



GOVERNMENT OF MIZORAM
MIZORAM HEALTH SYSTEMS STRENGTHENING PROJECT
(MHSSP)

REQUEST FOR BIDS NO: MHSSP/CW/RFB-2022/02

NATIONAL OPEN COMPETITIVE PROCUREMENT

(One-Envelope Bidding Process with e-Procurement)

(Through e-procurement mode only – <https://mizoramtenders.gov.in>)

(FOR ITEM RATE/ADMEASUREMENT CONTRACTS IN CIVIL WORKS)

Name of Work: Repair and Renovation of District Hospitals in Mizoram (5 Lots)

*Officer Inviting Bids: Project Director, Mizoram Health Systems Strengthening Project.
Health & Family Welfare Department, Government of Mizoram
MG Road, Tuikhuahtlang, Aizawl, Mizoram*

Period of sale of bidding document	From 21.11.2022 to 05.01.2023
Time and Date of Pre-bid Meeting	2:00 PM, 06-12.2022
Last date and time of receipt of bids	12:00 Noon, 5.01.2023
Time and date of opening of bids	2:00 PM, 5.01.2023
Place of opening of bids	Office of the Project Director, Mizoram Health Systems Strengthening Project (MHSSP) Office, 2nd Floor, Meeting Room, MG Road Tuikhuahtlang, Aizawl, Mizoram

REQUEST FOR BIDS

(RFB)

GOVERNMENT OF MIZORAM

MIZORAM HEALTH SYSTEMS STRENGTHENING PROJECT (MHSSP)

REQUEST FOR BIDS (RFB) (One-Envelope Bidding Process with e-Procurement)

NATIONAL OPEN COMPETITIVE PROCUREMENT

Name of Project: Mizoram Health Systems Strengthening Project (MHSSP)

Contract Title: Repair and Renovation of District Hospitals in Mizoram (5 Lots)

Loan No. : 9227-IN

RFB Reference No.: MHSSP/CW/RFB-2022/02

Date: 21.11.2022

1. The Government of India has received financing from the World Bank towards the cost of the “**Mizoram Health Systems Strengthening Project (MHSSP)**” and intends to apply part of the proceeds toward eligible payments under the contract for repair and renovation of District Hospitals in Mizoram as detailed in the table below.
2. Bidding will be conducted through national open competitive procurement using a Request for Bids (RFB) as specified in the World Bank’s “Procurement Regulations for IPF Borrowers, July 2016, Revised August 2018” (“Procurement Regulations”), and is open to all Bidders as defined in the Procurement Regulations.
3. Bidders from India should, however, be registered with the Government of Mizoram or other State Governments/ Government of India PWD in appropriate class, or State/ Central Government Undertakings, or any State/ Central Government department. Bidders from India, who are not registered as above, on the date of bidding, can also participate provided they get themselves registered by the time of contract signing, if they become successful bidders.
4. **The Health and Family Welfare Department, Government of Mizoram (implementing agency)** now invites sealed Bids in one envelope system through e-procurement from the eligible Bidders for the repair and renovation works detailed below in the table. The bidders may submit bids for any one lot or all lots of the works indicated therein. Interested bidders may obtain further information and inspect the bidding document at the address given below during office hours. Bidders are advised to note the clauses on eligibility (Section I Clause 4) and minimum qualification criteria (Section III – Evaluation and Qualification Criteria), to qualify for the award of the contract. In addition, please refer to paragraphs 3.14 and 3.15 of the “Procurement Regulations” setting forth the World Bank’s policy on conflict of interest.

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5. Bidders may bid for one or several lots, as further defined in the bidding document. Bidders wishing to offer discounts in case they are awarded more than one lot will be allowed to do so, provided those discounts are included in the Letter of Bid.
 6. The bidding document should be downloaded from Mizoram e-procurement website <https://mizoramtenders.gov.in> . The bidders would be responsible for ensuring that any addenda available on the website is also downloaded and incorporated.
 7. Bids must be delivered to **“Project Director, Mizoram Health Systems Strengthening Project, Health & Family Welfare Department, MG Road, Tuikhuahtlang, Aizawl, Mizoram” on or before 12:00 Noon on 5.01.2023 and will be publicly opened on the same day at 1:00 PM**, in the presence of the Bidders’ designated representatives who wish to be present. If the office happens to be closed on the date of receipt of the bids as specified, the bids will be received and opened on the next working day at the same time and venue. Late Bids will be rejected.
 8. All Bids must be accompanied by a Bid Security of the amount specified for the work in the table below, drawn in favour of **“Mizoram Health Systems Strengthening Project”**. Bid security will have to be in any one of the forms as specified in the bidding document and shall have to be valid for 45 days beyond the validity of the bid.
 9. A pre-bid meeting will be held on 06.12.2022 at 1:00 PM at the **“office of Project Director, Mizoram Health Systems Strengthening Project, Health & Family Welfare Department, MG Road, Tuikhuahtlang, Aizawl, Mizoram” and also by online (Meeting link is given below)** to clarify the issues and to answer questions on any matter that may be raised at that stage as stated in ITB Clause 7.4 of ‘Instructions to Bidders’ of the bidding document. Bidders are advised to obtain the bidding document prior to the pre-bid meeting in order for bidders to have a good understanding of the scope of work under this contract for discussion and clarification at the pre-bid meeting.
Pre-Bid Meeting Link: <https://meet.google.com/cxb-yphen-zxe>
 10. Other details can be seen in the bidding document.
 11. The address for communication is as under:

Office of the Project Director,
Mizoram Health Systems Strengthening Project,
Health & Family Welfare Department,
Tuikhuahtlang, MG Road, Aizawl, Mizoram
Pin code: 796001
Telephone: 7005298129
Email: procurement@pmu.mzhssp.in

TABLE

Lot No	Name of Work	Cost of Bid Document (Rs).	Bid Security * (Rs. Lakh)	Period of Completion
1	2	3	4	5
Lot 1	Repair and Renovation of Civil Hospital Aizawl	2,500	3.75	12 Months
Lot 2	Repair and Renovation of District Hospital Champhai	2,500	1.87	12 Months
Lot 3	Repair and Renovation of District Hospital Lawngtlai	2,500	2.15	12 Months
Lot 4	Repair and Renovation of Civil Hospital Lunglei	2,500	3.92	12 Months
Lot 5	Repair and Renovation of District Hospital Siaha	2,500	2.75	12 Months



Signature

(Employer)

Name: Project Director
Address: Office of the Project Director
Mizoram Health Systems Strengthening Project
Health & Family Welfare Department,
Tuikhuahtlang, Aizawl, Mizoram
Pin code: 796001

Tel. No: 7005298129

Email: procurement@pmu.mzhssp.in

Checklist for reference:

(This is only reference and ready recknor. The bidder is requested to provide all the relevant documents as stipulated in the bid document)

S. N.	Documents needed from the bidder
1	Registration of the bidder
	1. Bidder's legal name
	2. Bidder's country of constitution
	3. Bidder's year of constitution
	4. Bidder's legal address in country of constitution
	5. Bidder's authorized representative (name, address, telephone numbers, fax numbers, email address)
2	Experience Documentary Evidence as per performa in Section III
3	1. Power of Attorney to sign the bid document
	2. Agreement with Sub Contractor (If applicable)
4	Letter of Bid as per performa in section IV
5	Technical Proposal Form as per performa in section IV
6	ESHS Management Strategies and Implementation Plans as per performa in section IV
7	Code of Conduct: Environmental, Social, Health and Safety (ESHS) as per performa in section IV
8	Forms for Personnel as per performa in section IV
9	Resume of proposed personnel as per performa in section IV
	1. Project Manager
	2. Site Engineer
	3. Environmental, Health & Safety Engineer
10	Forms for Equipment
11	Form-ELI -1.1: Bidder information Form as per performa in section IV
12	Form CON – 2 Historical Contract Non-Performance, Pending Litigation and Litigation History as per performa in section IV
13	Form CON – 3: Environmental, Social, Health, and Safety Performance Declaration as per performa in section IV
14	FORMAT 3.1 Historical Financial Performances The Bidder should also submit these details of for Sub Contractor as per performa in section IV
15	Form for Current Contract Commitments/Works in Progress as per performa in section IV
16	Bill of Quantities
17	Format for evidence of access to or availability of cash flow as per performa section IV (Form FIN 3.1 A)
18	Annual Construction turn over as per performa section IV (Form FIN 3.2)
19	Balance sheet and Profit & Loss statement
20	General construction experience form 4.1
21	Similar construction experience form 4.2 (a)
22	Construction experience in key activities form 4.2 (b)
23	Manufacturer Authorization as per performa in section IV

24	Tender Document Fees
25	Bid security
26	Original Bank solvency as per performa section IV (Form Fin 3.1(A))

Table of Contents

PART 1 – Bidding Procedures	9
Section I - Instructions to Bidders	10
Section II - Bid Data Sheet (BDS)	38
Section III - Evaluation and Qualification Criteria	45
Section IV - Bidding Forms	59
Section V - Eligible Countries	329
Section VI - Fraud and Corruption	330
PART 2 – Works’ Requirements	332
Section VII - Works’ Requirements	333
PART 3 – Conditions of Contract and Contract Forms	387
Section VIII - General Conditions of Contract	388
Section IX - Particular Conditions of Contract	432
PART 4 – The procedure for participation in e-tendering	479

PART 1 – Bidding Procedures

Section I - Instructions to Bidders

A. General

1. Scope of Bid

1.1 In connection with the Specific Procurement Notice - Request for Bids (RFB), **specified in the Bid Data Sheet (BDS)**, the Employer, as **specified in the BDS**, issues this bidding document for the provision of Works as specified in Section VII, Works' Requirements. The name, identification and number of lots (contracts) of this RFB are **specified in the BDS**.

