , brick finish etc. contractor requested to inspect the site before quoting the rate. **Contractor should submit the paint consumption statement and the original purchase receipt / invoices for our verification**. The paint container/ drum shall be preserved at site till the verification measurement at site.

26. Before Commencement of the work, the L-1/ accepted Contractor has to submit the " Articles of Agreement" on Rs. 100/- Stamp paper as per the Performa given in Annexure" A".

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27. Contractor has to inspect the site carefully and work out the method of carrying out the work, disposing of debris, etc before quoting. Rates are including of disposal/ carting away of debris etc. outside the work site to contractors own dump.

28. During execution of work, scaffolding Net/ Haissan cloth /Green construction safety netting/ Agro shade, if required, shall be provided for vertical surface of the building. Sufficient provision of plastic sheet covering like Tarpaulin, etc materials to be stocked at site to use for covering of policy dockets, during replacement of CGI sheet roofing work. Rates are inclusive in the respective Tender Item.

29. Safety aspects should be considered strictly and it is a first priority before commencement of the day to day work. The necessary equipments like safety belts, Helmets; etc should be used at site by the painters & others.

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GENERAL PREAMBLES TO SCHEDULE OF QUANTITIES

These preambles apply to all the sections of the "Schedule of Quantities".

1. RATE TO COVER:

1.1 The rates quoted by the Contractor shall be held to include for providing and fixing, all conveyance and delivery, loading & unloading, carrying in, storing, hoisting, all labour, setting, fitting and fixing in position, making straight, cutting, waste, return of packing and all materials and labour and everything else necessary for the proper completion of each item of work to the approval of Corporation's Engineer and for Establishment Charges, overheads and profits. The Contractor shall provide at his expense all labour, materials and things required by the Corporation's Engineer for testing and measuring the work, for weighing, testing the efficiency of any portion of the work, all planking, gangways etc. necessary for affording access to every part of the work except where specifically stated otherwise.

1.2 The Contractor should also cover in his rates for the method of work, cost of materials, labour etc., to comply with the "Trade Specifications", General Instructions to Contractor", "Conditions of Contract", "Special Conditions", (if any), and all documents of this contract.

1.3 All the materials or procedures or specifications for work, unless otherwise stated, shall conform to the current Indian Standard whether or not specific mention is made thereof. The Contractor shall be responsible for and shall replace or make good at his own expense, any materials lost or damaged, or of quality not approved, temporarily disturbed roads, pavements, approaches, gates, walls or any such dismantling carried out to execute the work.

1.4 All rates quoted shall include for Supplying and fixing although the same may not have been mentioned in the item of the Schedule of Quantities. Words "Providing and Fixing where used shall have same meaning as "Supplying and Fixing".

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1.5 Rates quoted shall include for hoisting to any height and the work at all levels and lifting of Materials and working at any height shall not form any criterion for any extra claims, except where otherwise specified in Schedule of quantities.

2. ANCILLARY WORKS:

2.1 The Contractor shall have to carry out all ancillary and connected work within and near vicinity of the plot of the proposed work and inside the Building if ordered to do so by the Chief Engineer at the rates quoted in the Schedule of Quantities, at any time during the currency of this Contract including extension of time, if any granted.

3. PRICE FLUCTUATION / VARIATION:

Rates quoted by the Contractor shall be firm throughout the currency of the Contract including extensions of time, if any granted. No price adjustment due to variation in cost of materials or labour or any variation under any State or Central Legislation or any other reason whatsoever shall be allowed.

ANNEXURE "M"

MEASUREMENTS: -

The measurement of works shall be recorded in EXCEL format by the Construction Associates at the site as works progress. Any extra/deviated work executed during the period will also be measured in EXCEL format. The EXCEL sheet measurement will be submitted by the Construction Associate to the LIC site Engineer in both hard and soft format. The soft copy to be forwarded through e-mail to the concerned site engineer. The measurements then will be checked 100% by LIC site engineer and if required, the same shall be corrected by LIC site engineer to establish that the measurement so given by the Construction Associate is in order and complete in all respects.

(Refer Clause-21 with all its Sub-clauses of Conditions of Contract of the Tender)

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4. "PRINCIPAL MAKE/S OR OTHER EQUAL AND APPROVED" FOR MATERIALS / PRODUCTS:

4.1 The Contractor shall note that materials having "ISI" monogram shall primarily be used in the work. If in the tender "Certain Principal Make / Makes or other equal and approved of any material / Product is mentioned in any item or Trade Preambles relating to the particular items in its respective Trade Schedule, the Contractor shall have to use the Principal Make/Makes specified in the relevant item or the trade Preambles. In case the specified particular Principal make / makes of the materials product is/are not readily available, the Contractor shall take prior permission and approval of the Chief Engineer in writing before use of the alternative equivalent make of the Material / Product.

4.2 All principal makes specified for any item shall be treated at par as per the accepted quoted rate.

4.3 Use of the make other than the Principal Make/Makes or ISI /BIS Product (which shall be treated as an Equivalent make) shall be at the discretion of the Chief Engineer and such Make/Makes shall be used after the approval of the Chief Engineer.

4.4 In such cases the Contractor will not be paid any extra payment over the accepted quoted rate in any case. However if it is ascertained that the price of approved Equivalent Make or the Material/product is lower than that for the Principal Make/Makes of the same material / product the difference of the price shall be payable by the contractor to LIC. Such difference of price shall be suitably decided by the Chief Engineer whose decision shall be final and binding to the Contractor in this regard.

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LIST OF PRINCIPAL / APPROVED MAKES FOR CIVIL WORKS

Sr. No.	MAKES /AGENCIES / BRANDS	Sr. No.	MAKES /AGENCIES / BRANDS
1	GI PIPES	2	GI PIPE FITTINGS
	Jindal		R- Brand
	Zenith		K. S. Brand
	c. Apollo		c. Zoloto
	d. GST		d. RR
	e. Surya Prakash		e. SSS
	f. QST		f. NMC
	g. Tata		g. Unik
			h. Surya
3	COPPER PIPES / TUBES	4	MULTILAYER COMPOSITE PIPES
	Rajco Metal Industries		Ki TEC
	b. B. P. Conex		Kisan
	c. Comap		
5	PVC PIPES & FITTINGS	6	UPVC (UNPLASTICIZED PIPES & FITTINGS)
	Chemplast		Prince
	Prince		Supreme
	Supreme		Paras
	Finolex		Precision Pipes
	Oriplast		e. Kelvin
	Precision Pipes		
	g. Kelvin		
7	CPVC PIPES & FITTINGS	8	GATE VALVES, GLOBE VALVES
	a. Supreme		Leader
	b. Precision Pipes		Kirloskar
	c. Kelvin		Zoloto
	d. Prince		Orient
	e. Astral		
	f. Flowguard		
9	FOOT VALVES, CHECK VALVES	10	WATER METER
	Kirloskar		Capstan
	Leader		Anandaasahi
	Ashoka		Dasmesh
			Remco
11	FERRULES	12	BIB COCKS, STOP COCKS, PILLAR TAPS ETC
	Leader		Jaguar
	HINDCO		Marc
	Neta		Essco
	Annapurna		ARK
			GEM
			CERA

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13	FLUSHING CISTERNS (PVC / CERAMIC)	14	VITREOUS SANITARY WARE LIKE IWC, WASH BASIN, URINALS, EWC ETC.
	Parryware		Parryware
	CERA		CERA
	Hindware		Hindware
	Commander		Neycer
			e. RAK
			f. Jaquar
15	PLASTIC SEAT & COVER	16	BATHROOM FITTINGS
	Commander		Jaguar
	Parryware		ESSCO
	Bestolite		Gem
	Duroshine		Ark
	e. Jaquar		Marc
			CERA
			g. RAK
17	CI PIPES & FITTINGS	18	CI NAHANI TRAP
	Hind.		BIC
	Bic		SKF
	Neco		NECO
	RPMF		RAJCO
			RPMF
19	CI MANHOLE COVER	20	SW PIPE
	a. RPMF		HIND
			PERFECT
			BURNS
21	PVC CABINET MIRROR	22	SLUICE VALVE
	Commander		Leader
			Kirloskar
23	HDPE / LDPE / LLDPE WATER STORAGE TANKS	24	HDPE PIPES & FITTINGS
	Sintex		a. Kelvin
	Polycon		b. Prince Pipe & Fittings
	G&P		
	Prince Pipe & Fittings		
25	CERAMIC /GLAZED TILES	26	VITRIFIED TILES
	NITCO		NITCO
	Kajaria		Kajaria
	Euro		RAK
	H. R. Johnson		Euro
	Somany		e. Somany
	f. Oriental Bell Ltd.		Oriental Bell Ltd.
	g. Asian granite India Ltd (AGL)		Asian granite India Ltd (AGL)
	h. CERA		Vermora

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	i. RAK		H. R. Johnson
	j. Vermora		CERA
27	PLYWOOD (BWR), BLOCK BOARD	28	FLOAT GLASS
	Archid		Saint Gobain
	Green Ply		Modi Guard
	Century Ply		Triveni Sheet Glass
	Bhutan Board		Indo Asahi Glass Co.
	Sharon		Tata
	Anchor		Atul
	Swatstik		
	National		
	Samrat Plywood Ltd		
	Green Panel		
	Merino		
	Austin		
	Kalpataru		
	Duro		
29	CALCIUM SILICATE BOARD / FIBRE CEMENT BOARD & ACCESSORIES	30	PVC DOORS AND DOOR FRAMES
	a. Hilux (Ramco)		Rajshri
			Sintex
			Supreme
31	ALUMINIUM EXTRUDED SECTIONS	32	WPC DOOR, DOOR FRAMES & WINDOWS, UPVC SOLID DOOR
	Jindal		a. Qute
	Indal		
	Hindalco		
33	STAINLESS STEEL KITCHEN SINKS	34	PRE-LAMINATED PARTICLE BOARD
	a. Nirali		Green Lam
	b. Farnkee		Archid lam
	c. Jayna		Swastik
	d. Diamond		Green Panel
	e, Neelkanth		Duro
	f. CERA		Asis
			Heritage Laminates
			Century
35	FLUSH DOOR SHUTTERS	36	DECORATIVE LAMINATES
	a. Kutty Flush doors		Green Lam
	b. Century		b. Merino
	c. Green Ply		c. Sunmica / Formica
	d. Shiva Hari Plywood Ltd. (Corbett)		d. Century
	e. Anchor Ply		e. Durian

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	f. Swastik Ply		f. Sundek
	g. Western India		g. Anchor
	h. Parvati Wood		h. Decolam
	i. Archid Ply		i. Archid Ply
	j. Samrat Plywood Ltd		j. Samrat Plywood Ltd
	k. Green Panel		k. Heritage Laminates
	l. Merino		l. Asis
	m. Austin		m. Green Panel
	n. Kalpataru		n. Virgo
	o. Duro		
37	FLOOR SPRINGS	38	VENEERS
	Everite		Decowood
	Hardwyn		Euro veneers
	Efficient Gadgets		Durion
	Garness		Green Lam
	e. Dorma		Archid Ply
			Green Panel
			Kalpataru
			Duro
39 i)	MDF BOARDS	39 ii)	HDF BOARD
	Duratuff		a. Green Panel
	Nuwud		b. Asis
	Century		
	Green Ply		
	Green Panel		
	f. Asis		
40	ADHESIVES	41	WOOD PRESERVATIVES
	Fevicol (Pidilite)		Bison
	Araldite		Godrej
	Ciba Giegy		Kot
	Mowiol – HV of Mafatlal		d. Terminator
42	HARDWARE FITTINGS	43	DOOR CLOSERS
	Jyoti		Everite
	Argent		Hardwyn
	C.I.E.F.		Efficient Gadgets
	Classic		Ebco
	Everite		Dorma
	Metaco India		Garness
	JH Aluminum		
	PV Radhakrishna		
	Etalia		
	Hardwin		
44	S S HARDWARE FITTINGS (HINGES, FLOOR SPRINGS, DOOR CLOSERS, HANDLES, FURNITURE HARDWARE,	45	DRAWER SLIDERS

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	LOCKS, PATCH FITTING FOR GLASS, SHOWER PANEL, SLIDING/TOWER BOLT, GLASS RAILINGS)		
	a. Ozone		a. Efficient Gadgets
	b. Hettich		b. Ebco
	c. KICH		c. Etahoa
	d. Godrej		d. Sisco
	e. Dorset		
	f. Magnum		
	g. Yale		
	h. Ebco		
46	LOCKS	47	MIRRORS
	Godrej		Atul
	Golden		Sun
	Efficient Gadgets		Commander
	Mark		Modi Guard
	Sheet		Saint Gobain
	Vision		Globe
	Dorma		CERA
48	WATER PROOFING COMPOUND	49	SPECIAL PROTECTIVE & DECORATIVE FINISH
	Impermo		Snowcem Paints
	Cico		Asian Paints
	Pidilite		Berger
	Roff		Jenson & Nicholson
	Choksey		Kansai – Nerolac
	Hindustan - Ciba –Gaigey		ICI
	Accoproof		g. Godawari
	Sika		h. Nippon
	Fosroc		
	MYK Arment		
	Tikidan		
	Berger Home Shield		
	Asian Paints Smart Care		
	Kryton		
50	OIL BOUND DISTEMBER	51	CEMENT PAINT
	a. Asian		Snowcem Plus
	b. Berger		Berger
	c. Jenson & Nicholson		Asian
	d. ICI		Jenson & Nicholson
	e. Kansai – Nerolac		Kansai – Nerolac
	f. Godawari		ICI
	g. Nippon		Godawari
			Ultratech
52	SURFACE TEXTURE	53	TEXTURED PAINT

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	Heritage (Bakelite Hylam Ltd.)		Snowcem India Ltd.-Santex matt
	Spectrum		Asian
			Jenson & Nicholson
			Berger
			Kansai – Nerolac
54	ENAMEL PAINT / PRIMERS / READY MIXED PUTTY FOR WOOD WORK, IRON & STEEL	55	WALL PUTTY
	Asian		Birla wall care
	Berger		Snowcem paints
	Jenson & Nicholson		JK
	Kansai – Nerolac		Asian Paints
	ICI		Berger
	MRF		
	Godawari		
	h. Nippon		
56	EXTERIOR EMULSION	57	CEMENT CONCRETE PIPES
	Asian Paints-Apex Ultima		The Indian Hume Pipe
	Berger Paints		Premiere Pre-stressed Co.
	Kansai – Nerolac		
	MRF		
	Jenson & Nicholson		
	ICI Weather Shield Max		
	Godawari		
	Nippon		
58	EXPANSION JOINT BOARD	59	FALSE CEILING (Gypsum)
	Shalimar Tar Products		a. USG Knauf
	Lloyds insulations		b. Gyproc Saint Gobain
	Fosroc		
	Shalitex		
	Pidilite		
60	FALSE CEILING (METAL)	61	MINERAL FIBRE CEILING
	a. Saint Gobain		a. Daiken
	b. Hunter Douglas		b. USG Knauf
	c. Armstrong		c. Armstrong
	d. Fameline		
	e. USG Knauf		
62	CSB FALSE CEILING	63	VERTICAL BLINDS
	a. Aerolite		a.Vista Levlor
			b. Trac
			c. Mac
			d. MARVEL
64	PLASTICIZER, SUPER PLASTICIZER, ADMIXTURES & OTHER CONSTRUCTION CHEMICALS.	65	ADHESIVE FOR TILE FIXING