1.2 Throughout this bidding document:

- (a) the term “in writing” means communicated in written form (e.g. by mail, e-mail, and fax, including if **specified in the BDS**, distributed or received through the electronic-procurement system used by the Employer) with proof of receipt;
- (b) if the context so requires, “singular” means “plural” and vice versa;
- (c) “Day” means calendar day, unless otherwise specified as “Business Day”. A Business Day is any day that is a working day of the Borrower. It excludes the Borrower's official public holidays;
- (d) the term “ES” means environmental and social (including Sexual Exploitation, and Abuse (SEA)), and Sexual Harassment (SH);
- (e) “**Sexual Exploitation and Abuse**” “(SEA)” means the following:
 - (i) “**Sexual Exploitation**” is defined as any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another.
 - (ii) “**Sexual Abuse**” is defined as the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;

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- (f) **“Sexual Harassment” “(SH)”** is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature by the Contractor’s Personnel with other Contractor’s or Employer’s Personnel;
 - (g) **“Contractor’s Personnel”** is as defined in Sub-Clause 1 (ii) of the General Conditions of Contract; and
 - (h) **“Employer’s personnel”** is as defined in GCC Sub-Clause 1 (nn) of the General Conditions of Contract.

A non-exhaustive list of (i) behaviors which constitute SEA and (ii) behaviors which constitute SH is attached to the Code of Conduct form in Section IV.

2. Source of Funds

2.1 The Borrower or Recipient (hereinafter called “Borrower”) **specified in the BDS** has received or has applied for financing (hereinafter called “funds”) from the International Bank for Reconstruction and Development or the International Development Association (hereinafter called “the Bank”) in an amount **specified in the BDS**, toward the project **named in the BDS**. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which this bidding document is issued.

2.2 Payment by the Bank will be made only at the request of the Borrower and upon approval by the Bank, and will be subject, in all respects, to the terms and conditions of the Loan (or other financing) Agreement. The Loan (or other financing) Agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, equipment, plant, or materials, if such payment or import is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the Loan (or other financing) Agreement or have any claim to the proceeds of the Loan (or other financing).

3. Fraud and Corruption

3.1 The Bank requires compliance with the Bank’s Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG’s Sanctions Framework, as set forth in Section VI.

3.2 In further pursuance of this policy, bidders shall permit and shall cause their agents (whether declared or not), subcontractors, sub-consultants, service providers, suppliers,

and their personnel, to permit the Bank to inspect all accounts, records and other documents relating to any initial selection process, prequalification process, bid submission, proposal submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the Bank.

4. Eligible Bidders

4.1 A Bidder may be a firm that is a private entity, or a state-owned enterprise or institution subject to ITB 4.6, or any combination of them in the form of a joint venture (JV), under an existing agreement, or with the intent to enter into such an agreement supported by a letter of intent, unless otherwise **specified in the BDS**. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the Bidding process and, in the event the JV is awarded the Contract, during contract execution. This authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all members. Unless **specified in the BDS**, there is no limit on the number of members in a JV. The joint venture agreement shall be registered in the place **specified in BDS** so as to be legally valid and binding on members.

4.2 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this Bidding process, if the Bidder:

- (a) directly or indirectly controls, is controlled by or is under common control with another Bidder; or
- (b) receives or has received any direct or indirect subsidy from another Bidder; or
- (c) has the same legal representative as another Bidder; or
- (d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the Bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
- (e) any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the Bid; or

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- (f) any of its affiliates has been hired (or is proposed to be hired) by the Employer or Borrower as Project Manager (Engineer) for the Contract implementation;
 - (g) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the BDS ITB 2.1 that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm;
 - (h) has a close business or family relationship with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding document or specifications of the contract, and/or the Bid evaluation process of such contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Bank throughout the procurement process and execution of the contract.

4.3 A firm that is a Bidder (either individually or as a JV member) shall not participate in more than one Bid, except for permitted alternative Bids. This includes participation as a Subcontractor in other Bids. Such participation shall result in the disqualification of all Bids in which the firm is involved. A firm that is not a Bidder or a JV member may participate as a subcontractor in more than one Bid.

4.4 A Bidder may have the nationality of any country, subject to the restrictions pursuant to ITB 4.8. A Bidder shall be deemed to have the nationality of a country if the Bidder is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or sub-consultants for any part of the Contract including related Services.

4.5 A Bidder that has been sanctioned by the Bank, pursuant to the Bank's Anti-Corruption Guidelines, in accordance with its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework as described in Section VI

paragraph 2.2 d., shall be ineligible to be prequalified for, initially selected for, bid for, propose for, or be awarded a Bank-financed contract or benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall have determined. The list of debarred firms and individuals is available at the electronic address **specified in the BDS**.

4.6 Bidders that are state-owned enterprises or institutions in the Employer's Country may be eligible to compete and be awarded a Contract(s) only if they can establish, in a manner acceptable to the Bank, that they (i) are legally and financially autonomous (ii) operate under commercial law, and (iii) are not under supervision of the Employer.

4.7 A Bidder shall not be under suspension from Bidding by the Employer as the result of the operation of a Bid-Securing or Proposal-Securing Declaration.

4.8 Firms and individuals may be ineligible if so indicated in Section V and (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or the contracting of works or services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country. When the Works are implemented across jurisdictional boundaries (and more than one country is a Borrower, and is involved in the procurement), then exclusion of a firm or individual on the basis of ITB 4.8 (a) above by any country may be applied to that procurement across other countries involved, if the Bank and the Borrowers involved in the procurement agree.

4.9 A Bidder shall provide such documentary evidence of eligibility satisfactory to the Employer, as the Employer shall reasonably request.

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- 5. Eligible Materials, Equipment and Services** 5.1 The materials, equipment and services to be supplied under the Contract and financed by the Bank may have their origin in any country subject to the restrictions specified in Section V, Eligible Countries, and all expenditures under the Contract will not contravene such restrictions. At the Employer's request, Bidders may be required to provide evidence of the origin of materials, equipment and services.

B. Contents of Bidding Document

- 6. Sections of Bidding Document** 6.1 The bidding document consists of Parts 1, 2, and 3, which include all the sections specified below, and which should be read in conjunction with any Addenda issued in accordance with ITB 8.

PART 1 Bidding Procedures

- Section I - Instructions to Bidders (ITB)
- Section II - Bid Data Sheet (BDS)
- Section III - Evaluation and Qualification Criteria
- Section IV - Bidding Forms
- Section V - Eligible Countries
- Section VI - Fraud and Corruption

PART 2 Works' Requirements

- Section VII - Works' Requirements

PART 3 Conditions of Contract and Contract Forms

- Section VIII - General Conditions of Contract (GCC)
- Section IX - Particular Conditions of Contract (PCC)
- Section X - Contract Forms

- 6.2 The Specific Procurement Notice - Request for Bids (RFB) issued by the Employer is not part of this bidding document.

- 6.3 Unless obtained directly from the Employer, the Employer is not responsible for the completeness of the bidding document, responses to requests for clarification, the minutes of the pre-Bid meeting (if any), or Addenda to the bidding document in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Employer shall prevail.

6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding document and to furnish with its Bid all information and documentation as is required by the bidding document.

7. Clarification of Bidding Document, Site Visit, Pre-Bid Meeting

7.1 A Bidder requiring any clarification of the bidding document shall contact the Employer in writing at the Employer's address **specified in the BDS** or raise its inquiries during the pre-Bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received prior to the deadline for submission of Bids within a period **specified in the BDS**. The Employer shall forward copies of its response to all Bidders who have acquired the bidding document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. If so **specified in the BDS**, the Employer shall also promptly publish its response at the web page **identified in the BDS**. *(where electronic downloading of bid document is permitted, the employer will upload the response to the queries, corrigendum or addenda on the website and it will be the responsibility of the bidders [who downloaded the bidding document] to search the website for any addenda)*. Should the clarification result in changes to the essential elements of the bidding document, the Employer shall amend the bidding document following the procedure under ITB 8 and ITB 22.2.

7.2 The Bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.

7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

7.4 If so **specified in the BDS**, the Bidder's designated representative is invited to attend a pre-Bid meeting and/or a Site of Works visit. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may

be raised at that stage.

7.5 The Bidder is requested, to submit any questions in writing, to reach the Employer not later than one week before the meeting.

7.6 Minutes of the pre-Bid meeting, if applicable, including the text of the questions asked by Bidders, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the bidding document in accordance with ITB 6.3 Any modification to the bidding document that may become necessary as a result of the pre-Bid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to ITB 8 and not through the minutes of the pre-Bid meeting. Nonattendance at the pre-Bid meeting will not be a cause for disqualification of a Bidder.

8. Amendment of Bidding Document

8.1 At any time prior to the deadline for submission of bids, the Employer may amend the bidding document by issuing addenda.

8.2 Any addendum issued shall be part of the bidding document and shall be communicated in writing to all who have obtained the bidding document from the Employer in accordance with ITB 6.3. The Employer shall also promptly publish the addendum on the Employer's web page in accordance with ITB 7.1.

8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer may, at its discretion, extend the deadline for the submission of Bids, pursuant to ITB 22.2.

C. Preparation of Bids

9. Cost of Bidding

9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

10. Language of Bid

10.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Employer, shall be written in English. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of

the relevant passages in English, in which case, for purposes of interpretation of the Bid, such translation shall govern.

**11. Documents
Comprising the
Bid**

- 11.1 The Bid shall comprise the following:
- (a) **Letter of Bid** prepared in accordance with ITB 12 and ITB 14;
 - (b) **Completed Schedules** including priced Bill of Quantities, in accordance with ITB 12 and ITB 14, as specified in BDS;
 - (c) **Bid Security or Bid-Securing Declaration** in accordance with ITB 19.1;
 - (d) **Alternative Bid**, if permissible, in accordance with ITB 13;
 - (e) **Authorization**: written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.3, and in accordance with ITB 20.4 in case of a JV;
 - (f) **Bidder's Eligibility**: documentary evidence in accordance with ITB 17 establishing the Bidder's eligibility to Bid;
 - (g) **Qualifications**: documentary evidence in accordance with ITB 17 establishing the Bidder's qualifications to perform the contract if its Bid is accepted;
 - (h) **Conformity**: a technical proposal in accordance with ITB 16;
 - (i) **Construction methodology** as detailed in Para 1.1 of Section III Evaluation Criteria;
 - (j) Contractor Registration certificate (as per RFB); and
 - (k) any other document **required in the BDS**.
- 11.2 In addition to the requirements under ITB 11.1, Bids submitted by a JV (where permitted) shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful bid shall be signed by all members and submitted with the Bid, together with a copy of the proposed Agreement.
- 11.3 The Bidder shall furnish in the Letter of Bid information on

commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.

12. Letter of Bid and Schedules

12.1 The Letter of Bid, Schedules including Bill of Quantities, and all documents listed under Clause 11, shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.3. All blank spaces shall be filled in with the information requested.

13. Alternative Bids

13.1 Unless otherwise specified **in the BDS**, alternative Bids shall not be considered.

13.2 When alternative times for completion are explicitly invited, a statement to that effect will be included **in the BDS** and the method of evaluating different alternative times for completion will be described in Section III, Evaluation and Qualification Criteria.

13.3 Except as provided under ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the bidding document must first price the Employer's design as described in the bidding document and shall further provide all information necessary for a complete evaluation of the alternative by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the Bidder with the Most Advantageous Bid conforming to the basic technical requirements shall be considered by the Employer.

13.4 When specified **in the BDS**, Bidders are permitted to submit alternative technical solutions for specified parts of the Works. Such parts will be identified **in the BDS** and described in Section VII, Works' Requirements. The method for their evaluation will be stipulated in Section III, Evaluation and Qualification Criteria.

14. Bid Prices and Discounts

14.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Schedules including Bill of Quantities shall conform to the requirements specified below.

14.2 The Bidder shall submit a Bid for the whole of the Works described in ITB 1.1 by filling in prices for all items of the Works, as identified in Section IV - Bidding Forms along with the total bid price (both in figures and words). The Bidder shall fill in rates and prices for all items of the Works

described in the Bill of Quantities. Items against which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bill of Quantities. Corrections if any, in the bid shall be made by crossing out, initialling, dating and rewriting.

- 14.3 The price to be quoted in the Letter of Bid, in accordance with ITB 12.1, shall be the total price of the Bid, excluding any discounts offered.
- 14.4 The Bidder shall quote any discounts and indicate the methodology for their application in the Letter of Bid in accordance with ITB 12.1.
- 14.5 Unless otherwise **specified in the BDS** and the Conditions of Contract, the prices quoted by the Bidder shall be fixed.
- 14.6 If so specified in ITB 1.1, Bids are invited for individual lots (contracts) or for any combination of lots (packages). Bidders wishing to offer discounts for the award of more than one Contract shall specify in their Bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITB 14.4, provided the Bids for all lots (contracts) are opened at the same time.
- 14.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the deadline for submission of Bids, shall be included in the rates and prices and the total Bid price submitted by the Bidder.
- 14.8 Bidders may like to ascertain availability of tax/duty exemption benefits available in India. They are solely responsible for obtaining such benefits which they have considered in their bid and in case of failure to receive such benefits for reasons whatsoever, the Employer will not compensate the bidder (Contractor). The bidder shall furnish along with his bid a declaration to this effect in the Declaration Format provided in Section IV of the bidding document.

Where the bidder has quoted taking into account such benefits, it must give all information required for issue of certificates in terms of the Government of India's relevant Notifications as per the declaration format. In case the bidder has not provided the required information or has indicated to be furnished later on in the Declaration Format, the same shall

be construed that the goods/construction equipment for which certificate is required is Nil.

To the extent the Employer determines the quantities indicated therein are reasonable keeping in view the quantities in bill of quantities, construction program and methodology, the certificates will be issued within 60 days of signing of the contract and no subsequent changes will be permitted. In case of materials pertaining to Variation items and quantities, the certificate shall be issued only on request from the Contractor when in need and duly certified by the Project Manager.

No certificate will be issued for items where no quantity/capacity of equipment is indicated in the statement.

If the bidder has considered the tax/duty exemption for materials/construction equipment to be bought for the work, the bidder shall confirm and certify that the Employer will not be required to undertake any responsibilities of the Government of India Scheme or the said exemptions being available during the contract execution, except issuing the required certificate. The bids which do not conform to the above provisions or any condition by the bidder which makes the bid subject to availability of tax/duty exemption for materials/construction equipment or compensation on withdrawal of any variations to the said exemptions will be treated as non-responsive and rejected.

Any delay in procurement of the construction equipment/machinery/goods as a result of the above shall not be a cause for granting any extension of time.

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| 15. Currencies of Bid and Payment | 15.1 | The unit rates and prices shall be quoted by the Bidder and shall be paid for, entirely in Indian Rupees. |
| 16. Documents Comprising the Technical Proposal | 16.1 | The Bidder shall furnish a technical proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV, Bidding Forms, in sufficient detail to demonstrate the adequacy of the Bidders' proposal to meet the work's requirements and the completion time. |
| 17. Documents Establishing the Eligibility and Qualifications of the Bidder | 17.1 | To establish Bidder's eligibility in accordance with ITB 4, Bidders shall complete the Letter of Bid, included in Section IV, Bidding Forms. |
| | 17.2 | In accordance with Section III, Evaluation and Qualification Criteria, to establish its qualifications to perform the Contract, the Bidder shall provide the information requested in the |

corresponding information sheets included in Section IV, Bidding Forms.

18. Period of Validity of Bids

18.1 Bids shall remain valid for 90 days or for the Bid Validity period **specified in the BDS**. The Bid Validity period starts from the date fixed for the Bid submission deadline (as prescribed by the Employer in accordance with ITB 22.1). A Bid valid for a shorter period shall be rejected by the Employer as nonresponsive.

18.2 In exceptional circumstances, prior to the expiration of the Bid validity period, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB 19, it shall also be extended for forty five (45) days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid, except as provided in ITB 18.3.

18.3 If the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial Bid validity period, the Contract price shall be determined as follows:

- (a) in the case of **fixed price** contracts, the Contract price shall be the Bid price adjusted by the factor **specified in the BDS**;
- (b) in the case of **adjustable** price contracts, no adjustment shall be made; or
- (c) in any case, Bid evaluation shall be based on the Bid price without taking into consideration the applicable correction from those indicated above.

19. Bid Security

19.1 The Bidder shall furnish as part of its Bid, either a Bid-Securing Declaration or a Bid Security as **specified in the BDS**, in original form and, in the case of a Bid security, for the amount **specified in the BDS**.

19.2 A Bid Securing Declaration shall use the form included in Section IV, Bidding Forms.

19.3 If a Bid Security is specified pursuant to ITB 19.1, the Bid Security shall be a demand guarantee in any of the following forms at the Bidder's option:

- (a) an unconditional bank guarantee issued by a

Nationalized or Scheduled bank located in India;

- (b) an irrevocable letter of credit issued by a Nationalized or Scheduled bank located in India;
- (c) a cashier's or certified check or demand draft issued by a Nationalized or Scheduled bank located in India;
- (d) another security **specified in the BDS**,

In the case of a bank guarantee, the Bid Security shall be submitted using the Bid Security Form included in Section IV, Bidding Forms. The form must include the complete name of the Bidder. The Bid Security shall be valid for forty-five (45) days beyond the original validity period of the Bid, or beyond any period of extension if requested under ITB 18.2.

19.4 If a Bid Security or Bid Securing Declaration is specified pursuant to ITB 19.1, any Bid not accompanied by a substantially responsive Bid Security or Bid Securing Declaration shall be rejected by the Employer as non-responsive.

19.5 If a Bid Security is specified pursuant to ITB 19.1, the Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the Contract and furnishing the Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security pursuant to ITB 48.

19.6 The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security.

19.7 The Bid Security may be forfeited or the Bid-Securing Declaration executed:

- (a) if a Bidder withdraws/modifies/substitutes its Bid during the period of Bid validity specified by the Bidder on the Letter of Bid, or any extension thereto provided by the Bidder; or
- (b) if the Bidder does not accept the correction of its Bid Price pursuant to ITB 31 or
- (c) if the successful Bidder fails to:

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- (i) sign the Contract in accordance with ITB 47; or
 - (ii) furnish a Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security in accordance with ITB 48.

19.8 The Bid Security or the Bid-Securing Declaration of a JV shall be in the name of the JV that submits the Bid. If the JV has not been constituted into a legally enforceable JV, at the time of Bidding, the Bid Security or the Bid-Securing Declaration shall be in the names of all future members as named in the letter of intent mentioned in ITB 4.1 and ITB 11.2.

19.9 If a Bid Security is not required in the BDS, pursuant to ITB 19.1, and:

- (a) if a Bidder withdraws its Bid during the period of Bid validity specified by the Bidder in the Letters of Bid or any extended date provided by the Bidder; or
- (b) if the successful Bidder fails to: sign the Contract in accordance with ITB 47; or furnish a Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security in accordance with ITB 48;

The Borrower may, if provided for **in the BDS**, declare the Bidder ineligible to be awarded a contract by the Employer for a period of time as **stated in the BDS**.

20. Format and Signing of Bid

20.1 The Bidder shall prepare one original of the documents comprising the Bid as described in ITB 11 and clearly mark it "ORIGINAL". Alternative Bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE". In addition, the Bidder shall submit copies of the Bid in the number **specified in the BDS**, and clearly mark each of them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

20.2 Bidders shall mark as "CONFIDENTIAL" information in their Bids which is confidential to their business.

20.3 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as **specified in the BDS** and shall be attached to the Bid. The

name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid where entries or amendments have been made shall be signed or initialed by the person signing the Bid.

20.4 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

20.5 Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

20.6 Any individual(s) signing the bid or other documents connected therewith should specify whether he is signing the offer as Chief Executive of a single firm / agency / institution making the offer, Lead partner of the consortium of firm / agency / institution making the offer, a Director, Manager or Secretary in case of the authority conferred by Memorandum of Association.