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	a. Asian Laboratories		a. Roffe
	b. CICO		b. Balendura
	c. Ultracon		c. Cera Bond
	d. Fosroc		d. Fosroc
	e. Sika		e. Choksey Chemicals
	f. Kunal Conchem		f. Dr.Fixit
	g. Pidilite		g. Sika
	h. BASF		h. Sunanda
	i. ECMAS		i. Ferrous Crete
	j. MYK Arment		j. BASF
	k. Kryton		k. MYK laticrete
			l. CICO
			m. Berger Home Shield
			n. Asian paints Smart Care
66	LIQUID/ SELF ADHESIVE MEMBRANE	67	PAVING TILES
	a. Asian Paints Ltd		a. Eurocon
	b. Ardex Endura		b. Ultra
	c. Fosroc		c. Duracrete
	d. Pidilite		d. Unistone
	e. MYK Arment		
68	PVC FLOORING	69	VINYL FLEXIBLE FLOORING
	a. Flora		a. Wonder floor
	b. Armstrong		b. Armstrong
			c. Bhor
			d. Rikvin
			e. Tusker
70	FIBRE GLASS DOOR	71	Soft Board
	a. Master Craft		a. Jolly Board
72	SCREW	73	FIBRE REINFORCED COMP. DOOR
	a. Nettlefold		a. Loknath Unique
	b. GKW		
74	CEMENT	75	Steel
	Brands produced by any company, who is a Member of Cement Manufacturers Association.		a. SAIL
			b. Vizag Steel
			c. Tata Steel
			d. JSW
76	SPECIALISED WATERPROOFING AGENCIES	77	STRUCTURAL GLAZING AND ACP WORK
1	India Water proofing Co. 3rd Floor, Rohit Chambers, Janmabhoomi Marg, Mumbai G.P.O(fort), Mumbai Tel.: 022 2287 1156		Glass : Monolithic heat-strengthened / Insulated / laminated / Tempered glass. a. Asahi India Glass Ltd. b . St. Gobain India

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2	Likproof India Pvt Ltd. 2nd floor, Cecil Court, Mahakavi Bhushan Marg, Colaba, Next To Regal Cinema, Colaba Mumbai 400039, 022 2202 0083		Aluminium Extrusions. a. Jindal b. Hindalco c. Indal d. Global Aluminium e. Bhoruka
3	The Perfect waterproofing Co, 6637/6, Kothi Mem, Bara Hindu Rao,Delhi-110 006, Delhi – 110006 Tel.:(011)9711804217, 9312630094		Aluminium Composite Cladding Panels a.Alcobond b.Aluma c.Durabuild d. Euro e. Virgo f. Timexbond g. Alutech h. Alstrong i. Aludecor j. Alcopanel k. Alpolic l. Alubond
4	Oversee Waterproofing Corporation 2nd Floor, Baldota Bhavan, 117, M Karve Road, Churchgate, Mumbai-400020, Tel.:022 2205 3827		Expansion anchors with SS 316 Screw, Bolts & Nuts. a. Hilti b. Fischer c. Arrow d. Kundan
5	M/s New Asia Water Proofing Co, Mohiyuddin Khan, Gaour Mohallah, Roshan Ganj, Sikar, Raj. (332001)		Chemical anchors a. Hilti or approved equivalent
6	M/s. Asian Waterproofing Co. , 347/CT Road, Salkia, Kolkatta -6 (The agency is debar for 5 years (20.6.2020 to 20.6.2025 as approved by the then CE, CZO vide note ref CZ/Engg/Biaora dated 18.06.2020)		Door & Window furniture: a. 4 point lockset : GIESSE or approved equivalent. b. S.S friction hinges : Cotswold, c.Patch fittings / Spider Fittings: Dorma ,Windor, Kich d. Floor Spring, handle etc : Dorma e. Adhesive film : 3 M, Birla or approved equivalent
7	M/s. M.R. Consultants & Constructions, Universal House, D-187, Vaibhav Khand, Gomati Nagar, Lucknow .		Structural Sealant : Dow Corning, GE – Two Part
			Weather Sealant : Dow Corning, GE
			Foam Spacers and Mounting Tapes: Norton
			EPDM : AMEE Rubber Industries or

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			approved equivalent
			Insulation : U.P. Twiga, Lloyds Insulation or approved equivalent

SPECIFICATIONS FOR BUILDER'S WORK

1. EXCAVATION AND EARTHWORK

1.01 GENERAL :

The excavation will generally refer to open excavation of foundation (including basement if necessary) wet or dry.

1.02 EXAMINE THE SITE :

The Contractor shall visit and ascertain the nature of the ground to be excavated and the work to be done and shall accept all responsibility of the cost of the work involved.

1.03 CLEARING THE SITE :

The site on which the structure is to be built shown on the drawing and the area required for setting out and other operations like roads, drains, sheds, etc. should be cleared and all obstructions, loose stones, materials and rubbish of all kinds, slumps, bush wood and trees removed as directed, roots being entirely grubbed up. The materials obtained will be the property of the LIC and materials considered useful by the Corporation's Engineers will be handed over to the LIC. Rejected materials will be removed by the Contractor to his own dump at his own cost.

1.04 GROUND LEVELS AND SITE LEVEL PLAN :

Before starting the excavations, the requisite block levels of the entire plot shall be taken by the Contractor in consultation with the Corporation's Engineer and a proper record of these levels kept, which shall be jointly signed by the Contractor and the Corporation's Engineer. A block level plan showing all the ground levels of the plot shall be prepared and shall be jointly signed by the Contractor and the Corporation's Engineer.

1.05 SETTING OUT :

After clearing the site, and preparing the site level plan, the Contractor will set out the centre lines of the building or other involved works and get the same approved from the Corporation's Engineer. It shall be the responsibility of the Contractor to install substantial reference marks,

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bench marks etc. and maintain them as long as required by the Corporation's Engineer . The Contractor will assume full responsibility for proper setting out, alignment, elevation and dimension of each and all parts of the work.

1.06 EXCAVATION AND PREPARATION OF FOUNDATION FOR CONCRETING

Excavation shall include removal of all materials of whatever nature at all depths and whether wet or dry necessary for the construction of foundation and sub-structure (including mass excavation for basements where applicable) exactly in accordance with lines, levels, grades and curves shown on the drawings or as shall be levelled both longitudinally and transversely or stepped as directed by the Corporation's Engineer.

Should the Contractor excavate to a greater depth or width than shown on the drawings or as directed by the Corporation's Engineer, he shall at his own expense fill the extra depth or width with cement concrete in proportion as directed by the Corporation's Engineer but in no case with concrete of mix leaner than 1:4:8 cement concrete.

The contractors shall report to the Corporation's Engineer when the excavations are ready to receive concrete. no concrete shall be placed in foundations until the Contractor has obtained the Corporation's Engineer's approval. In case, the excavation is done through different strata of soil and if the same is payable as per provision in the schedule of quantities, the Contractor shall get the dimensions of the strata payable decided from the Corporation's Engineer. if no specific provision is made in the schedule of quantities it will be presumed that excavation shall be in all types of soil and the Contractors rate shall cover for the same. After the excavation is passed by the Corporation's Engineer (and before laying the concrete) the Contractor shall get the depth and dimensions of the excavations and levels (and nature of strata if applicable as per schedule of quantities like hard rock, soft rock etc.) and measurements recorded from the Corporation's Engineer on site. Refer I.S. 1200(Part-1)-1969 for classification of excavated material. Chief Engineer's interpretation regarding classification shall be final and binding on the Contractor. Excavated rock/boulders could be used for soling if approved by S.E./Executive engineer. Recovery at the market rate shall be made based on stack measurement after deducting 30% for voids.

1.07 SHORING :

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The sides of the excavations should be timbered and shored in such a way as is necessary to secure them from failing in and the shoring shall be maintained in position as long as necessary. The Contractor shall be responsible for the proper design of the shoring to hold the sides of the excavation in position and ensure safety from slips and prevent damage to work and property and injury to persons. The shoring shall be removed as directed after the items for which it is required are completed.

1.08 PROTECTION :

All foundation pits, lift pits, well pits and similar excavations shall be strong fenced and marked with red lights at night to avoid accidents. Adequate protective measures shall be taken to see that the excavation does not affect or damage adjoining structures. All measures required for the safety of the excavation, the people working in and near the foundation trenches, property and the people in the vicinity shall be taken by the Contractor at his own cost, he being entirely responsible for any injury and damage to property caused by his negligence or accident due to his construction operations.

1.9 STACKING OF EXCAVATED MATERIALS :

All materials excavated will remain the property of the L.I.C. and rate for excavation includes sorting out of useful materials and stacking them on site as directed. Materials suitable and useful for backfilling, plinth filling or leveling of the plot or other use shall be stacked in convenient place but not such a way as to obstruct free movement of men, animals and vehicles or encroach on the area required for constructional purposes.

1.10 BACK FILLING :

All shoring and form work shall be removed after their necessity ceases and trash of any sort shall be cleaned out from the excavation. All space between foundation masonry or concrete and the sides of excavation shall be refilled to the original surface with approved excavated materials in layers 15 cm to 20 cm, in thickness, watered and rammed. The filling shall be done after concrete or masonry is fully set and done in such a way as not to cause undue thrust on any part of the structure. Where suitable excavated material is to be used for refilling, it shall be brought from the place where it was temporarily stacked and used in refilling. No excavations or foundations shall be filled in or covered up until all measurements of excavations, masonry concrete and other works below ground level are jointly recorded. Black cotton soil shall not be used for back filling or in plinth filling.

1.11 DEWATERING :

Rate for excavation shall include bailing or pumping out water which may accumulate in the excavation during the progress of work either from seepage, springs, rain or any other cause and diverting surface flow if any by bunds or other means. pumping out water shall be done in

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such approved manner as to preclude the possibility of any damage to the foundation trenches, concrete or masonry or any adjacent structure.

When water is met in foundation trenches or in basement excavations pumping out water shall be from an auxiliary pit of adequate size dug slightly outside the building excavations. The depth of the auxiliary pit shall be more than the working foundation trench levels. The auxiliary pit shall be refill with approved excavated materials after the dewatering is over.

The excavation shall be kept free from water (1) during inspection and measurement. (2) when concrete and/or masonry are in progress and till they come above the natural water level, and (3) till the Corporation's Engineer considers that the concrete/mortar is sufficiently set.

1.12 SURPLUS EXCAVATED MATERIAL :

All excavated materials certified as surplus and not useful shall be removed by the Contractor from the site in an approved manner to his own dump at his own cost.

1.13 RATES TO INCLUDE :

Apart from other factors mentioned elsewhere in this contract; rates for the item of excavation shall also include for the following:

i. Clearing site
ii. Setting out works as required and setting up bench marks and other reference marks.
iii. Providing shoring and strutting and subsequently removing the same.
iv. Bailing and pumping out water as required and directed.
v. Excavation at all depths (unless otherwise specified in the schedule of quantities) and removal of all materials of whatever nature wet or dry and necessary for the construction of foundation/basement etc. and preparing bed for laying concrete.
vi. Sorting out useful excavated materials and conveying beyond the structure and stacking them neatly on the site for back filling or re-use as directed.
vii. Back filling the trenches alongside masonry or concrete with approved excavated material up to the natural ground level including watering and ramming.
viii. Necessary protection including labour materials and equipment to ensure safety and protection against risk or accident.
ix. Removal of surplus excavated material as directed to Contractors own dump.
c. Drilling of small holes as directed to explore the nature of substratum if necessary.

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1.14 MEASUREMENTS FOR EXCAVATION :

Excavation for foundation of columns, beams, walls and the like shall be measured and paid net as per drawing dimensions of concrete (bed concrete where so specified) at the lowest levels in regard to length and breadth and depth shall be computed from the concerned excavation levels and ground level taken before excavation. Any additional excavation required for working space, form work, planking, dewatering and strutting etc. shall not be measured and paid for separately but rates quoted for excavation shall include for all these factors. No increase in bulk after excavation shall be made.

1.15 EARTH FILLING IN PLINTH :

If there is approved surplus earth after back filling the sides of excavations, the same will be used for plinth filling if required. Any additional approved earth if required for plinth filling the same shall be brought on to the site by the Contractor from outside. No borrow pits shall be opened on the site. Filling in plinth shall be done in layers of 15cm to 20cm thick, each layer being consolidated by ramming and watering. Black cotton soil shall not be used for plinth filling.

Filling in plinth shall be measured net as in position after consolidation height or depth of filling being measured from original ground level to top of earth filling after consolidation.

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SPECIFICATION FOR CONCRETE

2. CONCRETE AND STEEL REINFORCEMENT CEMENT CONCRETE :

2.1 GENERAL :

P.C.C. shall mean plain cement concrete.
R.C.C. shall mean Reinforced cement concrete.

2.2 Constant and strict supervision of all items of the construction is necessary during the progress of work, including proportioning, mixing and placing of concrete. Supervision is also extremely important in checking the reinforcement and its placing, before being covered.

2.3 Contractor shall finalize the details in consultation with the Clerk-of works as per which from work is proposed to be carried out and also the details of planning of concreting operations including adequacy of acceptable materials, testing of mixer and vibrator for ascertaining that they are in working condition, availability of test cube moulds, slump test apparatus etc.

5.3 SAMPLES AND TESTS:

Every facility shall be provided to enable the Corporation's Engineers to obtain samples and carry out tests on the materials and construction. If these tests show that any of the materials or construction do not comply with the requirements of this specification, the Contractor will be responsible for the costs of the test and the replacement of the defective materials and/or construction.

5.4 REJECTED MATERIALS:

All materials which have been damaged contaminated or have deteriorated or do not comply in any way with the requirements of the specification shall be rejected and shall be removed immediately from the site at the Contractor's own expenses.

5.5 LOADING OF FLOOR SLABS:

Materials shall not be stored or stacked on suspended floors and roofs without the Corporation's Engineer's prior approval.

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5.6 **CO-ORDINATION :**

The Contractor shall be responsible for the co-ordination with sub-contractors or other contractors for incorporating any inserts or electrical conduit pipes, fixing blocks, chases, holes etc. in concrete members as required. The Contractor shall ensure that these requirements have been approved by the Corporation's engineer before concreting operation are put in hand. All fixing blocks, chases, inserts, holders, etc. to be left in the concrete shall he of sizes specified and be accurately set out and placed before pouring concrete. The Contractor's rates quoted for concrete items shall include for all these factors. Holes or chases shall not be out in concrete without prior approval of the Corporation's Engineer.

2.8 INSERTS IN CONCRETE :

Contractor should note that he shall provide necessary wooden lugs, sleeves, etc. for his own works to be made for which no extra payment will be made. He will have to provide if so directed, any inserts, wooden lugs, sleeves for other contractor's work such as Electrical Contractor, plumbing Contractor, A.C. Contractor, Contractor of lifts , etc. for which he will be entitled for payment but in case the other contractors provide such inserts, then he will have to take proper measures (at his expense) and take care not to disturb the work while laying concrete.

2.9 Contractor shall provide work-site-testing equipment for aggregate and concrete such as test sieves, balances, slump cones, test cube moulds etc.