20.7 **Power of Attorney:** The Power of Attorney issued by a firm, a limited company or a JV authorizing an individual to sign the documents should be duly notarized and submitted in original with the Hard Bound Copy of The Bid Document. The power of attorney should be executed separately by each member of JV/ consortium authorizing the individual to sign the bid document on behalf of JV/ consortium. Participating JV firms are required to submit a letter of intent for participating in the bid and duly signed.

20.8 In the case of a firm not registered under the Indian Partnership Act, all the partners or the attorney duly authorized by all of them should sign the bid and all other connected documents. The original power of attorney or other documents empowering the individual or individuals to sign should be furnished to the Employer for verification, if required.

D. Submission and Opening of Bids

21. Sealing and Marking of Bids

21.1 The Bidder shall deliver the Bid in a single, sealed envelope. Within the single envelope the Bidder shall place

the two separate, sealed envelopes as ascribed below.

21.2 The procedure for participation in e-tendering is **specified in the BDS.**

21.3 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

21.4 E-mail, Telex, Cable or Facsimile bids will be rejected as non-responsive

21.5 The inner and outer envelopes shall:

- a) bear the name and address of the Bidder;
- b) be addressed to the Employer in accordance with ITB 22.1;
- c) bear the specific identification of this Bidding process specified in accordance with BDS 1.1; and
- d) bear a warning not to open before the time and date for Bid opening.

22. Deadline for Submission of Bids

22.1 Bids must be received by the Employer at the address and no later than the date and time **specified in the BDS.** When so specified **in the BDS,** Bidders shall have the option of submitting their Bids electronically. Bidders submitting Bids electronically shall follow the electronic bid submission procedures **specified in the BDS.**

In the event of the specified date for the submission of Bids being declared a holiday for the Employer, the Bids will be received up to the appointed time on the next working day.

22.2 The Employer may, at its discretion, extend the deadline for the submission of Bids by amending the bidding document in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23. Late Bids

23.1 The Employer shall not consider any Bid that arrives after the deadline for submission of Bids, in accordance with ITB 22. Any Bid received by the Employer after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.

24. Withdrawal, Substitution, and

24.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice, duly

Modification of Bids

signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be:

- (a) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” “MODIFICATION”; and
- (b) received by the Employer prior to the deadline prescribed for submission of Bids, in accordance with ITB 22.

24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.

24.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified by the Bidder on the Letter of Bid or any extension thereof. This will result in the forfeiture of the Bid Security pursuant to ITB 19.7.

25. Bid Opening

25.1 Except in the cases specified in ITB 23 and ITB 24.2, the Employer shall publicly open and read out in accordance with this ITB, all Bids received by the deadline, at the date, time and place **specified in the BDS**, in the presence of Bidders’ designated representatives and anyone who chooses to attend. All Bidders, or their representatives and any interested party may attend a public opening. Any specific electronic Bid opening procedures required if electronic bidding is permitted in accordance with ITB 22.1, shall be as **specified in the BDS**.

In the event of the specified date of bid opening being declared a holiday for the Employer, the bids will be opened at the appointed time and location on the next working day.

25.2 First, envelopes marked “WITHDRAWAL” shall be opened and read out and the envelope with the corresponding Bid shall not be opened but returned to the Bidder. No Bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Bid opening.

25.3 Next, envelopes marked “SUBSTITUTION” shall be

opened and read out and exchanged with the corresponding Bid being substituted, and the substituted Bid shall not be opened, but returned to the Bidder. No Bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Bid opening.

25.4 Next, envelopes marked “MODIFICATION” shall be opened and read out with the corresponding Bid. No Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at bid opening.

25.5 Next, all remaining envelopes shall be opened one at a time, reading out: the name of the Bidder and whether there is a modification; the total Bid Price, per lot (contract) if applicable, including any discounts and alternative Bids; the presence or absence of a Bid Security or Bid Securing Declaration, if required; and any other details as the Employer may consider appropriate.

25.6 Only Bids, alternative Bids, modifications and discounts that are opened and read out at Bid opening shall be considered further for evaluation. The Letter of Bid and the priced Schedules are to be initialed by representatives of the Employer attending Bid opening in the manner **specified in the BDS**.

25.7 The Employer shall neither discuss the merits of any Bid nor reject any Bid (except for late Bids, in accordance with ITB 23.1).

25.8 The Employer shall prepare a record of the Bid opening that shall include, as a minimum:

- (a) the name of the Bidder and whether there is a withdrawal, substitution, or modification;
- (b) the Bid Price, per lot (contract) if applicable, including any discounts;
- (c) the presence or absence of a Bid Security or Bid Securing Declaration, if one was required; and
- (d) any alternative Bids.

25.9 The Bidders’ representatives who are present shall be requested to sign the record. The omission of a Bidder’s signature on the record shall not invalidate the contents and

effect of the record. A copy of the record shall be distributed to all Bidders.

E. Evaluation and Comparison of Bids

- 26. Confidentiality**
- 26.1 Information relating to the evaluation of Bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with the Bidding process until information on Intention to Award the Contract is transmitted to all Bidders in accordance with ITB 43. In cases where ITB 43 is not applicable, such information shall not be disclosed until Notification of Award is transmitted in accordance with ITB 45.
- 26.2 Any effort by a Bidder to influence the Employer in the evaluation of the Bids or Contract award decisions may result in the rejection of its Bid.
- 26.3 Notwithstanding ITB 26.2, from the time of Bid opening to the time of Contract award, if a Bidder wishes to contact the Employer on any matter related to the Bidding process, it shall do so in writing.
- 27. Clarification of Bids**
- 27.1 To assist in the examination, evaluation, and comparison of the Bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its Bid giving a reasonable time for a response. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids, in accordance with ITB 31.
- 27.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Employer's request for clarification, its Bid may be rejected.
- 28. Deviations, Reservations, and Omissions**
- 28.1 During the evaluation of Bids, the following definitions apply:
- (a) "Deviation" is a departure from the requirements specified in the bidding document;
 - (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the

requirements specified in the bidding document; and

- (c) "Omission" is the failure to submit part or all of the information or documentation required in the bidding document.

29. Determination of Responsiveness

29.1 The Employer's determination of a Bid's responsiveness is to be based on the contents of the Bid itself, as defined in ITB 11.

29.2 A substantially responsive Bid is one that meets the requirements of the bidding document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:

- (a) if accepted, would:
 - (i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
 - (ii) limit in any substantial way, inconsistent with the bidding document, the Employer's rights or the Bidder's obligations under the proposed Contract; or
- (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.

29.3 The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 16, in particular, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation or omission.

29.4 If a Bid is not substantially responsive to the requirements of the bidding document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

30. Nonmaterial Nonconformities

30.1 Provided that a Bid is substantially responsive, the Employer may waive any nonconformities in the Bid which do not constitute a material deviation, reservation or omission.

30.2 Provided that a Bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Bid related

to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price or substance of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

30.3 Provided that a Bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or nonconforming item or component in the manner **specified in the BDS**.

**31. Correction of
Arithmetical
Errors**

31.1 Provided that the Bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:

- (a) only for admeasurement contracts, if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected;
- (b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- (c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

31.2 Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB 31.1, shall result in the rejection of the Bid, and the Bid Security may be forfeited in accordance with ITB Sub-Clause 19.7.

**32. Conversion to
Single Currency**

32.1 Not used.

**33. Margin of
Preference**

33.1 Not applicable.

34. Subcontractors

34.1 Unless otherwise **stated in the BDS**, the Employer does not intend to execute any specific elements of the Works by subcontractors selected in advance by the Employer.

34.2 The subcontractor's qualifications shall not be used by the Bidder to qualify for the Works unless their specialized parts of the Works were previously designated by the Employer **in the BDS** as can be met by subcontractors referred to hereafter as 'Specialized Subcontractors', in which case, the qualifications of the Specialized Subcontractors proposed by the Bidder may be added to the qualifications.

34.3 Bidders may propose subcontracting up to the percentage of total value of contracts or the volume of works as **specified in the BDS**. Subcontractors proposed by the Bidder shall be fully qualified for their parts of the Works.

35. Evaluation of Bids

35.1 The Employer shall use the criteria and methodologies listed in this ITB and Section III, Evaluation and Qualification criteria. No other evaluation criteria or methodologies shall be permitted. By applying the criteria and methodologies the Employer shall determine the Most Advantageous Bid. This is the Bid of the Bidder that meets the Qualification Criteria and whose Bid has been determined to be:

- (a) substantially responsive to the bidding document; and
- (b) the lowest evaluated cost.

35.2 To evaluate a Bid, the Employer shall consider the following:

- (a) the Bid price, excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities for admeasurement contracts, but including Daywork¹ items, where priced competitively;
- (b) price adjustment for correction of arithmetic errors in accordance with ITB 31.1;
- (c) price adjustment due to discounts offered in accordance with ITB 14.4;
- (d) Not used;
- (e) price adjustment due to quantifiable nonmaterial

¹ Daywork is work carried out following instructions of the Project Manager and paid for on the basis of time spent by workers, and the use of materials and the Contractor's equipment, at the rates quoted in the Bid. For Daywork to be priced competitively for Bid evaluation purposes, the Employer must list tentative quantities for individual items to be costed against Daywork (e.g., a specific number of tractor driver staff-days, or a specific tonnage of Portland cement), to be multiplied by the Bidders' quoted rates and included in the total Bid price.

nonconformities in accordance with ITB 30.3; and

- (f) the additional evaluation factors are specified in Section III, Evaluation and Qualification Criteria.

35.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.

35.4 If this bidding document allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated cost of the contract combinations, including any discounts offered in the Letter of Bid, is specified in Section III, Evaluation and Qualification Criteria.

36. Comparison of Bids

36.1 The Employer shall compare the evaluated costs of all substantially responsive Bids established in accordance with ITB 35.2 to determine the Bid that has the lowest evaluated cost.