2.10 MATERIALS : ALL MATERIALS SHALL BE OF APPROVED QUALITY.

2.11 CEMENT :

a. Ordinary port land cement shall conform to the I.S. specification I.S:269/1976. Portland Pozzolana cement shall confirm to I.S. 1489-1976. Portland slag cement shall confirm to I.S. 456-1989.

b. The cement shall be stored in such a manner as to permit of easy access for proper inspection, in a suitable weather-tight building to protect the cement from dampness and to minimize warehouse deterioration. The shed shall be built at the cost of the Contractor. Care shall be taken to see that (i) there is no leakage from side walls and (ii) windows are not provided. The plinth level of the shed shall be raised and the surrounding ground shall drain the surface water

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away from the shed. The floor of the shed shall consist of wooden planks resting on a base prepared of dry bricks laid on edge. The bags should not be piled against the wall. A space of 30cm shall be left all around between exterior walls and piles. The bags shall be placed closed together in the pile to reduce circulation of air as much as possible. The bags should not be piled more than 10. the bags shall be arranged in header and stretcher fashion so as to lessen the danger of toppling. When removing the bags for use, "First in, first out" rules shall be applied. For this purpose, consignment as it comes in for storage shall be stacked separately and a placard bearing date of arrival shall be pinned to the pile.

c. Contractor shall be fully responsible for the quality of cement brought at the work site. The contractor shall satisfy himself that the cement brought to the work site conforms to the requirements of I.S. : 269/1976 or relevant Indian Standard and shall procure manufacturer's certificate to this effect. In his own interests. In case the Contractor has any doubt regarding the quality of cement brought on work site it is up to him to have it tested at his own expenses and make sure that cement is of right quality.

d. In case Corporation's Engineer gets any doubt about quality of cements he can order the contractor to have cement tested or he can take sample in the presence of contractor from cement bags stored at work site and forward them to a government approved laboratory for testing. In respect of charges for testing in such a case, contractor will be paid the charges, provided the cement conforms to the specified I.S. Standards.

e. Cement concerning which there is doubt, shall not be used pending testing and satisfactory results. All cement not conforming to specifications and rejected by Corporation's Engineer and cement that is stored at site for a period long than three months and deteriorated, damaged or set shall not be allowed to be used All such cement shall be immediately removed from work site by the contractor. The cost of all such cement shall be borne by the contractor.

2.12 AGGREGATES:

Aggregates shall conform to IS:383/1970 and shall be from approved sources.

2.13 FINE AGGREGATE :

a. The fine aggregate-sand shall be hard, strong, dense, durable, clean with uncoated grains. The maximum size of the particles shall be 4.75mm(3/16in.) and shall be graded down. The sand shall not contain any harmful material such as iron pyrites, coal mica, silt, clay, alkali, sea shells, organic impurities, loam etc. or in case of reinforced concrete work, any material which might attack the reinforcement or which might be detrimental to concrete. Aggregates which are

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chemically reactive with the alkalis of the cement, shall not be used, the maximum quantity of deleterious material shall not exceed the limits specified in the relevant I.S specification. Silt and dust present in natural sand shall be limited to 3% by weight. in case it is more than 3%, it shall be washed at site. Presence of mica in sand shall not be more than 1% by weight.

b. Grading: The natural sand used for work shall have a grading conforming to one of the three grading zones given in following table (Table IA):-

TABLE 'IA'

GRADING OF FINE AGGREGATES

(In accordance with IS:2386/1963 Part-1) percentage passing for

Sieve	Zone-1	Zone-2	Zone-3
10 mm	100	100	100
4.75 mm	90 - 100	90 - 100	90 -100
2.36 mm	60 - 95	75 - 100	85 -100
1.18 mm	30 - 70	55 - 90	75 -100
600 micron	15 - 34	35 - 59	60 - 79
300 micron	5 - 20	8 - 30	12 - 40
150 micron	0 - 10	0 - 10	0 - 10

When grading falls outside the limits of any particular zone of sieves, (other than 600 micron IS Sieve) by a total amount not exceeding 5% it shall be regarded as falling within the grading zone.

2.14 <u>COARSE AGGREGATES</u> :

a. Coarse aggregates shall consist of hard, dense, durable, uncoated crushed rock. Gravel aggregate shall be allowed to be used only if specially specified in the schedule of quantities. Otherwise, it shall be taken that only crushed rock from an approved quarry shall be permitted as coarse aggregates.

b. The aggregates shall be from soft, friable, thin or long laminated pieces. Aggregates shall be free from injurious amounts of alkali, organic matter and other deleterious materials. Flaky or weathered stones shall not be used. The maximum percentage of deleterious materials shall not exceed those specified in the relevant I.S. specifications .In selecting the aggregate, the

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
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E-mail: ez_engineering@licindia.com
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contractor shall satisfy that the source is suitable for regular supply and a watch shall be maintained that the particle shape and grading remain reasonably uniform throughout the progress of work.

d. Contractor shall arrange to supply coarse aggregates in single sizes, conforming in the case of each nominal size, to the grading given in the following table(Table 1B) under column "A", the single sizes shall be combined in suitable proportions to get desired overall grading of aggregates. The Corporation's Engineer, at his discretion may allow the used of "Graded Aggregates" of nominal size, to conform to the grading in the limits specified in the Table-IB under column "B".

TABLE 1- B COARSE AGGREGATES

	COLUMN"A"					COLUMN "B"				
	Percentage passing for single sized aggregates						**Percentage passing for graded aggregates**			
IS sieve Mm	63mm	40mm	20mm	16mm	12.50mm	10mm	40mm	20mm	16mm	12.50mm
80	100	-	-	-	-	-	100	-	-	-
63	85-100	100	-	-	-	-	-	-	-	-
40	0-30	85-100	100	-	-	-	95-100	100	-	-
20	0-5	0-20	85-100	100	-	-	30-70	95-100	100	100
16	--	-	-	85-100	100	-	-	-	90-100	-
12.50	-	-	-	-	85-100	100	-	-	-	90-100
10	0-5	0-5	0-20	0-30	0-45	85-100	10-35	25-55	30-70	40-85
4.75	-	-	0-5	0-5	0-10	0-20	0-5	0-10	0-10	0-10
2.36	-	-	-	-	-	0-5	-	-	-	-

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e. Size of Aggregates:-

(i) Nominal maximum size of aggregates in beams and columns should be restricted to 5mm less than the minimum clear distance between the main bars or 5mm less than the minimum cover to the reinforcement whichever is less.

(ii) Where reinforcement is widely spaced as in slabs, nominal maximum size of aggregate of 20mm may be used.

(iii) In no case the maximum size of aggregate to be greater than one quarter of the minimum thickness of the member so as to facilitate concrete to be placed without difficulty to surround all reinforcement.

(iv) Generally on reinforced concrete work, nominal maximum size of 20 mm is considered suitable.

f. Grading: It can be assumed as a rough guide that from 45percent to 75 percent of the total aggregate (fine plus coarse) shall pass through a sieve of aperture size equal to one half of the maximum size of coarse aggregate.

g. Stock-piling of aggregate or storage of aggregates: Aggregates shall be stored at site on a hard and dry patch of ground preferably levelled and rolled. piles of sand and piles of different sizes coarse aggregate shall be stored in separate stock piles with height preferably not exceeding 1.25 to 1.5 metres. A bottom layer of aggregates of 10cm deep shall be felt undisturbed while removing the material for use.

h. If the aggregates are stored at site for a long time there is accumulation of dust. The contractor is required to sieve the aggregate before use, if advised by Corporation's engineers. Washing the aggregates by means of hose pipe is not permitted. Silt and find dust permitted in coarse aggregate is only upto 1% by weight

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2.15 WATER :

Water used for both mixing and curing shall be potable and free from injurious amounts of oils, acids, alkalis, salts, sugar, organic materials or other substance that may be deleterious materials which are likely to affect the strength or durability of concrete or steel. Water containing any sugar shall not be allowed for use. Also water which fails to satisfy the following requirements shall not be used:-

a. To neutralize 100ml. sample of water, using mixed indicator, it should not require more than 25ml. of 0.02 normal H_2SO_4.

b. To neutralise of 100 ml. sample of water, using phenolphthalein as an indicator , it should not require more than 5ml. of 0.02 normal NaOH.

c. Water should not contain solids in excess of the following:

Organic	200 mg/litre.
Inorganic	3000 mg/litre.
Sulphate(as SO4)	400 mg/litre.
Chloride(as CI)	2000 mg/litre for P.C.C.
	500 mg/litre for R.C.C.
Suspended matter	2000 mg/litre.

The PH value of water shall be between 6 to 8.

2.16 MIXES OF CONCRETE :

Concrete used shall be in volumetric mix / Design mix / RMC such as 1:4:8, 1:3:6, 1:2:4, 1:1.5:3, 1:1:2 / M15, M20, M25 etc.

2.17 BATCHING :

The quantity of cement shall be determined by weight. Batching of cement and water shall be as specified in Paras 2.20 and 2.22 respectively.

2.18a. In proportioning concrete the quantity of cement shall be determined by weight. One bag of cement containing 50kgs. of cement shall be assumed to contain 35 litres (1;20Cft). The quantities of fine and coarse aggregates and water shall be determined by volume. If fine aggregate is moist allowance shall be made for bulkage in accordance with filled method of determining the necessary adjustment for the bulking of fine aggregates. Moisture causes loosely filled sand to occupy a larger volume than it would occupy if dry. It is therefore

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
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necessary to increase the volume of sand by the % of baulking. The correction shall be made on the following lines :-

In a 250 cu. cm. measuring cylinder pour the sample of the fine aggregate (Sand) to be used at site, consolidate it by shaking, until it reaches 200 cu. cm. mark. Then fell the cylinder with water and air the sand well. The water must be sufficient to completely submerge the sand. The sand surface will be seen below its original level. Suppose other surface is at mark `X' Cu. cm. The % of baulking of sand due to moisture shall be calculated from the following formula

$$\text{Percentage of baulking `K'} = \frac{200 - X}{X} \times 100$$

$$\text{Therefore true volume} = \frac{100 \times \text{Measured Volume}}{K + 100}$$

b. The water cement ratios shall not be more than those specified in Table it below. in case mechanical, vibrators are used, water content shall be suitably reduced, without reducing cement content, to avoid aggregation. Water content specified in table II may be increased under exceptional circumstances where workability of concrete produced poses difficulties of placement and compaction. Prior permission of Corporation's Engineer shall be obtained for this purpose. When the water content is increased in the manner indicated above, the cement content also shall be increased proportionately so that water cement ratio given in Table II is maintained. Cost of extra cement shall be borne by the contractor.

TABLE II

Mix of concrete	Quantity of water 50kg Of cement. Max. litre
1:3:5	**34**
1:2:4	**32**
1:1½ :3	**30**
1:1:2	**27**

c. Allowance shall be made for surface water present in the aggregate while computing the water content. Surface water shall be determined by one of the field methods described in IS:2386(Part II)/1963. In the absence of exact data, with the approval of the Corporation's Engineer the amount of surface water may be estimated from the values given in table III below:-

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TABLE –III
SURFACE WATER CARRIED BY AVERAGE AGGREGATE.

Aggregate	Approximate quantity of surface water in litre/Cu.M.
Very wet sand	**120**
Moderately wet sand	**80**
Moist sand	**40**
Moist gravel or crushed rock	**20 to40**
Coarser the aggregate lesser water it will carry	

2.19 WORKABILITY :

Workability of concrete should be controlled by direct measurement of water content, making allowance for any surface water in the fine and coarse aggregates. The slump test or compacting factor test shall be carried out at intervals as directed by the Corporation's Engineer. The slump test is suitable for slump of 5cm to 15cm.

2.20 MIXING AND PLACING OF CONCRETE: MEASUREMENT OF MATERIALS:

Cement shall be batched by weight even though aggregates are batched by volume. Where the weight of the cement is determined by accepting the maker's weight per bag; a number of bags as directed by Corporation's Engineer shall be weighed separately to check the net weight.

2.21 AGGREGATES :

a. The quantities of fine and coarse aggregates shall be determined by volume. The proportions of aggregates (i.e. ratio of fine aggregate to coarse aggregate) shall be adjusted from upper limit to lower limit progressively as the grading of the fine aggregates becomes, fine, and maximum size of coarse aggregates becomes larger.

i). For an average grading fine aggregate i.e. Zone II of IS: 2386/1963 Part I the ratios of fine aggregate to coarse aggregates shall be:

Maximum size of coarse aggregate	Maximum size of coarse aggregate
10mm	20 mm
1:1 ½	1:2

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
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For fine aggregates within their grading zones the ratio shall be increased as the fine aggregate gets finer, that is , passes from zone I to III.

ii) For maximum size of coarse aggregate 20 mm the ratios of fine aggregate to coarse aggregate shall be (Zones as per IS : 2386/1963 - Part I)

Zone I	Zone II	Zone III
1:1.1/2	1:2	1:3

b. The measuring boxes prepared for measuring the aggregates shall be of correct size. The measuring boxes are required to be certified by Corporation's Engineer before they are used on site. Internal dimensions of the boxes shall be generally 35cm x 25cm x 40cm. Heaping of aggregates over the boxes is prohibited. Aggregates shall be filled in only up to the brim of the boxes and struck off horizontally with a timber or steel bar. Allowance for bulkage for sand shall be made as determined by Corporation's Engineer. Refer clause no- 2.18

2.22 WATER :

Water shall be measured by volume in calibrated tanks/vessels having a conical shape narrow at top. Water shall not be measured using ordinary uncelebrated buckets, which are wider at top and narrower at the base. The measurement of water to control and maintain a constant water cement ration is of utmost importance and adequate attention to this requirement by the Contractor to the satisfaction of Corporation's Engineer, shall be given.

2.23 MIXING OF CONCRETE :

a. Machine mixing: Concrete shall be mixed in a mechanical mixer, having an optimum speed which yields good concrete that is neither inadequately mixed nor showing tendency of segregation. This avoids frequent washing. A small amount of water shall be fed first followed by all solid materials. Remainder of water shall be added after the solids. Mixing shall be continued until there is uniform distribution of materials and the mass is uniform in colour and consistency. The mixing time shall be counted after all the materials are in drum and shall be in accordance with IS: 1791/1963 but in no case mixing shall be done for less than two minutes.

b. Hand mixing: Hand mixing shall not be permitted except for unimportant structural members and purely at the discretion of the Corporation's Engineer. Hand mixing will not be permitted for concrete going into columns. When hand mixing is permitted, it shall be ensured that the mixing is continued until the mass is uniform in colour and consistency. the contractor shall use 10% extra cement for hand mixing for which no extra payment will be made. Hand mixing when permitted shall be done on platform.

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
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2.24 TRANSPORTING :

Concrete shall be handled from the place of mixing to the place of final deposit as rapidly as practicable by methods which will prevent segregation or loss of the ingredients. It shall be deposited as nearly as practicable in its final position to avoid re-handling or flowing. Wet concrete discharged from each batch of mixer shall be neatly collected and transported. Remnants from earlier batches shall be rejected and removed.

2.25 PLACING :

The concrete shall be placed in position and compacted before the initial setting time and shall not be disturbed subsequently. Concreting shall be carried out continuously upto construction joints; the position and arrangement of which shall be predetermined.

When the work has to be resumed on the surface which has hardened, it shall be thoroughly hacked, swept clean, wetted and covered with a layer of mortar composed of cement and sand in the same ratio as the cement and sand in the concrete mixture. This mortar shall be freshly mixed and placed immediately before placing of the concrete. Concrete shall be placed in shuttering by shovels or other approved implements and shall not be dropped from a height, say greater than 1 M or handled in a manner which will not cause segregation. Concrete which has already set shall not be allowed to be incorporated in the work even after adding cement and remixing.

2.26 DEBRIS ETC. REMOVED :

All debris, saw dust, etc. shall be removed from the shuttering before any concrete is placed. Care shall be taken to see that the shuttering is watertight and has been properly treated with approved composition to prevent absorption of water.

Shuttering for concrete shall be rigidly constructed of approved material and shall be true to the shape and dimensions described on the working drawing. Faces in contact with concrete shall be free from adhering grout, projecting nails, splits and other defects. Joints shall be sufficiently tight to prevent the leakage of cement grout and to avoid the formation of fins and other blemishes. Shuttering shall be secured so as to be strong enough to retain the correct shape during consolidation of concrete. Shuttering shall be true to line and braced and strutted to prevent deformation under the weight and pressure of the wet concrete, constructional loads, wind and other forces. The shuttering of beams and slabs shall be erected in such a way that the shuttering on the sides of the beams and soffits of slabs can be

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
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E-mail: ez_engineering@licindia.com
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removed without disturbing the beam bottoms. Re-propping of beams shall not be permitted. Immediately prior to placing of the concrete, the shuttering shall be well wetted.

2.27 PROTECTION AND PLACING IN LAYERS :

Concrete shall be placed in single operation to the full thickness of slabs, beams and similar members and shall be placed in horizontal layers not exceeding 1M deep in walls, columns and similar members. Concrete after placing shall be protected by use of covering to the approval of the Corporation's Engineer during first stages of hardening against high winds, hot sun and/or rain or surface water. No shock or vibrations shall be allowed to be imparted to forms supporting fresh concrete.

2.28 COMPACTION :

Concrete shall be thoroughly compacted during operation of placing and carefully worked around the reinforcement embedded fixtures and into corners of form work. The use of mechanical vibrators is strongly recommended. Sufficient number of vibrators (including stand by) of adequate capacities shall be used for compaction of concrete. Vibration shall be carried out by trained men and in the presence of a qualified supervisor trained in the use of vibrators and vibrated concrete. In certain portions where vibration is not effective, careful rodding and tamping shall be carried out and sufficient men employed to ensure that thorough consolidation takes place. Where manual compaction becomes necessary the workability of the mix should be controlled to suit such mode of compaction subject, of course, to compliance of strength requirements specified.

2.29 CONTINUOUS CONCRETING :

Concreting shall be carried out continuously up to predetermined positions of construction joints. The position and arrangement for construction joints shall be approved by the Corporation's Engineer. Rest pauses for meals etc. shall be subject to the Corporation's Engineer's approval.

2.30 PACKING ROUND REINFORCEMENT :

In the case of reinforced concrete work, the concrete shall be carefully consolidated round the reinforcement and care shall be taken to ensure that reinforcement is not displaced during the placing and compaction of concrete. If reinforcement moves out of its place, it must be brought back to position immediately.

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
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2.31 VIBRATION OF CONCRETE :

a. Number and size of vibrations: Vibrators shall be of sturdy construction, adequately powered and capable of transmitting to the concrete not less than 3500 impulses per minute when operating under load. The vibration shall be sufficiently tense to cause the concrete to flow or settle readily into place and visibly effect the concrete over a radius of at least 450 mm(18") when used in concrete having slump of 25mm. A sufficient number of vibrators (at least one vibrator for a rate of concreting of 1.5 Cum.i.e 50 Cu. ft per hour) shall be employed so that vibration throughout the entire volume of each layer of concrete and complete compaction are secured.

b. Manipulation of vibrators: Internal vibrators shall be keep constantly moving in the concrete and shall be applied at points uniformly placed not farther apart than the radius over which the vibrator is visibly effective. The vibrator shall not be held in one location long enough to draw out a pool of grout from surrounding concrete. The vibration shall be such that the concrete becomes uniformly plastic and there shall be at least 200 seconds of vibration per square metre (20 seconds of vibration per sq. ft.) of surface of each layer of concrete, computed on the basis of visibly effected radius and taking overlap into consideration, vibrations shall be stopped when air bubbles have practically cease coming to the surface.

22.3 **CURING :**

All concrete work shall be kept constantly wet for a minimum period of seven days after concreting Horizontal surfaces shall be kept covered with water ponded by means of bunds and vertical surfaces like those of columns, fins, etc. by burlaps kept constantly wet by water sprays. Mere sprinkling of water on vertical surfaces without sacks of burlaps will not be allowed. In respect of concrete made out of Pozzolana cement curing shall be continued for another eight days, viz. fifteen days in all.

2.33 TRADING SUPERVISOR :

It is essential that the contractor's supervisor who is in charge of the construction an all concrete works, whether reinforced or not, shall be skilled in this class of work and shall superintend personally the whole construction and pay special attention to:-

a. The quality, testing, proportioning and mixing of the materials and particularly control of water cement ratio.

b. Laying of materials in place and thorough consolidation of the concrete to ensure solidity and freedom from voids.

c. Sizes and positions of reinforcements.

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
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13.2 CONCRETE ORDERED TO BE DISMANTLED :

Where the Chief Engineer does not accept the poor or defective concrete and orders the same to be dismantled then the contractor shall dismantle such concrete at his expense and reconstruct the same to the Chief Engineer's satisfaction. Concrete thus dismantled will not be measured and paid for. The additional work if any, required to be carried out for re-concreting, shall be to the contractor's account.

2.35 CONCRETE RETAINED WITH RECTIFICATION :

Where the Chief Engineer in order to save time and where he considers adequate, orders that defective concrete be strengthened as directed by him the contractor shall carry out all rectification measures to Chief Engineer's approval at his expense. The concrete thus strengthened and accepted shall however, be paid at reduced rate .

2.36 HONEY COMBING :

a. Where honeycombed surfaces are noticed in the concrete, the contractor shall not patch up the same until examined by the Corporation's Engineer and decision given regarding the acceptance with rectification or rejection of the same. If contractor patches up such defects without the knowledge of the Corporation's Engineer, the corporation's Engineer will be at liberty to order demolition of the concerned concrete members to the extent be considers necessary. In such case, the contractor at his expense shall reconstruct demolished work. Demolished work shall not be measured and paid for.

b. If in the opinion of the Corporation's Engineer the honeycombing is harmful to the structure and where so directed by the Chief Engineer, the full structural members affected by honeycombing as decided by Chief Engineer shall be dismantled and reconstructed to Chief Engineer's approval at contractor's expense. The demolished concrete will not be measured and paid for.

Such honeycombed areas which are not severe in the opinion of Corporation's Engineering and can be retained rectification shall be dealt with as under:-

Patches are first treated with the coat of thin grout composed of 1 part of cement and 1 part of sand and then field with similar to that used in the concrete. The mortar is placed in layers not

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
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more than 10 mm thick and each layer is given a scratch finish to secure bond with the succeeding layer.

c. Such honeycombed areas which are not serve in the opinion of Corporation's Engineer and can be retained with rectification shall be dealt with as under :-

Patches are first treated with the coat of thin grout composed of 1 part of cement and 1 part of sand and then filled with mortar similar to that used in the concrete. The mortar is placed in layers not more than 10mm thick and each layer is given a scratch finish to secure bond with the succeeding layer.

2.37 OTHER DEFECTS :

Any other defects in concrete shall be made good as directed by the Chief Engineer at contractor's expense.

3. BRICK WORK

3.1 BRICKS :

a. The bricks shall be table moulded first quality of regular and uniform size, shape and colour, uniformly well burnt through out but not over burnt. They shall have plane rectangular faces with parallel sides and sharp, straight and right angled edges. They shall be free from cracks or other flaws. They shall have a frog of 10 mm depth on one of their first faces.

b. They shall give a clear metallic ringing sound when struck.

c. They shall show a fine grained, uniform, homogeneous and dense texture on fracture and be free from lumps of lime, lamination, cracks, airholes, soluble salts causing efflorescence of other defects which may in any way impair their strength, durability, appearance or usefulness for the purpose intended. They shall not have any part under burnt. They shall not break when thrown on the ground on their flat face in a saturated condition from a height of 60 cm.

d. Bricks of one standard size shall be used on one work unless specially permitted by the Executive Engineer. In part of Eastern Zone (i.e., West Bengal, Assam,Odisha and Bihar etc.) bricks which are commonly of size 25 x 12.5 x 7.5 cm. shall be used. The following tolerances are permitted in the standard conventional size adopted on a particular work :-

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
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Length	Plus or minus	3mm (about 1/8")
Breadth	Plus or minus	1.5mm (About 1/16")
Depth	Plus of minus	1.5mm (About 1/16")

e. After immersion in water, absorption by weight shall not exceed 20 percent of the dry weight of the brick when tested according to I.S.S. No. 1077-1976.

e. Unless otherwise specified, the load to crush the brick when tested according to I.S.S. No. 1077-1976 shall not be less than 50 Kg / Sq.cm.

3.2 MORTAR :

Specifications for mortar in brick work shall be as per I.S.S. 2116-1965

3.3 CONSTRUCTION DETAILS :

a. SOAKING :

All bricks shall be immersed in water for two hours before being put into work so that they will be saturated and will not absorb water from the mortar.

b. BATS:

No bats or cut bricks shall be used in the work unless absolutely necessary around irregular openings or for adjusting the dimensions of different course and for closers, in which case, full brick shall be laid at comers, the bats being placed in the middle of the coarse.

c. LAYING :

The bricks shall be laid in mortar to line level and shapes shown on the plans, slightly pressed and thoroughly bedded in mortar and all joints shall be properly flushed and packed with mortar and no hollows left anywhere. Bricks shall be handled carefully so as not to damage their edges. They should not also be thrown from any height to the ground but should be put down gently. All courses shall be laid truly horizontal and all vertical joints made truly vertical. Vertical joints in one course and the next below shall not come over one another and shall not normally be nearer than quarter of a brick length. For battered faces bedding shall be at right angles to the face. Fixtures, plugs, frames etc., if any, shall be built in at places shown in the plans while laying the

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
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courses only and not later by removal of brick already laid. Care shall be taken during construction to see that edges of bricks at quoins, walls, heads etc., are not damaged. The verticality of the walls and horizontality of the courses shall be checked very often with plump-bob and spirit level respectively.

d. **BOND**:

Unless otherwise specified, brick work shall be done in English bond.

e. **JOINTS:**

Joints shall not exceed 10mm (About 3/8") in thickness and this thickness shall be uniform throughout. The joints shall be raked out not less than 10mm (about 3/8") deep when the mortar is green where pointing is to be done. When the brick surfaces are to be plastered the joints shall be raked to a depth of 5mm when the mortar is green, so as to provide good key to plaster.

f. **UNIFORM RAISING** :

Brick work shall be carried up regularly in all cases where the nature of work will admit, not leaving any part 60 cm lower than another. But where building at different level is necessary, the breaks shall be stepped so as to give later a uniform level and effectual bond. Horizontal courses should be to line and level and even and face plumb or to batter as shown on the plan. The rate of laying masonry may be up to a height of 80 cm per day if cement mortar is used and 45 cm (about 18") if lime mortar is used.

3.4 SCAFFOLDING :

Scaffolding will be double or single as is warranted for the particular work. Put log holes shall be made good by bricks to match the face work when put logs are removed after ensuring that the holes behind are solidly filled in with 1:4:8 cement concrete.

3.5 CURING :

All brick work shall be kept well watered for 14 days after laying. Where pozzolana cement is used for mortar, the curing shall be extended by one week at the Contractor's expense.

3.6 EXPOSED WORK :

Where exposed brick work is prescribed, the usual specifications for the "Brick Work" as mentioned above will be applicable for "Exposed Brick Work" but in addition specially selected bricks shall be used for facing, ensuring regular and clean faces of uniform colour. No bricks which are broken , chipped wrinkled on which have irregular edges or corners shall be used. Depending on the quality of bricks and if instructed by the Corporation's Engineers, the

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EASTERN ZONAL OFFICE, ENGG. DEPTT. (4TH FLOOR)
"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
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E-mail: ez_engineering@licindia.com
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exposed face of every brick shall be rubbed before laying without extra charge. Wooden fillets 10 mm thick and 10mm wide shall be placed at the edge of joints so that no mortar comes on the surface of the bricks and a regular thickness of joints is maintained. The surface shall be rubbed down with brushes of bricks if necessary, and thoroughly washed. No mortar shall be allowed to stick to the surface, which shall be left clean to the Corporation's Engineer's satisfaction with all joints even and true to a straight line. Double scaffolding shall be used in exposed brick work.

3.7 REINFORCEMENT IN HALF BRICK THICK WALLS :

a. Half brick thick and brick on edge walls shall be provided with reinforcement consisting of 2 nos, 6mm dia M.S. round bars of 500mm long (each) as dowels, embedded in mortar 15mm thick at every fourth course and securely anchored at their ends where the partitions bonds with the cross walls. The cost of reinforcement in half brick thick and brick on edge walls shall be paid separately unless otherwise stated in the schedule of quantities.

3.8 RATES TO INCLUDE :

Apart from other factors mentioned elsewhere in this contract, the rate for items of brick work shall include for the following:

a. All labour, materials, use of tools, equipment and other items incidental to the satisfactory completion of brick masonry at all heights and levels.

b. Erecting and removing of all scaffolding, ladders and plant required for the execution of the work to the height and depths and shapes as shown on the plan or ordered by the Engineer.

c. Constructing brick work to lines, levels, batters, pillars, curves and to any position or shape, to any heights or levels including raking of joints and housing frames, fixtures etc.

d. Curing the brick work.

e. Removing of all stains and adhering mortar lumps on the brick work surfaces.

3.9 MEASUREMENTS :

a. Half brick thick and brick on edge walls shall be measured in Sqm. unless otherwise mentioned.

b. One brick thick wall and thicker walls shall be measured in Cum. Brick walls up to and including 3 bricks in thickness should be measured if multiples of half bricks which

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
E-mail: ez_engineering@licindia.com
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shall deemed to be inclusive of mortar joints. Widths of more than three bricks in walls will be measured actually and limited to the width specified.

c. No deductions or additions shall be made on any account for :-

i. Ends of dissimilar materials (i.e.,) joints, beams, lintels, posts, girders, rafters, purlins, trusses, corbels, steps etc.) up to 500 cm2 in section and

ii. Openings up to 0.1 m2 in section.

NOTE :

I. In calculating the area of openings, any separate lintels or sills be included along with the size of the openings but the end portions of the lintels shall be excluded and the extra width of debated reveals, if any, shall be excluded.

ii. Wall plates and bed plates, and beating of slabs, CHAJJAS and the like which the thickness does not exceed 10 cm and the bearing does not extend over the full thickness of the wall.

4. EXTERNAL CEMENT PLASTER

4.1 PREPARATION OF SURFACE

The walls to be plastered to have all joints raked out to a depth of 10mm , if not already done, R.C.C. surface shall be properly hacked to get good key to the plaster. Any unevenness shall be leveled before the plastering is applied. All dust and oil matter if any, shall be brushed and cleaned with a stiff bristle or wire brush, and the surface to be plastered shall be kept wet for 6 hours before plastering is commenced. If the surface becomes dry in spots such areas shall be moistured again to restore uniform surface.

4.2 PROPORTION OF MORTAR :

Unless otherwise mentioned, the proportion of external cement plaster for brick or concrete surface shall be 1:4 (1 cement: 4 sand). Sand shall be from approved source free from foreign matter, washed clean if necessary and shall be as per I.S. 1542- 1977. No more cement mortar shall be prepared than that can be used within half an hour. The mortar may be hand mixed or machine mixed. In hand mixed mortar, cement and sand in the specified proportion shall be thoroughly mixed dry on a clean impervious platform by turning over at least 3 times or more till a homogeneous and mixture of uniform colour is obtained. Fresh and clean water shall be added gradually through a rose and thoroughly mixed so that mix becomes homogeneous and each particle of sand shall be completely covered with a film of wet

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cement. Mixing platform shall be so arranged that no deleterious, extraneous material shall get mixed with mortar not the mixing water of the mortar shall flow out.

4.3 APPLICATION OF PLASTER :

The plastering shall be done in two coats namely under coat and finishing coat.