37. Abnormally Low Bids

37.1 An Abnormally Low Bid is one where the Bid price, in combination with other constituent elements of the Bid, appears unreasonably low to the extent that the Bid price raises material concerns as to the capability of the Bidder to perform the Contract for the offered Bid price.

37.2 In the event of identification of a potentially Abnormally Low Bid, the Employer, unless otherwise **specified in the BDS**, shall seek written clarifications from the Bidder, including detailed price analyses of its Bid price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the bidding document.

37.3 After evaluation of the price analyses, in the event that the Employer determines that the Bidder has failed to demonstrate its capability to perform the Contract for the offered Bid Price, the Employer shall reject the Bid.

38. Unbalanced or Front-Loaded Bids

38.1 If the Bid for an admeasurement contract, which results in the lowest evaluated cost is, in the Employer's opinion, seriously unbalanced or, front-loaded, the Employer may require the Bidder to provide written clarifications. Clarifications may include detailed price analyses (with breakdown of unit rates) to demonstrate the consistency of the Bid prices with the scope of works, proposed methodology, schedule and any

other requirements of the bidding document.

38.2 After the evaluation of the information and detailed price analysis presented by the Bidder, the Employer may as appropriate:

- (a) accept the Bid without any additional Performance Security; or
- (b) require that the amount of the Performance Security be increased at the expense of the Bidder to a level not exceeding twenty percent (20%) of the Contract Price to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract; or
- (c) reject the Bid if the risk cannot be mitigated through additional performance security.

39. Qualification of the Bidder

39.1 The Employer shall determine to its satisfaction whether the eligible Bidder that is selected as having submitted the lowest evaluated cost and substantially responsive Bid meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

39.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17. The determination shall not take into consideration the qualifications of other firms such as the Bidder's subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Subcontractors if permitted in the bidding document), or any other firm(s) different from the Bidder.

39.3 An affirmative determination of qualification shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the Bid, in which event the Employer shall proceed to the substantially responsive Bid which offers the next lowest evaluated cost to make a similar determination of that Bidder's qualifications to perform satisfactorily.

40. Most Advantageous Bid

40.1 Having compared the evaluated costs of Bids, the Employer shall determine the Most Advantageous Bid. The Most Advantageous Bid is the Bid of the Bidder that meets the Qualification Criteria and whose Bid has been determined to be:

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- (a) substantially responsive to the bidding document; and
 - (b) the lowest evaluated cost.

41. Employer’s Right to Accept Any Bid, and to Reject Any or All Bids

41.1 The Employer reserves the right to accept or reject any Bid, and to annul the Bidding process and reject all Bids at any time prior to Contract Award, without thereby incurring any liability to Bidders. In case of annulment, all Bids submitted and specifically, Bid securities, shall be promptly returned to the Bidders.

42. Standstill Period

42.1 Standstill Period shall not apply.

[Note 1: where it is proposed to permit Standstill Period, incorporate all changes as indicated in Attachment 1 at the end of this document.

Note 2: Standstill period shall not apply where only one bid is submitted or where the bidding process is in response to an emergency situation recognized by the Bank]

43. Notice of Intention to Award

43.1 Not used.

F. Award of Contract

44. Award Criteria

44.1 Subject to ITB 41, the Employer shall award the Contract to the successful Bidder. This is the Bidder whose Bid has been determined to be the Most Advantageous Bid as specified in ITB 40.

45. Notification of Award

45.1 Prior to the expiration of the Bid Validity Period, the Employer shall notify the successful Bidder, in writing, that its bid has been accepted. The notification letter (hereinafter and in the Conditions of Contract and Contract Forms called the “Letter of Acceptance”). The Letter of Acceptance shall specify the sum that the Employer will pay the Contractor in consideration of the execution of the contract (hereinafter and in the Conditions of Contract and Contract Forms called “the Contract Price”).

45.2 Within ten (10) Business Days after the date of transmission of the Letter of Acceptance, the Employer shall publish the Contract Award Notice which shall contain, at a minimum, the following information:

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- (a) name and address of the Employer;
 - (b) name and reference number of the contract being awarded, and the selection method used;
 - (c) names of all Bidders that submitted Bids, and their Bid prices as read out at Bid opening, and as evaluated;
 - (d) names of all Bidders whose Bids were rejected either as nonresponsive or as not meeting qualification criteria, or were not evaluated, with the reasons therefor; and
 - (e) the name of the successful Bidder, the final total contract price, the contract duration and a summary of its scope.
- 45.3 The Contract Award Notice shall be published on a National website (GoI website <http://tenders.gov.in> or GoI Central Public Procurement Portal <https://eprocure.gov.in/cppp/>) or on the Employer's website.
- 45.4 Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.
- 46. Debriefing by the Employer** 46.1 Not used.
- 47. Signing of Contract** 47.1 Promptly upon Notification of Award, the Employer shall prepare the Contract Agreement, and keep it ready in the office of the Employer for the signature of the Employer and the successful Bidder, within 21 days following the date of Letter of Acceptance. The Contract Agreement shall incorporate all agreements between the Employer and the successful Bidder.
- 47.2 Within twenty-one (21) days of receipt of the Letter of Acceptance, the successful Bidder shall (a) furnish the performance security and if required in the BDS, the Environmental and Social (ES) Performance Security in accordance with ITB Clause 48, and revised construction methodology; (b) if the successful bidder is a JV, it shall also furnish the JV agreement duly signed by all the members, if it had submitted only a letter of intent to execute the JV agreement along with the bid; and (c) shall sign, date and return the Agreement to the Employer along with the documents stated at (a) and (b) above.
- 48. Performance Security** 48.1 Within twenty-one (21) days of the receipt of the Letter of Acceptance from the Employer, the successful Bidder shall furnish the Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security in accordance with the General Conditions of Contract, subject to ITB 38.2 (b), using for that purpose the

Performance Security and ES Performance Security Forms included in Section X, Contract Forms. The performance security and if required in the BDS, the Environmental and Social (ES) Performance Security of a Joint Venture shall be in the name of the Joint Venture specifying the names of all members.

48.2 Failure of the successful Bidder to submit the above-mentioned Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security or to sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Employer may award the Contract to the Bidder offering the next Most Advantageous Bid.

48.3 Upon the successful Bidder's signing the Agreement and furnishing of the Performance Security and if required in the BDS, the Environmental and Social (ES) Performance Security pursuant to ITB Clause 48.1, the Employer shall promptly notify the name of the winning bidder to each unsuccessful bidder and shall discharge the Bid Securities of the bidders pursuant to ITB Clause 19.5 and 19.6.

49. Adjudicator

49.1 The Employer proposes the person **named in the BDS** to be appointed as Adjudicator under the Contract, at the daily fee **specified in the BDS**, plus reimbursable expenses (actual boarding, lodging, travel and other incidental expenses). If the Bidder disagrees with this proposal, the Bidder should so state in his Bid. If, in the Letter of Acceptance, the Employer does not agree on the appointment of the Adjudicator, the Employer will request the Appointing Authority designated in the Particular Conditions of Contract (PCC) pursuant to Clause 23.1 of the General Conditions of Contract (GCC), to appoint the Adjudicator.

Section II - Bid Data Sheet (BDS)

The following specific data for the Works to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

ITB Reference	A. General												
ITB 1.1	<p>The reference number of the Request for Bids (RFB) is: MHSSP/CW/RFB-2022/02</p> <p>The Employer is: Project Director, Mizoram Health Systems Strengthening Project (MHSSP), Health & Family Welfare Department, MG Road, Tuikhuahtlang, Aizawl, Mizoram</p> <p>The name of the RFB is: Repair and Renovation of District Hospitals in Mizoram (5 Lots.)</p> <p>The number and identification of lots (contracts) comprising this RFB is:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Number of Lot</th> <th style="text-align: center;">Identification of Lot</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Lot 1</td> <td>Repair and Renovation of Civil Hospital Aizawl</td> </tr> <tr> <td style="text-align: center;">Lot 2</td> <td>Repair and Renovation of District Hospital Champhai</td> </tr> <tr> <td style="text-align: center;">Lot 3</td> <td>Repair and Renovation of District Hospital Lawngtlai</td> </tr> <tr> <td style="text-align: center;">Lot 4</td> <td>Repair and Renovation of Civil Hospital Lunglei</td> </tr> <tr> <td style="text-align: center;">Lot 5</td> <td>Repair and Renovation of District Hospital Siaha</td> </tr> </tbody> </table>	Number of Lot	Identification of Lot	Lot 1	Repair and Renovation of Civil Hospital Aizawl	Lot 2	Repair and Renovation of District Hospital Champhai	Lot 3	Repair and Renovation of District Hospital Lawngtlai	Lot 4	Repair and Renovation of Civil Hospital Lunglei	Lot 5	Repair and Renovation of District Hospital Siaha
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Lot 1	Repair and Renovation of Civil Hospital Aizawl												
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Lot 3	Repair and Renovation of District Hospital Lawngtlai												
Lot 4	Repair and Renovation of Civil Hospital Lunglei												
Lot 5	Repair and Renovation of District Hospital Siaha												
ITB 2.1	<p>The Borrower is: Government of India. The sub-Borrower is: Government of Mizoram</p> <p>The Employer is: Project Director, Mizoram Health Systems Strengthening Project (MHSSP), Health & Family Welfare Department, Government of Mizoram</p> <p>Loan or Financing Agreement amount of MHSSP: 32 Million USD</p> <p>The name of the Project is: Mizoram Health Systems Strengthening Project (MHSSP)</p>												
ITB 4.1	Bids from Joint ventures are <u>not</u> acceptable.												
ITB 4.5	A list of debarred firms and individuals is available on the Bank's external												

	website: http://www.worldbank.org/debarr .
ITB 4.7	Deleted.
B. Contents of Bidding Document	
ITB 7.1	<p>Electronic – Procurement System</p> <p>The Employer shall use the following electronic-procurement system to manage this Bidding process:</p> <p>Web page: https://mizoramtenders.gov.in</p> <p>Requests for clarification should be received by the Employer no later than: 14 days prior to the deadline for submission of bids</p> <p>For Clarification of Bid purposes only, the Employer’s address is:</p> <p>Attention: The Project Director, <i>Mizoram Health Systems Strengthening Project (MHSSP)</i>,</p> <p>Address: Office of the Project Director, <i>Mizoram Health Systems Strengthening Project (MHSSP)</i>, Health & Family Welfare Department, MG Road, Tuikhuahtlang, Aizawl, Mizoram</p> <p>Pincode: 796001</p> <p>Country: India</p> <p>Telephone: 7005298129</p> <p>Email: procurement@pmu.mzhssp.in</p>
ITB 7.4	<p>A Pre-Bid meeting (Offline and Online) shall take place. The Contractor can visit the Office of the Project Director on the date and time mentioned for pre-bid meeting.</p> <p>Google Meet joining info</p> <p>https://meet.google.com/cxb-ypen-zxe</p> <p>Date: 6.12.2022</p> <p>Time: 1:00 PM</p> <p>Place: Office of the Project Director, MHSSP, MG Road Tuikhuahtlang, Aizawl, Mizoram</p>
C. Preparation of Bids	
ITB 11.1 (b)	<p>The following schedules shall be submitted with the bid:</p> <p>(a) Letter of Bid prepared in accordance with ITB 12 and ITB 14;</p> <p>(b) Completed Schedules including priced Bill of Quantities, in accordance with ITB 12 and ITB 14, as specified in BDS;</p>

	<p>(c) Cost of Bid documents in the form of demand draft (DD) issued by a Nationalized or Scheduled bank in favor of “Mizoram Health Systems Strengthening Project”.</p> <p>(d) Bid Security or Bid-Securing Declaration in accordance with ITB 19.1;</p> <p>(e) Authorization: written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.3, and in accordance with ITB 20.4 in case of a JV;</p> <p>(f) Bidder’s Eligibility: documentary evidence in accordance with ITB 17 establishing the Bidder’s eligibility to Bid;</p> <p>(g) Qualifications: documentary evidence in accordance with ITB 17 establishing the Bidder’s qualifications to perform the contract if its Bid is accepted;</p> <p>(h) Conformity: a technical proposal in accordance with ITB 16;</p> <p>(i) Construction methodology as detailed in Para 1.1 of Section III Evaluation Criteria;</p> <p>(j) Contractor Registration certificate (as per RFB); and</p>
<p>ITB 11.1 (k)</p>	<p>The Bidder shall submit the following additional documents in its Bid:</p> <p>(i) Contractor Registration certificate on e-procurement system</p> <p>(ii) Pan card (Photostat copy duly attested).</p> <p>(iii) GST registration No.</p> <p>(iv) Code of Conduct for Contractor’s Personnel (ES)</p> <p>The Bidder shall submit its Code of Conduct that will apply to Contractor’s Personnel (as defined in Sub-Clause 1 (ii) of the General Conditions of Contract), to ensure compliance with the Contractor’s Environmental and Social (ES) obligations under the Contract. The Bidder shall use for this purpose the Code of Conduct form provided in Section IV. No substantial modifications shall be made to this form, except that the Bidder may introduce additional requirements, including as necessary to take into account specific Contract issues/risks.</p> <p>Management Strategies and Implementation Plans (MSIP) to manage the (ES) risks</p> <p>The Bidder shall submit Management Strategies and Implementation Plans (MSIPs) to manage key Environmental and Social (ES) risks that will apply to its employees and subcontractors, to ensure compliance with its Environmental, and Social obligations including compliance with applicable Laws/ Rules/ Regulations for protection of environment, public health and safety, and the applicable parts of the Environment Management</p>

	<p>Plan of the project under the contract.</p> <p>(v) Letter of agreement for sub-contractor, (details shall include percentage of works for sub-contracting) if applicable</p>
ITB 12	<p>Note for Bidders: Bidders have to submit the bids on the e-procurement portal along with the relevant required documents. For this purpose, the bidders shall fill up online, the forms that are available for online filling on the e-portal. The rest of the forms shall be downloaded by the bidders and filled up. The filled up pages shall then be scanned and uploaded on the e-procurement portal along with the scanned copies of the supporting documents.</p>
ITB 12.3	<p>For submission of original documents, the Employer's address is:</p> <p>Attention: The Project Director, <i>Mizoram Health Systems Strengthening Project (MHSSP)</i>,</p> <p>Address: Office of the Project Director, <i>Mizoram Health Systems Strengthening Project (MHSSP)</i>, Health & Family Welfare Department, MG Road, Tuikhuahtlang, Aizawl, Mizoram</p> <p>Pincode: 796001</p> <p>Country: India</p> <p>Telephone: 7005298129</p> <p>Email: procurement@pmu.mzhssp.in</p>
ITB 13.1	Alternative Bids shall not be permitted.
ITB 13.2	Alternative times for completion shall not be permitted.
ITB 13.3	Not Applicable
ITB 13.4	Alternative technical solutions shall be permitted for the following parts of the Works: Not Applicable
ITB 14.5	<p>The prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract.</p> <p>The adjustment of contract price, if provided, will be done in accordance with GCC Clause 49 and corresponding provisions under PCC and Appendix 2 to PCC.</p>
ITB 18.1	The Bid validity period shall be 90 days.
ITB 18.3 (a)	Not Applicable
ITB 19.1	<p>A Bid Security shall be required.</p> <p>Bid Security of the amount specified for the work in the table below, shall be drawn in favour of "Mizoram Health Systems Strengthening Project Bid security shall be valid for 45 days beyond the validity of the bid.</p> <p>The Bidder shall furnish a Bid Security in the amount as follows:</p>

	Name and Identification of Lot	Amount of Bid Security
	Repair and Renovation of Civil Hospital Aizawl	INR 3.75 Lakhs
	Repair and Renovation of District Hospital Champhai	INR 1.87 Lakhs
	Repair and Renovation of District Hospital Lawngtlai	INR 2.15 Lakhs
	Repair and Renovation of Civil Hospital Lunglei	INR 3.92 Lakhs
	Repair and Renovation of District Hospital Siaha	INR 2.76 Lakhs
	<p>Note: Bid Security is required for each lot as per amounts indicated against each lot. Bidders have the option of submitting one Bid Security for all lots (for the combined total amount of all lots) for which Bids have been submitted, However, if the amount of Bid Security is less than the total required amount, the Employer will determine (based on lowest cost combination of bids) for which lot or lots the Bid Security amount shall be applied.</p>	
ITB 19.3 (d)	<p>Other types of acceptable securities are:</p> <p>Fixed Deposit/Time Deposit certificate/ Bank Guarantee issued by a Nationalized or Scheduled Bank located in India for equivalent or higher values are acceptable provided it is pledged in favour of Mizoram Health Systems Strengthening Project (implementing agency) and such pledging has been noted and suitably endorsed by the bank issuing the certificate.</p>	
ITB 19.9	Deleted.	
ITB 20.1	In addition to the original of the Bid, the number of copies is: One	
ITB 20.3	<p>The written confirmation of authorization to sign on behalf of the Bidder shall consist of:</p> <p>Legally valid Power of Attorney is required to demonstrate the authority of the signatory to sign the Bid.</p>	
D. Submission and Opening of Bids		
ITB 21.2	Part 4 - The procedure for participation in e-tendering	
ITB 22.1	<p>The deadline for uploading the Bids is:</p> <p>Date: 5th December 2022</p> <p>Time: 12:00 noon</p> <p>For original <u>Bid submission purposes</u> only, the Employer's address is:</p> <p>Attention: The Project Director, Mizoram Health Systems Strengthening Project ,</p> <p>Address: Office of the Project Director, Mizoram Health Systems Strengthening Project , MG Road, Tuikhuahtlang, Aizawl, Mizoram</p> <p>Pincode: 796001</p>	

	Country: India
ITB 24.1	Allowed
ITB 25.1	<p>The online Bid opening shall take place at: <u>Online: https://mizoramtenders.gov.in</u> Date: 5.12.2022 Time: 1:00 PM Office of the Project Director, Mizoram Health Systems Strengthening Project (MHSSP) Street Address: MG Road, Tuikhuahtlang, Floor: 2nd Floor Meeting Room City: Aizawl, Mizoram Country: INDIA</p>
ITB 25.6	<p>The Letter of Bid and Schedules shall be initialed by The Project Director or representatives of the Employer conducting Bid opening. Each Bid shall be initialed by all representatives and shall be numbered, any modification to the unit or total price shall be initialed by the Representative of the Employer.</p>
E. Evaluation and Comparison of Bids	
ITB 30.3	<p>The adjustment shall be based on the highest price of the item or component as quoted in other substantially responsive Bids, subject to a maximum of the estimated price of the item. If the price of the item or component cannot be derived from the price of other substantially responsive Bids, the Employer shall use its best estimate.</p>
ITB 34.1	<p>At this time the Employer does not intend to execute certain specific parts of the Works by subcontractors selected in advance.</p>
ITB 34.2	Not Applicable
ITB 34.3	<p>(a) Contractor's proposed subcontracting: Maximum percentage of subcontracting permitted is: 25% of the total contract amount.</p> <p>(b) Bidders planning to subcontract more than 10% of total volume of work shall specify, in the Letter of Bid, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience. The qualification and experience of the subcontractors must meet the minimum criteria for the relevant work to be subcontracted failing which such sub-contractors will not be permitted to participate.</p> <p>(c) Subcontractors' qualification and experience will not be considered for evaluation of the Bidder. The Bidder on its own (without taking into account the qualification and experience of the sub-contractor) should</p>