UNDER COAT :

The under coat shall be of cement mortar 1:4. Water proofing compound of approved make shall be added according to manufacturer's specifications to make the mortar waterproof. Patches of plaster 15 cm x 15 cm shall be put on about 3 m apart as gauges to ensure even plastering in one plane. The thickness of the under coat in any part shall not be less than 8 mm and more than 12mm. The mortar shall be firmly applied with somewhat more than the required thickness and well pressed into the joints and on the surface and rubbed and leveled with a flat wooden rules to give required thickness. Long straight edges shall be freely used to ensure perfectly plane and even surface. All corners must be finished to their true angles or rounded as directed. Plastering shall be done from top downward. Keys shall be formed on the surface by thoroughly combing it with wavy horizontal lines about 12mm apart and 3mm deep when the mortar is still plastic. Under coat shall be cured for not less than 2 days before finishing coat is applied.

FINISHING COAT :

Cement mortar for finishing coat shall have washed approved sand with slightly larger proportion of coarse material. The proportion of cement to sand shall be 1:4. The finishing coat shall be of such thickness as to make total average finish to thickness equal to the required plaster thickness as described. The finishing coat shall be not less than 4mm or not more than 8mm thick. The finished surface shall be true and even and shall be present uniform texture throughout and all joining mark shall be eliminated. After application the surface should be finished with a wooden float lying with cork and tapped gently to retain coarse surface texture. A steel trowel shall not be sued and overworking shall be avoided. Water shall not be applied to the surface of the finishing coat while working up, but patches showing signs of premature drying may be patted with a damp float. When the finishing coat has hardened, the surface shall be kept moist continuously for 14 days. In any continuously and day to day breaks made to coincide with Architectural breaks in order to avoid unsightly junctions. All mouldings shall be worked true to template and drawn neat clean and level. All exposed angles and junctions with door frames etc. shall be carefully finished as directed.

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4.4 All plaster work shall be kept most continuously for a period of 14 days. To prevent excessive evaporation on the sunny or windward side of the buildings in hot dry weather, matting or gunny bags may be hung over on the outside of the plaster in the beginning and kept moist.

4.5 **RATES TO INCLUDE :** Apart from other factors mentioned elsewhere in the contract, rates for the item of plaster shall include for the following :

i. Erecting, dismantling and removing scaffolding.

ii. Preparing the surface to receive the plaster.

iii. Providing cement plaster of the specified average thickness, in two coats, including waterproofing compound.

iv. All labour, materials, use of tools and equipment to complete the plastering as per specifications.

v. Curing 14 days.

vi. Any moulding work if shown on the drawings or as specified unless separately provided in the tender.

v. Plaster work in hands, arises, rounded angles, fair edges narrow returns, quirks, 'V' joints, splays, drip mouldings, making good to metal frames, junctions with skirting or dados, narrow widths and shall quantities, making good and pipes, conduits, timbers, sills, brackets railings, etc. and making good after all the subcontractors or nominated sub-contractors have done their work.

4.6. **MODE OF MEASUREMENT** :

All plastering work shall be measured in square metres. Dimensions shall be measured and quantity worked out correct upto two places of decimals in metre and square metre respectively. If the average thickness of plaster provided by the contractor is more than what is specified on any account, no extra payment will be made. For jambs, soffits, sills, etc. for openings not exceeding 0.5m2 each in area ends of joists, beams posts, etc. not exceeding 0.5m2 each in area and openings not exceeding 3m each deductions and additions shall be made in the following manner :

a. No deduction shall be made for ends of joints, beams, posts, etc. and opening not exceeding 0.5m2 each, and no addition shall be made for reveals, jambs, soffits, sills etc. of these openings nor for finishing the plaster around ends of joists, beams, posts etc.

b. Deductions for openings exceeding 0.5m2 but not exceeding 3m2 each shall be made as followed and no addition shall made for reveal, jambs, soffits, sills, etc. of these openings :

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i. When both faces of wall are plastered with the same plaster, deduction shall be made for one face only.

ii. When two faces of wall are plastered with different plasters or if one face is plastered and the other pointed, deduction shall be made from the plaster or pointing on the side of frames for doors, windows, etc. on which the width of reveals is less than that on the other side, but no deduction shall be made on the other side.

In case of openings of area above 3m2 each, deductions shall be made for the openings but jambs, soffits and sills shall be measured.

4.7 COMBED FINISH :

All the specification given above for sand finish shall apply to this as well except that in the case of combed finish, the finishing coat will be treated to have combed texture of approved pattern.

4.8 ROUGH CAST FINISH :

a. All the specifications given above for sand faced finish shall apply to this as well except for the application of plaster which is described below.

b. APPLICATION OF PLASTER :

The plastering shall be done in two coats namely under coat and finishing coat. The under coat shall be done same as in case of sand faced finish. The finishing coat shall contain a fairly coarse aggregate and shall be thrown on as wet mix and shall be left in rough condition. The mortar of the finishing coat shall consist of coarse aggregates of crushed stone or fine gravel of size generally 6 to 12 mm as approved by Executive Engineer and specially graded mixture, mixed with approved sand and cement. The proportion of cement to sand and aggregate/gravel shall be generally 1: 1½ : 3 The mortar shall be flung upon the under coat with large trowels to form an even protection coat,. The finishing coat must be applied while the under coat is still soft and plastic. The thickness of the finishing coat shall be about 12mm unless otherwise specified.

5. PAINTING:

5.1 WHITE WASHING :

A. MATERIALS:

White wash shall be prepared from fresh burnt fat lime. The lime shall be dissolved in a tub with sufficient quantity of water (about 4/5 litres/kg. of lime) and the whole thoroughly mixed and stirred until it attains the consistency cream. The wash shall be

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
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taken out in small quantities and strained through a clean coarse cloth. Clean gum dissolved in hot water shall then be added in suitable proportion of two grams of gum arabic to a litre of lime to prevent the white wash coming off easily when rubbed. Rice seize may also be used instead of gum, gum Regd. Neel colour added for whiteness.

B. SCAFFOLDING:

This shall be double or single according to requirements and as directed. If ladders are used pieces of old gunny bags or cloth bags shall be tied on their tops to avoid damage or scratches to the plastered surfaces, etc. proper stage scaffolding shall be erected when white washing the ceiling

C . PREPARATION OF SURFACE:

The surface shall be prepared by removing all mortar droppings and foreign matter other means as may be ordered by the corporation's Engineers to produce an approved clean and an even surface. All loose pieces and scales shall be scraped of and holes, cracks etc. stopped with mortar to match with the surrounding finish. In case where the surfaces have been previously white washed or colour washed, the old white or colour wash shall be entirely removed and surfaces broomed down before the new white wash is applied. In case the old white wash cannot be removed by brooming, the surfaces shall be cleaned by scraping.

D. APPLICATION OF WHITE WASH :

On the surface so prepared, the white wash shall be laid on with a brush. The first stroke of the brush shall be from top downwards, another from bottom upwards over the first stroke and similarly one stroke from the right and another from the left over the first brush before it dries. This will form one coat. Each coat must be allowed dry and shall be subject to inspection and approval before the next coat is applied. When dry, the surface shall show no signs of cracking. It shall present a smooth and uniform finish free from brush marks and it should not come off easily when rubbed with a finger. Minimum 3 coats of white wash shall be applied.

No portions in the surface shall be left out initially to be patched up later on. For old work, patches and repairs shall be white washed first. Thereafter, the whole surface shall be white washed with the required number of coats. For new work, the white washed surface shall present a smooth and uniform finish. Doors, windows, floors and other articles of furniture, etc

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shall be protected from being splashed upon. Splashing, droppings, if any, shall be removed and the surfaces cleaned.

E. RATES TO INCLUDE :

Apart from other factors mentioned elsewhere in this contract, the rates for white wash shall include for the following.

i. All labour material, equipment required for white washing.

ii. The surface for white wash including the scaffolding. Scaffolding including erection and removal.

iii. Providing and preparing the white wash.

iv. Preparing

v. Applying the white wash in three coats minimum. If a proper even surface is not obtained to the satisfaction of the Executive Engineer in 3 coats, contractor shall carry out additional coats of white wash to approval at Contractor's expenses.

F. MODE OF MEASUREMENT :

The measurement shall be in sq. metre. The mode of measurement shall be as applicable to that for plaster.

5.2 COLOUR WASH :

MATERIAL :

This shall be prepared by adding approved colouring matter to the white wash (prepared for white washing) according to that required. In all other respects the same conditions and specification as applicable to white wash shall also be applicable to colour wash.

5.3 DISTEMPERING :

POWDERED/DRY DISTEMPER:

a. MATERIAL :

The powdered/dry distemper shall be of approved make , colour and shade.

b. SCAFFOLDING :

This shall be double or single as required and directed.

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c. **PREPARING THE SURFACE :**

The surface to be distempered shall be cleaned and all cracks, holes and surfaces defects shall be repaired with gypsum and allowed to set hard. All irregularities shall be sand prepared smooth and wiped clean. The surface so prepared must be completely dry and free from dust before distempering is commenced. In the case for walls newly plastered, special care shall be taken to see that it is completely dry before any treatment is attempted. For the old surface which had earlier been distempered, the surface shall be cleaned of grease dust etc. the flaking of previous coatings, if any, shall be taken off. all cracks, holes, and surface defects shall be repaired with gypsum and allowed to set hard and then sand prepared smooth and wiped clean. But in case the surfaces are coloured or white washed, the wash must be removed thoroughly first.

d. **PRIMING COAT**:

The priming coat shall be applied over the completely dry surface in the manner recommended by the makers in the case of patent distempers. When no priming coat is a specified by the manufacturer a finely powdered chalk mixed with a thin solution of glue shall be applied to prepare a good, hard background the coating when dry being sand prepared as clean and smooth as possible.

e. **APPLICATION OF DISTEMPER :**

The instructions of the makers shall be followed regarding the preparation of the surface and application of priming and finishing coats. Distemper shall not be mixed in a larger quantity than is actually required for a day's work. Hot water should be used to prepare the mixture. Distempers shall be applied in dry weather with a broad stiff brush in long parallel strokes. The treated surface shall be allowed to dry and harden. Second or succeeding coats shall not be applied until the proceeding coat has been passed by the Executive Engineer. Two more coats of distemper shall be given in exactly the same manner as the first one but only after the earlier coat laid has thoroughly dried.

f. **RATED INCLUDES :**

The rate shall include all labour, materials, equipment and tools for carrying out the following operations:

i. Providing the primer and distemper and mixing the distemper.

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ii. Scaffolding.
iii. Preparing the surface to receive the priming and finishing coats.
iv. Applying the priming coat.
v. Applying the distemper in 3 coats minimum. If a proper even surface is not obtained to the satisfaction of the Executive Engineer in 3 coats, Contractor shall carry out additional coats of distemper to approval at contractor's expense.

g. MODE OF MEASUREMENT :

Similar to that for white washing**.**

5.4 OIL BOUND DISTEMPER :

The specification and conditions for this shall be the same as that applicable for dry distemper above except that oil bound distemper or approved make, shade and colour shall be used after applying priming coat of petrifying liquid or other primer as may be recommended by the manufacturers of distemper or as directed.

5.5 ACRYLIC EMULSION PAINT

MATERIAL :
The emulsion paint and primers of approved make , colour and shade.

SCAFFOLDING :

This shall be double or single as required and directed. If ladder are used, pieces of old gunny bags or cloth rags shall be tied on their tops to avoid damage of scratches to the plaster surfaces and flooring , etc. Proper stage scaffolding shall be erected when painting the ceiling.

PREPARATION OF THE SURFACE :

New surface : The surface to be painted shall be cleaned and all cracks, holes and surface defects shall be repaired with plaster of Paris for spot filling and with filler prepared with whiting, water and little quantity of paint for filling and levelling the wider areas.

PRIMING COAT :

The priming coat of the approved shade shall be applied over the completely dry surface in the manner as recommended by the paint manufacturers. The emulsion paint, in the

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
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priming coat, may be thinned down with 20% water or as recommended by the paint manufacturer. Turpentine or any other solvent shall not be used for thinning the paint.

APPLICATION OF EMULSION PAINT :

The recommendation of approved paint manufacturers, whose product is used shall be followed regarding the preparation of the surface and the application of the priming and finishing coats. The contractor shall arrange for technical assistance and supervision from the paint manufacturer, during the execution of the painting work. After the priming coat has been applied and is perfectly dried all holes scratches if any, shall be repaired as mentioned in "preparation of surface" and then the second coat of approved shade and manufacture shall be evenly applied and allowed to dry. The third coat shall be carefully applied to achieve smooth and even surface after the previous coat has dried up. Minimum 3 coats of paint shall be applied inclusive of primer coat. If a proper and even surface is not obtained to the satisfaction of the Executive Engineer in 3 coats, contractor shall carry out additional coats of painting to approval, at contractor's expense. care shall be taken that dust or other foreign materials do not settle or disfigure the various coats.

5.6. CEMENT PAINTING :

5.6.1 MATERIAL :

External waterproof painting shall be of approved colour. Manufacture - Snowcem/ Durocem or other equivalent and approved quality.

5.6.2 PREPARATION OF SURFACE :

Before painting is commenced on surface, all dirt, oil, grease, efflorescence and organic material shall be completely removed. The surface shall be wetted by sprinkling of water with fine spray. The surface shall be sprayed several times with a few minutes intervals between each spraying to allow the moisture to soak into the surface.

5.6.3 APPLICATION :

Cement paint solution shall be applied to the surface with hair brushes in a number of coats to get uniform finish. After the first coat of paint is hardened, it shall be cured with water at least for 24 hours, before the application of the second coat. At least 24 hours should elapse between the two coats, similarly, 3rd coat shall be given to get uniform colour.

5.6.4 CURING :

Cement paint work shall be kept damp at least for 7 days.

5.6.5 RATES TO INCLUDE :

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Apart from other factors mentioned elsewhere in this contract, the rate of providing cement paint shall include for the following :

a. All labour, materials and equipment to provide cement paint.

b. Scaffolding including erecting and removing.

c. Preparing the surface as stated above.

d. Applying 3 coats of approved Snowcem paint. If a proper and even surface is not obtained to the satisfaction of the Executive Engineer in the 3 coats applied, the Contractor shall provide additional coats painting to approval, at Contractor's expense.

e. Curing as stated above.

5.6.6 MODE OF MEASUREMENT :

Measurement shall be in Square Metre and as applicable to white wash. Nothing extra shall be allowed for painting the rough surface, for example, external sand faced plaster rough cast plaster etc.

6. STEEL AND IRON WORK

1. Rates for M.S. Door and window frames shall include for fabrication, cutting and bending to required size and shape, drilling, punching, counter sinking, welding, filling etc. finishing, erecting, fixing in position and all concrete work for grouting/ embedding wherever required including painting. Concrete for grouting/embedding shall not be considered in the measurement of the weight and shall not be paid separately also.

SPECIFICATION FOR PRESSED STEEL DOOR FRAMES:

I. MATERIAL:

a. Steel door framed shall be manufactured from commercial mild steel shall be 1.25mm thickness conforming to I.S.:435±-1976.

b. Steel door framed with or without fan light shall be made in the profiles described which may be manufactured to suit doors of either and, opening inwards or outwards as directed by Engineer-in-Charge.

II. CONSTRUCTION:

Each door framed shall consist of hinges, jamb, lock jamb, head and if Required, angle threshold. The whole shall be welded or rigidly fixed together by mechanical means. Where no angle threshold is required, temporary bar tie shall be screwed to the feet of frames in

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
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order to form rigid unit. Where no specified base ties shall be pressed mild steel 1.25mí thick adjustable to suit floor thickness of 35 or 40 mm and removable, or alternatively, threshold shall be provided for external frames

FABRICATION: The fixing lugs there shall be 3 adjustable lugs with the split and tail to each jamb without fan light, and 4 for jamb with a light. The head of the fixing lugs shall be of one of the following lengths.

i. 95mm long for use with profile A.
ii. 120mm long for use with profile B.
iii. 160mm long for use with profile C.