	<p>meet the qualification criteria.</p> <p>[Note-Work should not be split into small parts and sub-contracted].</p>
<p>F. Award of Contract</p>	
<p>ITB 48.1 and 48.2</p>	<p>The successful Bidder shall also be required to submit an Environmental and Social (ES) Performance Security (1% of the contracted price). Where there are Specialized Sub-contractor/s, the Specialized Sub-contractor/s must also make the declaration.)</p> <p>Throughout this bidding document the term 'performance security', unless the context clearly indicates otherwise, means and includes both 'the performance security and the ES performance security' to be submitted by the successful bidder in the amounts specified in GCC/ PCC 54.</p>
<p>ITB 49</p>	<p>The Adjudicator proposed by the Employer is: <i>Er. V.L. Nghinglova, Ramhlun North, Aizawl, Mizoram.</i> The daily fee for this proposed Adjudicator shall be: Rs. 10,000/-. The biographical data of the proposed Adjudicator is as follows:</p> <p>PERSONAL INFORMATION:</p> <p><i>NAME: Er. V.L Nghinglova</i> <i>DATE OF BIRTH: 6th Oct, 1959</i> <i>SEX: Male</i> <i>NATIONALITY: Indian</i> <i>ADDRESS: B-62, Industry Mual, Ramhlun North, Aizawl, Mizoram-796012</i> <i>CONTACT NO: 9436140278</i> <i>EMAIL: vlnghinglova1956@yahoo.com</i></p> <p>PERSONAL PROFILE STATEMENT: HE is a Retired Government Servant with Superannuation Pension on 1st March, 2019 as Superintendent Engineer from Public Work Department (PWD), Government of Mizoram.</p> <p>EDUCATION: B.E (Civil Engineering)</p> <p>PROFESSIONAL EXPERIENCES OR PAST EMPLOYMENT:</p> <ol style="list-style-type: none"> 1. Superintendent Engineer – PWD 2. SE Monitoring 3. Divisional Engineer – Mamit Division 4. Divisional Engineer Building Division, Aizawl 5. Divisional Engineer Project 111 Division, Aizawl 6. Divisional Engineer Khawzawl Division 7. Divisional Engineer Siah Division

Section III - Evaluation and Qualification Criteria

This section contains all the criteria that the Employer shall use to evaluate Bids and qualify Bidders through post-qualification. No other factors, methods or criteria shall be used other than specified in this bidding document. The Bidder shall provide all the information requested in the forms included in Section IV, Bidding Forms.

1. Margin of Preference – Not Applicable

2. Evaluation

In addition to the criteria listed in ITB 35.2 (a) – (e) the following criteria shall apply:

2.1 Adequacy of Technical Proposal

Evaluation of the Bidder's Technical Proposal will include

(i) an assessment of the Bidder's technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, material sourcing, and quality control/ assurance in sufficient detail and fully in accordance with the requirements stipulated in Section VII, Works' Requirements.

For this purpose, the Bidder should also submit:

A detailed note outlining its proposed methodology and program of construction including **Contractor's** Environmental and Social, Health Management Strategies and Implementation Plans (ES-MSIP), backed with equipment, materials and manpower planning and deployment, duly supported with broad calculations and quality control system/assurance procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.

(ii) an assessment of the details of subcontracting elements of works amounting to more than 10% of the bid price; for each element proposed to be sub-contracted furnish details whether the identified Sub-contractor possesses the required qualifications and experiences to execute that element satisfactorily. [***Work should not be split into small parts and sub-contracted***].

(iii) Bidders shall submit an undertaking from each proposed subcontractor to confirm that they have read, understand and will comply with the ES obligations and code of conduct for Contractor's Personnel.

2.2 Multiple Contracts

Pursuant to ITB 35.4 of the Instructions to Bidders, if Works are grouped in multiple contracts, evaluation will be as follows:

(a) Award Criteria for Multiple Contracts [ITB 35.4]:

Lots

Bidders have the option to Bid for any one or more lots. Bids will be evaluated lot-wise, taking into account discounts offered, if any, after considering all possible combination of lots. The contract(s) will be awarded to the Bidder or Bidders offering the lowest evaluated

cost to the Employer for combined lots, subject to the selected Bidder(s) meeting the required qualification criteria for lot or combination of lots as the case may be.

(b) Qualification Criteria for Multiple Contracts:

This Section describes criteria for qualification for each lot (contract) for multiple lots (contracts). The criteria for qualification is aggregate minimum requirement for respective lots as specified under items 3.1, 3.2, 4.2(a) and 4.2(b). However, with respect to the specific experience under item 4.2 (a) of Section III, the Employer will select any one or more of the options as identified below:

N is the minimum number of contracts

V is the minimum value of a single contract

(a) For one Contract:

Option 1:

(i) N contracts, each of minimum value V;

Or

Option 2:

(i) N contracts, each of minimum value V; or

(ii) Less than or equal to N contracts, each of minimum value V, but with total value of all contracts equal or more than $N \times V$.

(b) For multiple Contracts

Option 1:

(i) Minimum requirements for combined contract(s) shall be the aggregate requirements for each contract for which the Bidder has submitted Bids as follows, and N1, N2, N3, etc. shall be different contracts:

Lot 1: N1 contracts, each of minimum value V1;

Lot 2: N2 contracts, each of minimum value V2;

Lot 3: N3 contracts, each of minimum value V3;

----etc.

or

Option 2:

(i) Minimum requirements for combined contract(s) shall be the aggregate requirements for each contract for which the Bidder has submitted Bids as follows, and N1, N2, N3, etc. shall be different contracts:

Lot 1: N1 contracts, each of minimum value V1;

Lot 2: N2 contracts, each of minimum value V2;

Lot 3: N3 contracts, each of minimum value V3;

----etc., **or**

(ii) Lot 1: N1 contracts, each of minimum value V1; or number of contracts less than or equal to N1, each of minimum value V1, but with total value of all contracts equal or more than $N1 \times V1$.

Lot 2: N2 contracts, each of minimum value V2; or number of contracts less than or equal to N2, each of minimum value V2, but with total value of all contracts equal or more than $N2 \times V2$.

Lot 3: N3 contracts, each of minimum value V3; or number of contracts less than or equal to N3, each of minimum value V3, but with total value of all contracts equal or more than $N3 \times V3$.

----etc.

Or

Option 3:

(i) Minimum requirements for combined contract(s) shall be the aggregate requirements for each contract for which the Bidder has bid for as follows, and N1, N2, N3, etc. shall be different contracts:

Lot 1: N1 contracts, each of minimum value V1;

Lot 2: N2 contracts, each of minimum value V2;

Lot 3: N3 contracts, each of minimum value V3;

----etc., **or**

(ii) Lot 1: N1 contracts, each of minimum value V1; or number of contracts less than or equal to N1, each of minimum value V1, but with total value of all contracts equal or more than $N1 \times V1$.

Lot 2: N2 contracts, each of minimum value V2; or number of contracts less than or equal to N2, each of minimum value V2, but with total value of all contracts equal or more than $N2 \times V2$.

Lot 3: N3 contracts, each of minimum value V3; or number of contracts less than or equal to N3, each of minimum value V3, but with total value of all contracts equal or more than $N3 \times V3$.

----etc., or

(iii) Subject to compliance as per (ii) above with respect to minimum value of single contract for each lot, total number of contracts is equal or less than $N1 + N2 + N3$ --but the total value of all such contracts is equal or more than $N1 \times V1 + N2 \times V2 + N3 \times V3$ ---.

Works are grouped in multiple contracts and pursuant to Sub-Clause 35.4 of the Instructions to Bidders, the Employer will evaluate and compare Bids on the basis of a contract, or a combination of contracts, or as a total of contracts in order to arrive at the least cost combination for the Employer by taking into account discounts offered by Bidders in case of award of multiple contracts. If a bidder submits several successful (lowest evaluated substantially responsive) bids, the evaluation will also include an assessment of the Bidder's capacity to meet the aggregated requirements regarding:

- Experience
- Financial situation
- Current contract commitments,
- Cash flow capacity,
- Equipment to be allocated, and
- Personnel to be fielded.
- Bid Capacity

2.3 Alternative Completion Times (ITB 13.2) – Not Applicable

2.4 Sustainable procurement (Section VII - Specifications) – Not Applicable

2.5 Alternative Technical Solutions for specified parts of Works (ITB 13.4) – Not Applicable

2.6 Specialized Subcontractors: Not Applicable

2.7 Other criteria (if permitted under ITB 35.2(f)): Not Applicable

3. Qualification Criteria

Eligibility and Qualification Criteria			Compliance Requirements			Documentation	
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended) where permitted			Submission Requirements
				All members Combined	Each Member	At least one Member	
1. Eligibility							
1.1	Nationality	Nationality in accordance with ITB 4.4	Must meet requirement	N/A	N/A	N/A	Forms ELI – 1.1 and 1.2, with attachments
1.2	Conflict of Interest	No conflicts of interest in accordance with ITB	Must meet requirement	N/A	N/A	N/A	Letter of Bid

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended) where permitted			Submission Requirements
				All members Combined	Each Member	At least one Member	
		4.2					
1.3	Bank Eligibility	Not having been declared ineligible by the Bank, as described in ITB 4.5.	Must meet requirement	N/A	N/A	N/A	Letter of Bid
1.4	State-owned enterprise or institution of the Borrower country	Meets conditions of ITB 4.6	Must meet requirement	N/A	N/A	N/A	Forms ELI – 1.1 and 1.2, with attachments
1.5	United Nations resolution or Borrower’s country law	Not having been excluded as a result of prohibition in the Borrower’s country laws or official regulations against commercial relations with the Bidder’s country, or by an act of compliance with UN Security Council resolution, both in accordance with ITB 4.8 and Section V.	Must meet requirement	N/A	N/A	N/A	Forms ELI – 1.1 and 1.2, with attachments
2. Historical Contract Non-Performance							
2.1	History of Non-Performing Contracts	Non-performance of a contract ² did not occur as a result of contractor default since 1 st January 2015.	Must meet requirement ¹ & ²	N/A	N/A	N/A	Form CON-2
2.2	Suspension Based on Execution of Bid/ Proposal Securing Declaration by the Employer or withdrawal	Not under suspension based on execution of a Bid/ Proposal Securing Declaration pursuant to ITB 4.7 or withdrawal of the Bid pursuant ITB 19.9	Must meet requirement	N/A	N/A	N/A	Letter of Bid

² Non-performance, as decided by the Employer, shall include all contracts where (a) non-performance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the contractor. Non-performance shall not include contracts where Employers decision was overruled by the dispute resolution mechanism. Non-performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Bidder have been exhausted.