The head shall be made from flat steel strip 25mm wide and not less than 1.6 mm thick. The tail of the locks shall be 200mm long and shall be made to steel strips not less than 40mm wide and not less than 3mm thick.

Hinges 100mm mild steel butt thickness shall be used. For frames for door shutters width less than 90 cm. 3 hinges shall be welded to one jamb for single shutter. For frames for door shutters width more than 90 cm. 4 hinges shall be welded to one jamb for single shutter. 3 hinges of each jamb of framed shall be welded for double shutters.

In all cases the hinges, shall be fixed, that the distance from inside of the head rivet to the top of the upper hinges and the bottom of the lower, to floor is about 175 mm.

Hinges shall be made of steel 2.5 mm thick with a zinc coated removable pin of 6mm dia. The space between the two leaves of the hinge when closed shall be 3 mm and the leaf that is not welded to the frame shall have for counter sunk holes to take No. 10 wood screws.

MORTAR GUARDS:

Mortar guards as instructed by Engineer-in- charge shall be provided. These shall be welded to the frame, at the head of the frame for double shutter doors to make provision for bolts.

LOCKS STRIKE PLATE:

There shall be an adjustable lock strike plate of Steel, complete with mortar guard, to make provision for locks or latches complying with the relevant Indian Standards. Lock strike plate shall be of galvanized mild steel and fixed at 95 cm from the head of the frame.

SHOCK ABSORBERS:

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For side hung door shutters, there shall be not less Than buffers of rubber suitable material inserted in the holes in the rebate and one shall be located on the CENTRE line of the lock strike plate and other two at least 45 cm. above and below the centre line of the lock strike plate. For double shutter doors, there shall be two buffers of rubber or similar suitable material inserted in holes in the rebate in the lock jamb only at the head and spaces 15 cm. at either side of the centre line of the door.

FINISH :

The door frame shall be either hot drip galvanized or painted or as specified. The surface shall be thoroughly cleaned, free of dust, mill-scale dirt, oil etc. Either by mechanical means, for example, sand or shot blasting or by chemical means such as picking and then painted or galvanized as directed by Engineer-in-charge.
After pre treatment of the surface one coat of steel primer (Zinc Chromate) and two coats of enamel paints as directed by Engineer-in-charge shall be applied to the exposed surface.

MEASUREMENT:

The length shall be measured in running meter correct to a cm. out to out of the frames.

RATE:

The rate shall include the cost of labour and material involved in all the operation described above including one coat of approved steel primer (Zinc Chromate) and two coats of enamel paint etc., complete as directed.

6. WOOD WORK AND JOINERY

6.1 TIMBER

i. Unless otherwise specified all timber for frames and shutters for doors, windows, ventilators, cupboards etc., shall be first class, sound, well seasoned, C.P. Balarshah or other equivalent and approved teak and shall be free from knots, shakes, fissures, flaws, sun cracks and other defects. The planned surface shall be smoothened free from blemishes and discolorations. Timber shall be wrought, framed and cut to shape as shown on drawings and/or as directed.

ii. All timber for carpentry and joinery in touch with masonry or concrete shall be coal tarred or creosoted before fixing. All rough frame work in partitions, suspended ceilings and veneering

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to walls etc., shall be treated with approved wood preservative 'Bison' or other equivalent and approved as per manufacturer's instructions and specifications. The rates quoted shall provide for such treatments.

iii. All fully fabricated timber shall be air seasoned on site of work for a period of not less than two months to allow for any shrinkage that may take place. The preparations of timber for joinery is to commence simultaneously with the beginning of the project work generally and should proceed continuously until all the wood work is prepared and fixed/stacked on or near the site as the case may be. Generally wood shall be free from knots, however, wood with knots may be permitted provided individual hard and sound knot shall not be more than 40 mm n diameter and aggregate area of all the knots shall not exceed one half percent of the area of the piece

Teak wood shall be approved incorporating in the work Contractor should ensure wood work does not warp or show other defects due to lack of proper seasoning.

6.2 <u>HOLD FASTS</u> :

Three hold-facts shall be fixed to each post of the door from and two to each post of the window frame. Unless otherwise mentioned in the item, the M.S. Hold-fasts shall be of the Size 300mm x 35 mm and 6 mm and shall be fixed to the frames by means of screws and not nails. The other. End of the hold fast shall be fixed into jambs within 1:2:4 P.C.C if dimensions as directed.

Whenever asked for, rawl plugs or bolts as directed shall be used for rough grounds framing hangers etc. The rates quoted for wood work and joinery shall allow for all types of hold fasts as directed (Horns in frames shall be cut and shall not be used as hold facts)

6.3 <u>WORKMANSHIP AND CONSTRUCTION</u> :

i. The workmanship shall be first class and to the approval of the E.E. Scantling and boarding shall be accurately sawn and shall be of required width and thickness. All carpenter's work shall be wrought except where otherwise described. The workmanship and joinery shall be accurately set out in strict accordance with the drawings and shall be framed together and securely fixed in approved manner and with properly made joints. All work is to be properly tenoned, shouldered, wedged, pinned, braded etc. and properly glued with approved quality glue to the satisfaction of the E.E.

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ii. **SCREWS :**All screws to be used in wood work and joinery shall be of brass and not iron.

iii. **TOLERANCES** :

15mm (1/16") will be allowed for each wrought face of the sizes specified except where described as 'finished' in which case they shall hold to the full dimensions. For door/window frames tolerance shall be +/- 2/3 mm. in cross sectional dimensions and for shutters +/- mm in thickness +/- 2/3 mm in width of styles and rails. For flush door shutters tolerance in width/height shall be +/- 3 mm and on thickness +/- 1.2 mm.

iv. **PROTECTION :**

All wood work and joinery edges of timber frames etc., shall be protected from being damaged during construction by the Contractor.

v. If it is decided by the Employer to provide antitermite treatment, the Building Contractor shall coordinate his work suitably as directed by the Executive Engineer.

vi. Door/Window frames shall have cut rebates. Planted rebates shall not be permitted.

6.4 WOODEN FLUSH SHUTTERS (SOLID CORE TYPE)

a. Solid core flush shutters shall be of commercial or Teak veneered type as specified in the item manufactured by M/s Sita Board Mysore Commercial Union Ltd., or other equivalent and approved quality. An approved sample shall be deposited in the office of the Corporation's Engineer on site for reference. The shutters will be provided with lipping. Finished thickness of the shutter shall be as mentioned in the item.

b. **PARTITION BOARD :** Shall be of waterproof quality 'NOVA TEAK SUPER' (Phenol bonded, 3 layers flat pressed), manufactured by M/s Plywood Manufacturing Ltd., Bombay or other equal and approved.

6.5 TEAK WOOD PANELLED SHUTTERS :

Solid wood panels for shutter shall be of pattern and size specified. Wherever possible each panel shall be in a single width piece. But where two pieces are used, width of each piece should not be less than 12.5 cm. In order to avoid warping, splitting and cracking, normally pieces not exceeding 20 cm. in width should be used. When made from more than one

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pieces. The pieces shall be jointed with a continuous tongued and grooved joint and glued together and reinforced the longer dimension of the panel. Planes shall be framed in to grooves to the full depth of the groove leaving an air space of 1.6 mm and the faces shall be closely fitted to the sides of the groove. Mouldings to the edges of panel openings shall be scribed at the joints.

6.6 FIXTURES AND FASTENINGS :

Unless otherwise specified in the Schedule of Quantities each shutter shall be hung with three iron butt/parliamentary hinges of approved quality size and make with iron screws the things and screws bolt should be copper Oxide coated and the Contractors rate shall cover for providing and fixing hinges to the shutters. Unless otherwise specified in the Schedule of Quantities other fittings, if ordered, shall be paid separately as prime cost items. Hardware for doors and windows shall be of M/s Bivon, M/s Manmatha Hari & Sons, M/s De's Lock Industries, M/s Godrej, M/s Garnishor other equivalent and approved make.

6.7 FINISHING :

The wood work shall be finished by 3coat of painting. French polishing or wax polishing as specified in the item.

6.8 RATE TO INCLUDE :

Apart from other factors mentioned elsewhere in this Contract, the rate for item of wood work and joinery shall include for the following :-

i. All labour, materials and equipments for carrying out the work.

ii. Providing and fixing frames and shutters, fastening and fixtures including embedding in the floor about 40/50 mm deep and labour for fixing hardware fittings, supplied by L.I.C.I. or purchased under prime cost items.

iii. Bison or other equivalent wood preservative treatment to rough frame work in partitions, suspended frame work in ceilings and timber veneering to walls etc.

iv. Coal tarring / creosoting of embedded parts of woodwork in masonry and concrete.

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v. Unless otherwise specified, sheet glass (plain or frosted) for shutters of doors/windows/fanlight, as manufactured by M/s Hindustan Pilkington or other equal and approved.

vi. T.W. beadings/T.W. planted beads for fixing panels of shutters of doors, wherever required to be provided.

vii. Providing T.W. cover mould of approved size.

viii. 3 coats of 1st quality synthetic Enamel paint of approved colour and shade including primer as manufactured by M/s The Alkalis & Chemical Corporation of India Ltd. (With I.S.I. trade mark), M/s Goodlace Nerolac, M/s Jenson & Nicholson or equal and approved, 3 coats of French or wax polishing to approval as specified in the item.

6.9 MODE OF MEASUREMENT :

Timber Doors/Windows shall be measured in Sqm. over door, window frames if the item specified is composite one otherwise only shutter shall be measured in Sqm. Length shall be measured nearest to centimetre.

WOOD WORK AND JOINERY

1. Unless otherwise specified, rates quoted shall include for cost of copper oxidized iron butt hinges heavy quality extruded section, 3 nos. 100 mm size per shutter of doors and 2 Nos. 75 mm size per shutter of windows and ventilators with mild steel pins and copper oxidized screws. Hardware other than the hinges shall be paid separately.

2. Unless otherwise specified, rates quoted shall include for clear sheet waveless glass of approved make such as Triveni, Modi, Asahi or other Equivalent.

3. Doors shall be painted with 3 coats of synthetic enamel paints (First quality) of approved colour and shade including suitable primer. Although 3 coats of paints are specified, Contractor will have to do additional coats of paint, if well finished surface is not obtained to the satisfaction of the Superintending Engineer, Executive Engineer and there shall be no extra payment on account of this.

4. Panel inserts for door shall be both side commercial veneered particle water proof quality bonded with phenol formaldehyde synthetic resin adhesive and conforming to I.S./3097:1980.

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5. Timber in contact with masonry or concrete shall be coal tarred or creosoted before fixing and rates quoted shall include for the same.

6. Rates quoted for wood work and joinery shall include for rebates, joints, chamfers, molding, grooves, beads laps, rounded angles, notches, nails, screws, pins, anti-termite treatments etc.

7. Hardware for doors and windows shall be of approved make, all hardware shall be fixed with screws to match the hardware and rates quoted shall include for the same.

8. For factory made door shutters B.W.R. ply used as panel insert should confirm to I.S.: 303-1989.

9. All internal doors shall be provided 2 coats/or more if necessary at Synthetic enamel painting over a coat of primer.

10. Rate quoted by the contractor shall allow for above factors, all labour charges, all taxes and conveyance excluding cost of fixtures only.

11. Prime cost of item : Contractor shall purchased in the open market at competitive rates and fix in position hardwares, fixtures and fittings for doors etc., such as door handles, tower bolts, aldrobs, night latches, door stopper, safety chain, magic eye etc., of quality size and make approved by the Chief Engineer or his authorised representative, Contractor shall quote in item the percentage amount he would charge over the actual cost of the material and fixing them in position (Contractor will be paid the actual cost of materials, supported by vouchers plus percentage amount over it as per the quotation in this item.

    A set of the approved samples shall be lodged with the Chief Engineer until the completion of the work. The rates for the purchase of materials must be competitive. In case the Chief Engineer is able to obtain the quotation in the open market for any material similar in specification to the one obtained by the Contractor as per vouchers produced by him, then the Contractor will be paid only according to the competitive rates obtained by the Chief Engineer plus percentage amount over it as per this item and not according to the Contractor's claim. Hardwares for doors and windows shall be approved make and shall be fixed with required screws to match the hardware and rates quoted shall include for the same.

12. Flush doors shall be solid core ISI marked.

13. Factory makes panel door shutters as per IS: 1003 made from approved hard wood duly kiln seasoned as per IS-1141, chemically treated as per IS-401.

CONTRACTOR **CHIEF ENGINEER**

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8. CAST IN SITU MARBLE MOSAIC FLOORING, DADO AND SKIRTING.

8.1 CAST IN SITU MARBLE MOSAIC FLOORING :

i. PREPARATION OF SUB-GRADE : The sub-grade shall be prepared as for the cement concrete flooring.

ii. FLOORING COMPOSITION : This will compose of two layers, the bottom one called the 'Under coat' and the top one called the 'Top coat'. The bottom coat shall be 30mm thick and the top coat shall be 10mm thick. The total thickness shall be 40mm unless otherwise stated.

a. UNDER COAT :

The under coat will have the same proportion and consistency as for cement flooring and shall be mixed and placed in the same manner, except that no finishing shall be done to make the surface smooth ; the top surface of concrete in the under coat shall be kept sufficiently rough to form a key to the top coat.

b. ALUMINIUM STRIPS :

While laying the under coat, aluminium strips of 10 gauge and 40mm wide as separators shall be provided to form approved panels. The area of each panel in the flooring shall not exceed 1.5 Sq. Metres the longest side of any panel not exceeding 2 metres. The cost of providing aluminium strips in the flooring shall be included in the rate quoted for mosaic flooring.

c. TOP COAT :

The grading, proportion and colour of the marble chips shall be got approved from the Executive Engineer after preparing a few samples of cast in situ mosaic flooring. The proportion of white cement, grey cement, coloured cement, pigments and marble chips in the top coat shall be got approved from the Executive Engineer to get light shades, medium shades and dark shades as required. The proportion of cement to marble chips shall be 1:2. The top coat shall be laid as per I.S.:2114-1962.

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iii. POLISHING AND FINISHING :

After the top coat has hardened enough to prevent dislodgement of aggregate particles, the surface shall be machine polished and finally washed with 'TATRI' and then wax polished to give a smooth and shining surface.

iv. CURING :

The flooring shall be kept covered and damp till it is properly set and given final finish.

v. RATES TO INCLUDE :

Apart from other factors mentioned elsewhere in this contract, the rates shall include for the following:

a. Providing and laying 1:2:4 cement concrete for under coat in panels.

b. Providing and fixing aluminium strips to form panels.

c. Mixing the ingredients of terrazzo mix in white cement grey cement coloured cement/approved pigments and marble chips of approved quality, maximum size and graded down as required and laying it in the top coat.

d. Curing

e. Machine polishing and finishing as specified above.

vi. MODE OF MEASUREMENT :

The measurement shall be in Square Metre of cast in situ mosaic flooring provided.

8.2 DADO AND SKIRTING :

a. Dado and skirting shall be laid in two layers, the under coat being laid as plaster and the top coat with marble chips in white/grey/coloured cement as required.

b. UNDER COAT :

The under coat shall be in 1:3 cement mortar and shall be applied to the wall surface as per plaster. The thickness of the plaster shall be 12mm for brick and concrete faces, and 20mm for stone faces. The surfaces of the under coat shall be kept rough to form a key for the top coat of the marble chips in white/grey/coloured cement as required in different proportions.

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c. ALUMINIUM STRIPS :

Aluminium strips shall be provided minimum 10 gauge and width to suit the thickness of the dado (Inclusive of top coat). The aluminium strips shall be fixed in plaster when it is green. Spacing of aluminium strip shall not exceed 2 metres.

d. TOP COAT :

This shall be similar to the top coat in cast-in-situ mosaic flooring.

e. POLISHING :

The finished surface shall be rubbed with Carborandum stone and finally washed with "Tatri" and then wax polished to get smooth and shining surface. The surface shall be kept damp till it is properly set.

8.3 RATES TO INCLUDE :

Apart from other mentioned elsewhere in this contract, the rates shall include for the following :-

i. Applying under coat in 1:3 cement mortar and roughening the surface.
ii. Providing and fixing aluminium strips.
iii. Mixing the ingredients of terrazzo mix as required and laying it in top coat.
v. Curing.
v. Polishing and finishing the dado/skirting.

8.4 MODE OF MEASUREMENT :

i. Dado shall be measured in Square Metre.
ii. Skirting less than 30 cm. height shall be measured in running metre.

9. CAST IRON SOIL, WASTE, VENT AND RAINWATER PIPES AND FITTINGS

9.1 CAST IRON PIPE AND FITTINGS :

Cast iron soil, waste, vent and Rainwater pipes and fittings where specified shall conform to the latest Indian Standards Specifications for these pipes. The pipes shall have spigot and socket ends and shall be with or without ears as directed by the Executive Engineer.

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9.2 WEIGHTS :

The standard weights and thickness of pipes are given below and a tolerance up to minus 10% may however be allowed against these standard weights.

SOIL WASTE AMD VENT PIPE						
SAND CAST			SPUN IRON		RAIN WATER	
Nominal dia of pipe	Minimum Thickness	Nominal weight for 2 m long pipe exclusive of ears	Minimum thickness	Nominal weight for 2m long pipe	Minimum thickness	Nominal weight for 1.8 m long pipe exclusive of ears
Mm	**mm**	**kg**	**mm**	**kg**	**mm**	**kg**
50	5	12.65	3.5	9.2	3	7.5
75	5	18.36	3.5	13.8	3	11.0
100	5	24.15	4.0	21.0	3	14.0
150	5	35.66	5.0	38.5	4	26.0

9.2.1 These shall be free from cracks and other flaws. the interior of pipes and fittings shall be clean and smooth. These pipes shall be coated internally and externally with suitable coating material having a tar or other approved base, in accordance with relevant I.S. Specification for these pipes.

9.2.2 The access door fitting shall be of proper design so as not to form any cavities in which filth may accumulate. Doors shall be provided with 3mm rubber insertion packing and when closed and bolted they shall be watertight and airtight.

9.3 FIXING :

The pipes and fittings shall be fixed to walls at least 5cm clear of the finished surface of wall by using proper holder bat clamps. The pipes shall be fixed perfectly vertical or in a line as directed. The spigot end shall about the shoulder of the socket and leave no annular space in between. The pipes shall be strongly supported at the foot by a bed of cement concrete 1:3:6, 150 mm thick and rates quoted shall include for provision of the same. All soil pipes shall be carried up above the roof and shall have a suitable cowl. The bends in the bottom most soil or waste stack shall necessarily be of long radius and preferably made of two 135 degree C.I. bends.

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9.3.1 Connections between main pipe and the branch pipes shall be made by using proper branches and bends invariably with access doors for cleaning.

9.4 CEMENT MORTAR JOINTS :

Where specified, the pipes jointed with cement mortar joints shall be as under :
Closely twisted spun yarn gasket of such diameter as required to support the spigot of pipe at the proper grade and make truly concentric joints, and in one piece of sufficient length to pass around the pipe and lap at the top, shall be thoroughly saturated in cement paste. This gasket shall be laid in the socket for the lower third of the circumference of the joint and covered with cement mortar 1:1. The spigot of the pipe shall be thoroughly cleaned with a wet brush, inserted and carefully driven home after which a small amount of mortar shall be inserted in the annular space around the entire circumference of the pipe and solidly rammed into the joint with a caulking tool the mortar previously placed being driven ahead of the gasket. The remainder of the joint shall then be completely filled with cement mortar 1:1 and beveled off at an angle of 45 degrees with the outside of the pipe.

9.4.1 Where any water closet pan or earthen ware pan connected to such pan is to be jointed with C.I. soil pipe, the joint between the pan/trap and the socket of the C.I. pipe shall always be of a flexible nature and such joint shall be made with a mixture of bitumen and chopped asbestos fibre (not dust).

9.5 LEAD CAULKED JOINTS :

Where the pipes are to be jointed with lead caulked joints, the same shall be done as follows :
The annular space between the socket and spigot will be first well packed in with spun yarn leaving 25mm from the tip of the socket for lead. The joint may be leaded by using proper leading rings or if they are not available by wrapping a ring of hemp rope covered with clay round the pipe at the end of the socket, leaving a hole through which lead shall be poured in (for pipes with sockets facing upwards 12mm high clay bound on the socket edge may be used).

9.5.1 The lead shall be rendered thoroughly fluid and each joint filed in one pouring. Before caulking, the projecting lead shall be removed by flat chisels and then the joint caulked round with proper caulking tools and a hammer of 1 to 1 ½ kg. in weight in such a manner as to make the joint quite sound. After being well set up the joint is to be let flush, neat and even with the socket.

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9.6 TESTING :

All cast iron pipes and fittings including joints will be tested for gas tightness by a smoke test and hydraulic performance by a water test and left in working order after completion.

9.6.1 SMOKE TEST :

Smoke shall be pumped into the drains at the lowest end from a smoke machine which consists of a blow and burner. The materials usually burnt are greasy cotton waste which form clear pungent smoke which is easily detectable by sight as well as by smell if leaking at any point of the drain.

9.6.2 WATER TEST :

The water test may be applied before the appliances are connected and may be carried out in sections so as to limit the static head to 4.5 metres.

9.6.3 The contractor will have to rectify all defects traced in such tests at his own expense to the satisfaction of the Executive Engineer.

9.7. PAINTING :

All the exposed C.I. pipes and fittings shall be painted with two coats of oil paint of approved quality, manufacture, colour and shade to match the surroundings. The cost of such painting should be included in the contractor's rates.

9.7.1 The surface of the pipes and fittings to be painted shall be cleaned thoroughly. Red oxide or other approved primer shall be painted and allowed to dry. The finishing shall be done by painting 2 or more coats with paints in an approved colour and shade.

9.8 On no account shall lime mortar or lime concrete come in direct contact with C.I. pipes.

10. DRAINAGE

10. SALT GLAZED STONEWARE PIPE DRAINAGE

10.1 PIPES :

All pipes and fitting must be new and perfectly sound, free from fire cracks and imperfections of glazing, cylindrical and of standard nominal diameter, length and depth of socket. They shall be made of hard burnt stoneware of dark grey colour and thoroughly salt glazed inside and outside. These pipes and fittings shall conform to grade 'A' of the relevant latest IS. specifications for these pipes and fittings, unless otherwise specified.

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
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10.2 EXCAVATION OF TRENCHES FOR SALT GLAZED STONEWARE PIPES :

Excavation of trenches connected works such as road crossing, protection of existing service lighting and water etc., shall generally be carried out in accordance with the procedure describe earlier in respect of Cast iron pressure pipes and fittings. Trenches for drainage work shall be carried out to the required levels. Use of sight rail and boning rods shall be adopted during the whole process of excavation and laying of pipes. Any excavation more than required shall be made good in 1:3:6 PCC at contractor's cost.

10.3 EXCAVATION OF TRENCHES FOR SALT GLAZED STONEWARE PIPES :

Excavation of trenches connected works such as road crossing, protection of existing service lighting and water etc., shall generally be carried out in accordance with the procedure describe earlier in respect of Cast Iron pressure pipes and fittings. Trenches for drainage work shall be carried out to the required levels. Use of sight rail and boning rods shall be adopted during the whole process of excavation and laying of pipes. Any excavation more than required shall be made good in 1:3:6 P.C.C. at Contractor's cost.

10.3(a) CONCRETE SUPPORT OR PROTECTION :

Where it is desired to support or surround pipe sewers or drain, it shall be done in concrete 1:4:8 by adapting one of the following methods as specified.

10.3.1 BEDDING :

Bedding shall be rectangular in section and shall extend laterally at least 15 cm. beyond on both sides of the projection of the barrel of the pipe. The thickness of the concrete, below the barrel of the pipe shall not be less than 10 cm. for the pipes under 15 cm. and over in diameter. Where bedding is used alone, the concrete shall be brought up at least to the invert level of the pipe to form a cradle and to avoid the line contact between the pipe and the bed.

10.3.2 HAUNCHING :

Concrete hunching shall consist of a concrete bed as described for bedding with the full width of the bed carried up to the level of the horizontal diameter of the pipe and splays from this level carried upon both sides of the pipe from the full width of the bed to meet the pipe barrel tangentially.

10.3.3 SURROUNDING OR ENCASING :

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
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The surrounding or encasing shall be similar to hunching up to the horizontal diameter of the pipe and the top portion over this shall be finished in a semi-circular form to give a uniform encasing for the top hall of the pipe. Encasement may be provided when the maximum subsoil water-table levels is likely to rise above the top of barrel or where there is insufficient earth cover over the top of the barrel.

10.4 LAYING OF PIPES :

Pipes shall be carefully laid to the levels and gradients shown on the plans. Great care shall be taken to prevent sand etc., from entering the pipes. The pipes between the man-holes shall be laid truly in straight line without vertical or horizontal undulations. The pipes shall be laid with the socket leading up hill. The body for the pipe shall for its entire length rest on an even bed of concrete and places shall be excavated in the concrete to receive the socket of the pipe.

10.5 JOINTING :

In each joint, tarred gaskin or spun yarn soaked in neat cement slurry shall be passed round the joint and inserted in it by means of a caulking tool. More skeins of yarn shall be added and well rammed home.

10.5.1 The object of the yarn is to centre the spigot of one pipe within the socket of the other and to prevent the cement mortar of the joint penetrating into the pipes.

10.5.2 Cement Mortar 1:1 shall be slightly moistened and must on no account be soft or sloppy and shall be carefully inserted by hand into the joint. The mortar shall then be punched and caulked 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 then be finished off neatly outside the socket at an angle of 45 degree.

10.5.3 Any surplus mortar projecting inside the joint shall be removed and to guard against any such projections, sack or gunny bag shall be drawn past each after completion.

10.6 CURING :

The cement mortar joint shall be cured at least for seven days, before testing.

10.7 Quantity of Cement and Span yarn : The approximate quantity of cement and span yarn required for each joint for certain common sizes of pipes are given below for guidance :

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Nominal Dia of pipe mm	Cement Kg.	Span yarn Kg.
100	1	0.25
150	1.5	0.35
200	2	0.70
250	2.5	0.80
300	3.25	1.10
350	4.5	1.25
400	5.5	1.50

10.8 Jointing S.W. pipes with C.I. pipes : Where any C.I. soil, waste or ventilating pipe or trap is connected with stoneware pipe communicating with a sewer, the bedded spigot end of such C.I. pipe or trap shall be inserted into a socket of such S.W. pipe drain and the joint made with cement mortar 1:1.

10.9 Testing : All joint shall be tested to a head of 60 cms of water above top of the highest pipe between two man-holes.

10.9.1 The lowest end of the pipe shall be plugged watertight. Water shall then be filled in manhole at the upper end of the line. The depth of water in the manhole shall be 60 cm plus the diameter of the pipe. The joints shall then be examined. Any joint found leaking or sweating shall be remade or embedded into 15 cm layer of cement concrete 1:2:4. 30 cms. in length and the section re-tested, at the Contractor's expense until satisfactory results are obtained.

10.10 REFILLING :

Refilling in trenches for pipes shall be commenced as soon as the joint and concrete have been passed. The refilling on the top and around the drain shall be done with great care and in a manner as will obtain the greatest amount of compactness and solidity possible. For this purpose the earth shall be laid in regular layers of 15 cm. watered and rammed at earth layer. All surplus earth shall be disposed of as directed by the Executive Engineer.

11. STONEWARE STORM WATER DRAINS :

11.1 Storm Water Drains : When S.W. pipes are used for Storm water drainage, no concreting will be necessary. The cement mortar for jointing will be 1:3 or as specified. To avoid clogging of drains, both ends shall be kept plugged until the construction of manholes is completed in

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every respect. On compaction care shall be taken that each plug is removed and the face of the drain made smooth.

12 STONEWARE GULLY TRAPS :

12.1 Gully Trap : This must be new, perfectly sound free from fire cracks and other imperfections of glazing, of standard nominal diameter and other dimensions. It shall be made of hard burnt stoneware of dark grey colour and thoroughly salt glazed inside and outside.

12.1.1 Each gully rap shall have one C.I. grating 15 cm x 15 cm and one watertight C.I. cover with frame 30cm x 30cm (Inside dimensions) with machined seating faces.

12.2 EXCAVATION :

The excavation for gully traps shall be done true to dimensions and levels as indicated on plans or as directed by the Executive Engineer.

12.3 FIXING :

The gully trap shall be fixed on cement concrete foundation 70 cms squared and not less than 10 cm. thick. The mix for the concrete will be 1 : 4 : 8 (1 cement : 4 sand and 8 stone ballast 40mm). The jointing of gully outlet to the branch drain shall be done similar to jointing of S.W. pipes.

12.4 MASONRY CHAMBER :

After fixing and testing the gully and branch drain, a brick masonry chamber 30 x 30 cm (Inside as specified in first class brick in cement mortar 1:4 shall be built with 11 cm thick wall round the gully trap from the top of the bed concrete up to ground level, the space between the chamber walls and the trap being filled in with cement concrete of the specifications of bed concrete. The chamber shall be plastered internally and externally with cement mortar 1:3 (1 cement : 3 sand) 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.

12.5 C.I. COVER :

C.I. cover with frame 30x30 cm (Finished) or as specified with machined seating faces shall then be fixed on the top of the brick masonry with cement concrete 1:2:4 and rendered

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smooth. The finished to of covers shall be left 5 cm. above the adjoining ground level so as to exclude the surface water from entering the gully trap.

13. REINFORCED CEMENT CONCRETE PIPE DRAINAGE :

13.1 R.C.C. PIPES :

All pipes and fittings must be new and perfectly sound, free from cracks, cylindrically straight and of standard nominal diameter and length. They shall be made of reinforced cement concrete, manufactured by centrifugal or spun process and shall have an even texture. Each pipe shall have one collar with it. The pipes shall conform to latest Indian Standard Specifications and shall be of 'NP2' class, unless otherwise specified.

13.2 EXCAVATION OF TRENCHES :

Excavation of trenches and connected works such as road crossings, protection of existing services, lighting and watch etc., shall generally be carried out in accordance with procedure described earlier of Cast Iron Pressure pipes and Stoneware pipes.

13.3 CONCRETE SUPPORT :

Chairs made of cement concrete shall be used unless otherwise specified for supporting pipes. These shall be provided at suitable intervals which shall not exceed the length of pipe. In cases where the soil is made up or is very soft, other form of concrete supports may be resorted to form the bed of the trench below the pipe as directed by the Executive Engineer.

13.4 LAYING :

The pipes shall be carefully laid to levels and gradients shown in the plans and sections. Great care shall be taken to prevent sand etc., from entering the pipes. The pipes between two manholes shall be laid truly in straight lines without vertical or horizontal undulations.

13.4.1 The body of the pipe shall for its entire length rest on an even bed in the trench and places shall be excavated to receive the collar for the purpose of jointing.

13.5 JOINTING : A few skeins of span yarn soaked in neat cement wash shall be inserted in the groove at the end of the pipe and the two adjoining pipes butted against each other. 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 both ends of the collar. More skeins of yearn shall be added and well rammed home.

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13.5.1 The object of the yarn is to centre the two ends of the pipes within the collar, and to prevent the cement mortar of the joint penetrating into the pipes.

13.5.2 Cement mortar 1:1 (1 cement : 1 sand) shall be slightly moistened, and must on no account be soft or sloppy and shall be carefully inserted by hand into the joint. The mortar shall then be punched and chaulked 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 45 degree.

13.5.3 Any surplus mortar projecting inside the joint is to be removed and to guard against any such projection sack or gunny bag shall be drawn past each joint after completion.

13.6 **CURING** : The cement mortar joints shall be cured at least for ten days.

13.7 **TESTING AND REFILLING :** This shall be the same as described for S.W. pipe drains except that in the case of testing, the head of water for testing shall be 2 Meters above the top of the highest pipe between two manholes.

14. **STORM WATER DRAINS :** When concrete pipes are used for storm water drainage, the cement for the jointing shall be 1:3 (1 cement : 3 sand), or as specified. To avoid clogging of drains, both ends shall be kept plugged until the construction of manholes is completed in every respect. On completion care shall be taken that each plug is removed and the face of the drain made smooth.

15. **CAST IRON PIPE DRAINAGE :**

15.1 **APPLICATION** : C.I. pipe drainage may be adopted in the cases mentioned below where specified.

a. In bad or unstable ground where soil movement is expected.

b. In made-up or tripped ground.

c . To provide for increased strength where a sewer is laid at insignificant depth, where it is exposed or where it has to be carried on piers or above ground, and

d. Under buildings and where pipes are suspended in basements and like situations.

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"HINDUSTHAN BUILDING", 4, C.R. AVENUE, KOLKATA – 700072
PHONE: 033-22129077/22127443,
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15.2 **PIPE :** The pipes used shall conform to the latest Indian Standard specifications IS : 6163 for C.I. spigot and socket pipes unless otherwise specified.

15.2.1 All pipes shall be coated inside and outside while hot with an approved anticorrosive paint having a tar or other suitable base.

15.2.2 The nominal weights of the pipe shall be as per details below

Nominal dia of pipe MM	Nominal weight of pipes including socket length for pipes of over- all length 3.66 M. Kg.
80	44
100	52
150	85
200	

15.3 **EXCAVATION IN TRENCHES : LAYING AND JOINTING, REFILLING ETC. :**

Specifications for trenches and connected works for laying and jointing, refilling cast iron pressure pipes & stoneware pipes shall apply in this case.

15.4 **CONCRETE SUPPORTS :** In normal ground no concrete support or protection to C.I. pipes need be provided. Where supporting pipes are specified, these shall not be less than 30 cm in length (parallel to the axis of pipe) and at least equal in section to that described for hunching under concrete supports for S.W. pipes. Piers shall be built just behind the pipe sockets intermediate piers being provided where necessary.

16. **BRICK MASONRY OPEN SURFACE DRAINS.**

16.1 **SURFACE DRAINS** : The top of the drain shall always be kept 50 to 75mm above adjoining ground level so as not to admit water form surrounding area into it.

The overall depths of various sizes of drains shall be as follows:

Drain size	Depth

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10cm	15cm
15cm	23cm
23cm	30cm

16.1.1 The earth excavation shall be done true to levels and lines. The drains shall be build in 1st class brick in cement mortar 1:5 over a 10cm bed of cement concrete 1:5:10. The inside bottom concerns of the drain shall be rounded of by means of fine cement concrete 1:2:4. Inside of the drain, top and sides of the brick work shall be plastered with 12 mm cement mortar 1:3 finished with a floating coat of neat cement. The drain may be given as far as possible a uniform slope from the starting point to the discharging point.

16.2 BRICK MASONRY DRAINS WITH STONEWARE GLAZED CHANNELS :

The work shall be carried out as per specifications of open surface of drains except that the cement plaster of the inside of the drain shall be omitted and stoneware glazed channel of proper size shall be fixed in drain with cement mortar 1:1.

17. MANHOLES AND INSPECTION CHAMBERS :

17.1 Chambers : At every change of alignment, gradient or diameter of a drain there shall be a manhole or inspection chamber. The maximum distance between manholes shall not exceed 30 meters.

17.2 SIZE : The size of the manhole or inspection Chamber specified shall be the internal size of the manhole (between brick faces). The work shall be done strictly as per drawings and specifications.

17.3 EXCAVATION : The manhole shall be excavated true to dimensions and levels, shown on the plan or as directed by the Executive Engineer.

17.4 BRICK WORK : The bricks shall be of first quality, best locally available and from approved surface. The brick work shall be laid in cement mortar 1:3. The joints shall be made thoroughly leak proof.

17.5. PLASTER : The walls shall be plastered both inside and outside with 20mm thick cement plaster 1:3. Where subsoil water condition exists, the outside surface of the walls shall be plastered with the addition of approved water proofing compound.

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17.6 **FOUNDATION CONCRETE** : The manhole/inspection chambers shall be built on a base of cement concrete of mix 1:4:8 of thickness of atleast 15cm for chambers upto 1m. depth, at least 20cm for chambers from 1m. to 1.5m depth and atleast 30cm for inspection chamber of greater depth.

17.7 **POINTING** : Pointing shall be done with cement mortar 1:2 whenever required.

17.8. **CHANNELS AND BENCHING** : The channels and benching shall be done in cement concrete 1:2:4 and rendered smooth to the grade with cement mortar 1:2. The channel shall be semicircular in the bottom half and of diameter equal to the sewer. Above the horizontal diameter, the sides shall be extended vertically to the same level as the crown of the outgoing pipe and the top edge shall be suitably rounded off.

17.9 **R.C.C. COVER SLAB :** Cover slab shall be of RCC 1:2:4 of 100mm thickness or other specified with steel reinforcement as per details.

17.10 **FOOT RESTS :** Foot rests shall be provided in all inspection chambers and manholes over 0.8m in depth and shall be of C.I. square flats 25mm weighing at least 4.50 kg or as specified and shall be painted with coal tar. These shall be embedded in masonry in cement mortar at least 25cm, while the brickworks is in progress. They shall be set stagged into two vertical runs which maybe 38 cms apart horizontally and 30.5 cms apart vertically. The top foot rest shall be 45 cms below the manhole cover and the lowest not more than 30 cms above the benching.

17.11 **LEVELS OF INVERT** : Sewers of unequal sectional area should not join with level inverts in a manhole, but the crown of the sewers shall be kept at the same level and necessary slope given in the invert of the manhole chamber. The branch sewer should deliver sewage in the manhole in the direction of main flow and the junction must be made with care so that flow in the main is not impeded.

17.12 **HOUSE CONNECTIONS** : No drain from house fittings e.g. gully trap or soil pipe, etc. to manhole shall exceed a length of 6m unless it is unavoidable.

17.13 **MEASUREMENTS** : The depth of manhole shall be reckoned from the invert level of the channel to the top of the C.I. cover. The depth shall be measured correct to the nearest cm.

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17.14 **MANHOLE UPTO 1 METER** : This shall be of 0.80 x 0.80 M unless otherwise specified and is generally constructed within compounds for house drainage only, The thickness of brick walls shall not be less than 23 cms.

17.15 **MANHOLES OF DEPTHS BETWEEN 1.00 M AND 1.50 M** **:** This shall be of 1.2 M x 0.9M unless otherwise specified. The thickness of brick walls shall not be less than 23 cms.

17.16 **MANHOLE OF DEPTHS MORE THAN 1.5 METERS** **:** Circular chambers with a minimum diameter of 1.4 meters or rectangular chambers with minimum internal dimensions of 1.2 M x 0.09 Meter shall normally be provided unless otherwise specified. The brick work for the portion exceeding 1.5 Meters and upto 2.20 Meters shall normally be of 34.5 cms thickness, unless otherwise specified.

17.17 **DROP MANHOLES** **:** Where it is impractical to arrange the connection of the branch pipe sewer within 60 cm of the invert of the outgoing sewer in the manhole, a drop connection shall be provided, if the difference in level between the in-coming drain and the sewer dose not exceed 60cm the connecting pipe may be directly brought through the chamber wall and the fall accommodated by constructing a ramp in the benching of chamber.

17.17.1 The connection shall be made by constructing a vertical shaft outside the manhole chamber as shown in drawings or directed by the Executive Engineer. The rates quoted shall include for providing the requisite length of SW or RCC pipe embedded in the masonry or PCC at the upper and lower ends of the drop arrangement, providing and fixing SW or RCC right angled bend and double tee junction of the requisite size including cutting ends if required and jointing, providing 11cm thick brick masonry in 1:2 cement mortar or PCC encasement around including finishing with cement plaster 1:1, 20 mm thick and excavation and plugging the open mouths of the double tee junctions and house connection pipes wherever directed.

18. **C.I. MANHOLE COVERS** **:**

18.1 **COVERS** : The C.I. manhole covers and frame shall be cleanly cast and shall be free from air and sand holes, cold shuts and warping which are likely to impair utility of castings. They shall be of tough homogeneous cast iron, or heavy, medium or light duty type as specified. The sizes specified are the clear internal dimensions.

The minimum weights of the various types of manhole covers with frames and their internal sizes will be as given below.

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SL. No.	Description	Clear opening mm	Minimum weight of cover kg.	Minimum weight of frame. kg.	Total weight weight kg
1.	Heavy Duty Circular	500 dia.	118	111	229
2.	Medium Duty Rectangular	455x610	80	64	144
3.	Medium Duty Circular	500 dia.	58	58	116
4.	Light Duty Rectangular Double seal	455x610	29	23	52

18.2 Manhole covers with double seal shall be used near buildings and within compounds. When the inspection Chamber is built in domestic premises where they are not subjected to wheeled traffic head light duty. C.I. covers may be used. When it is build within the metalled width of the road under heavy vehicular traffic, it shall be provided with heavy duty C.I. cover. Medium duty covers shall be used in light traffic conditions such as internal approach roads and cycle tracks.

18.2.1 The covers used in manholes on sewer lines shall invariably bear the work "SEWER" on the top, and those used for storm water drains shall bear work S.W.D. These makings shall be done during casting of the covers.

18.2.2 The frame of manholes cover shall be embedded firmly in the RCC slab or plain concrete as the case may be on the top of the masonry.

18.2.3 After the completion of the work manhole covers shall be seated by means of thick motor grease. All exposed surfaces of the frames and cover shall be painted with coat tar. The cost of such work should be included in the Contractor's rates.

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APPENDIX TO CONDITIONS OF CONTRACT

Sub: E-TENDER (PERCENTAGE RATE) FOR PROPOSED EXTERNAL & INTERNAL REPAIRING AND PAINTING WITH RENOVATION OF FLOORS & TOILETS OF HOWRAH GUEST HOUSE AT 6/5, G.T.ROAD, PANCHANANTALA MORE, HOWRAH MAIDAN, HOWRAH. (Working Office/GH).

ESTIMATED COST : Rs. 42,81,324.70
PERIOD FOR COMPLETION : 03 (Three) Months
EARNEST MONEY DEPOSIT : Rs.86,000.00

Sl. No.	Description	Remarks
1	Validity of Tender	The tender should remain valid up-to **Three months** from the last date of submission of tender for acceptance.
2	Date of commencement	Either 14 (Fourteen) days from the date of acceptance letter issued to the contractor OR The day on which contractor is instructed to take possession of the site, whichever is earlier.
3	Date of completion	**03 (Three) Months** from the date of commencement
4	Liquidated damages for delay	Compensation in the form of Penalty for delay of work @ 0.50% of the contract Sum per week Maximum of 10%.
5	Period of final measurement	**60 (Sixty)** days from the date of completion of contract
6	Interim certificate	**Rs.15.00 Lakhs** as per decision of Competent Authority.
7	Period of honouring interim certificate	**20 (Twenty)** days
8	Period of honouring final certificate	**90 days** from the date of submission of final bill with details.
9	Security Deposit	**@ 5% on Accepted Tender amount.**
10	Recovery of Security Deposit	In case of Cash option, the Security Deposit shall be recovered from R.A. Bills at 7.5% of Gross amount of bill **till the sum along with sum already deposited as EMD equals the total security deposit.**
11	Defect Liability Period	12 months from the date of virtual completion of the work
12	Contractor's All Risk Policy	On full accepted tender amount.
13	Third Party Liability	Minimum on 7.5% of accepted tender amount
14	Workmen's Compensation Policy	This shall be mutually decided by department and contractor depending on labour (skilled / unskilled) involvement, approved by Head of the Deptt. Of office issuing Acceptance letter irrespective of estimated value of work .

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15	No Claim Certificate	To be given on Contractors letter head.
16	Insurance policy	Insurance Policies (Workmen's' Compensation and Contractors all risk with Third party Insurance Policies) if not extended on time by construction associates, then LIC shall proceed with extension of this Insurance policies and apart from financial expenses, LIC shall apply penal cost of Rs.10,000/- as admin charges and Rs 25,000.00 as penalty for each extension of such policy from construction associates/ contractor's bill.
17	Recovery of Electricity charges from Contractors bill, if used from LIC source.	0.25% of the Gross value of work done.
18	Recovery of Water charges from Contractors bill, if used from LIC source.	0.25% of the Gross value of work done.

NO CLAIM CERTIFICATE CUM RECEIPT
(To be given on Contractor's letterhead)

"Received Rupees _____ (Rupees_____) being the amount against my/our final bill dated _____ for_____ (Name of Work) in full and final settlement of bill.

Contractor
(Signature of Contractor on Revenue stamp)

Rubber stamp/seal of the contractor /company

NOTE:

1.The GST on works contract shall be paid by the Corporation over and above the value of work done, at the applicable rates during the contract period.

2. L**abour cess:** Rates are inclusive of Labour cess and labour cess will be deducted from contractor's bill.

3. ~~Water charges, Electricity charges,~~ penalty on account of non renewal of Insurance, liquidated Damages if imposed will attract GST at applicable rates during contract period.

4. TDS on GST would be deducted as per prevailing rules.

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FORFEITURE OF EARNEST MONEY DEPOSIT.

1) If the lowest tender withdraws his tender before the expiry of validity period or before the issue of letter of acceptance whichever is earlier or makes any modification in the terms and conditions of tender which are not acceptable to department, then the department shall, without prejudice to any other right or remedy be at liberty to forfeit 25% of the earnest money and to refund the balance.

2) If the contractor fails to furnish the prescribed Security Deposit within the prescribed period or duly approved extended period, 50% earnest money will be absolutely forfeited automatically without any notice and the balance 50% will be refunded.

3) In case of forfeiture of earnest money as prescribed above, the tenderer shall not be allowed to participate in the tendering process of the work.

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BANK ACCOUNT AND OTHER DETAILS:

Sl. No	Description	Details
01	Name of the Company/Firm/Entrepreneur Institute, etc	
02	Address	
	Phone Number	Mobile:
		Land Line:
	E-Mail ID	
03	Bank Account Details:	
A.	Account No	
B.	Type of Account	
C.	IFSC/RTGS Code	
	(Enclose Xerox copy of the Cheque leaf)	
04	PAN No *	
05	TIN Registration No.*	
06	GST IN Registration No.*	

I declare that, the above furnished information is correct. During the contract period, if any changes took place in the above said information, the same will be informed with the valid reasons.

SIGNATURE OF CONTRACTOR

(* Self Attested copies to be enclosed)

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SCHEDULE OF QUANTITY

(Separate Sheet Page No. 1 to 10)

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