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended) where permitted			Submission Requirements
				All members Combined	Each Member	At least one Member	
	of the Bid within Bid validity period						
2.3	Pending Litigation	Bidder's financial position and prospective long-term profitability sound according to criteria established in 3.1 below and assuming that all pending litigation will be resolved against the Bidder	Must meet requirement	N/A	N/A	N/A	Form CON – 2
2.4	Litigation History	No consistent history of court/arbitral award decisions against the Bidder ³ since 1 st January 2017	Must meet requirement	N/A	N/A	N/A	Form CON – 2
2.5	Declaration: Environmental and Social (ES) past performance	Declare any civil work contracts that have been suspended or terminated and/or performance security called by an employer for reasons of breach of environmental, or social (including Sexual Exploitation, and Abuse) contractual obligations in the past five years ⁴ .	Must make the declaration. Where there are Specialized Sub-contractor/s, the Specialized Sub-contractor/s must also make the declaration.	N/A	N/A	N/A	Form CON-3 ES Performance Declaration
3. Financial Situation and Performance							
3.1	Financial Capabilities	(i) The Bidder shall demonstrate that it has access to, or has available, liquid assets,	Must meet requirement	N/A	N/A	N/A	Form FIN – 3.1, with attachments

³ The Bidder shall provide accurate information on the Letter of Bid about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the last five years. A consistent history of court/arbitral awards against the Bidder or any member of a joint venture may result in disqualifying the Bidder.

⁴ The Employer may use this information to seek further information or clarifications in carrying out its due diligence.

Eligibility and Qualification Criteria			Compliance Requirements			Documentation	
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended) where permitted			Submission Requirements
				All members Combined	Each Member	At least one Member	
		<p>unencumbered real assets, lines of credit⁵, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow of Rs.</p> <p>Lot 1: Rs. 188 lakh Lot 2: Rs. 93 lakh Lot 3: Rs. 107 lakh Lot 4: Rs.196 lakh Lot 5: Rs. 138 lakh</p>					
		(ii) The Bidders shall also demonstrate, to the satisfaction of the Employer, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.	Must meet requirement	N/A	N/A	N/A	
		(iii) The audited balance sheets or, if not required by the laws of the Bidder's country, other financial statements acceptable to the Employer, for the last five years shall be submitted and must demonstrate the current soundness of the Bidder's financial position and indicate its prospective long-term profitability.	Must meet requirement	N/A	N/A	N/A	

⁵ In case the bidder submits a letter of intent from a commercial bank with the bid, firm commitment from the bank to provide line of credit shall be required before contract signing.

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended) where permitted			Submission Requirements
				All members Combined	Each Member	At least one Member	
<i>The cash flow availability should be certified by Bank (Nationalized or Scheduled Bank In India) in form Fin 3.3</i>							
3.2	Average Annual Construction Turnover	<p>Average annual construction turnover of Rs.</p> <p>Lot 1: Rs. 375 lakh Lot 2: Rs. 187 lakh Lot 3: Rs.215 lakh Lot 4: Rs. 392 lakh Lot 5: Rs. 275 lakh</p> <p>calculated as total certified payments received for contracts completed within the last five financial years, divided by five financial years.</p>	Must meet requirement	N/A	N/A	N/A	Form FIN – 3.2
4. Experience							
4.1 (a)	General Construction Experience	N/A	N/A	N/A	N/A	N/A	Form EXP – 4.1
4.2 (a)	Specific Construction & Contract Management Experience	A bidder should have been satisfactorily and substantially ⁶ completed as a prime contractor, joint venture member ⁷ , management contractor or sub-contractor ⁸ in last five (5) years [FY 17-18 to FY 21-22] prior to bid	Must meet requirement	N/A	N/A	N/A	Form EXP 4.2(a)

⁶ Substantial completion shall be based on 80% or more works completed under the contract.

⁷ For contracts under which the Bidder participated as a joint venture member or sub-contractor, only the Bidder's share, by value, shall be considered to meet this requirement.

⁸ For contracts under which the Bidder participated as a joint venture member or sub-contractor, only the Bidder's share, by value, shall be considered to meet this requirement

Eligibility and Qualification Criteria			Compliance Requirements			Documentation	
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended) where permitted			Submission Requirements
				All members Combined	Each Member	At least one Member	
		<p>submission deadline:</p> <p>(i) One contracts, of minimum value Lot 1: Rs. 300 lakh Lot 2: Rs. 150 lakh Lot 3: Rs. 172 lakh Lot 4: Rs. 314 lakh Lot 5: Rs. 220 lakh</p> <p>“Or”</p> <p>(ii) Two contracts, each of minimum value of Lot 1: Rs. 187 lakh Lot 2: Rs. 93 lakh Lot 3: Rs. 107 lakh Lot 4: Rs. 196 lakh Lot 5: Rs. 137 lakh</p> <p>“Or”</p> <p>(ii) Three contracts, each of minimum value of Lot 1: Rs. 150 lakh Lot 2: Rs. 75 lakh Lot 3: Rs. 86 lakh Lot 4: Rs. 157 lakh Lot 5: Rs. 110 lakh</p> <p>Note: In case the bidder submits bid for more than one Lot, cumulative assessment of financial capacity and experience will be considered for evaluation and award of contract as mentioned in ITB 35.4. The similarity of the contracts shall be based on the</p>					

Eligibility and Qualification Criteria			Compliance Requirements			Documentation	
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended) where permitted			Submission Requirements
				All members Combined	Each Member	At least one Member	
		following: Construction of Building Works, preferably Office Building. The similarity shall be based on the physical size, complexity, methods/technology or other characteristics as described in Section VII, Scope of Works.					

4.2 (d)	<p>Bid Capacity: Bidders who meet the minimum qualification criteria will be qualified only if their available bid capacity for construction work is equal to or more than the total bid value of the work. The available bid capacity will be calculated as under:</p> <p>Assessed Available bid capacity = (A*N*1.15-B)</p> <p>Where, A = Maximum value of civil engineering works executed in any one year during the last five years (updated to the price level of the financial year 2021 - 2022 at the rate of 5% per year), taking into account the completed as well as works in progress). N = Number of years prescribed for completion of the works for which bids are invited (period up to 6 months to be taken as half-year and more than 6 months as one year). B = Value, at the current price level, of existing commitments on on-going works to be completed during the period of completion of the works for which bids are invited. Note: the statements in Section IV showing the value of existing commitments of on-going works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Engineer in charge, not below the rank of an Executive Engineer or equivalent.</p>	<p>Calculation Sheet showing bid capacity for construction work is equal to or more than the total bid value of the work</p>
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Note: [For Multiple lots (contracts) specify financial and experience criteria for each lot under 3.1, 3.2, 4.2(a) and 4.2(b)]

Note: In case bids are being invited simultaneously for multiple Lots (under separate IFB and Bid Documents), the Employer reserves the right to assess cumulative qualification of the bidders participating in multiple Lots.

4. Key Personnel

The Bidder must demonstrate that it will have suitably qualified (and in adequate numbers) minimum Key Personnel, as described in the Table below, that are required to perform the Contract.

The Bidder shall provide details of the Key Personnel and such other Key Personnel that the Bidder considers appropriate, together with their academic qualifications and work experience. The Bidder shall complete the relevant Forms in Section IV, Bidding Forms.

The Contractor shall require the Employer’s consent to substitute or replace the Key Personnel (reference the Particular Conditions of Contract 9.1).

Key Personnel

Item No.	Position/ specialization	Relevant academic qualifications	Minimum years of relevant work experience
1	Contractor’s Representative		
2	Construction Manager (1)	B E (Civil) / Diploma (Civil) Engineering	More than 10 years
<u>Suitable experts in the following specializations</u>			
3	Site Engineer (2 per Lot)	B E (Civil) / Diploma (Civil) Engineering	5-8 years
4	Environment, Health and Safety Engineer (1)	Graduate in Civil or Environmental Engineering with specialization and/or additional qualification in Occupational Health and Safety.	2 years
4	[<i>Social Specialist</i>]	Master’s in Sociology/Anthropology/ Social work/ Social Science/ Social Development	2 years of monitoring and managing risks related to Social issues
5	Sexual Exploitation, Abuse and Harassment Expert	<u>Post Graduate in Social Work/social sciences</u>	5 years of monitoring and managing risks related to gender-based violence, out of which 3 years of relevant experience in addressing issues related to sexual exploitation, sexual abuse and sexual harassment

The Bidder must not have in his employment:

- [i] the near relations (defined as first blood relations, and their spouses, of the bidder or the bidder's spouse) of persons of the following Government Departments.
.....
.....
.....
- [ii] without Government permission, any person who retired as gazetted officer within the last two years.

[Note:

The managerial and technical competence of a contractor is largely related to the key personnel on site. The extent to which the Bidder should demonstrate having staff with extensive experience should be limited to those requiring critical operational or technical skills. The criteria should therefore refer to a limited number of such key personnel, for instance, the project or contract manager and others working under the project manager who will be responsible for major components (e.g. specialized in dredging, piling, earthworks, ES obligations, as required for each particular project). Criteria of acceptability should be based on:

- (a) *a minimum number of years of experience in a similar position; and*
- (b) *a minimum number of years of experience and/or number of comparable projects carried out in a specified number of preceding years.]*

5. Equipment

The Bidder must demonstrate that it will have access to the key Contractor's equipment listed hereafter per Lot:

No.	Equipment Type and Characteristics	Minimum Number required
1	Concrete Mixer	1
2	Hydraulic Excavator/ Black Hoe	1
3	Dump Truck	2
4	Concrete Vibrator	2
5	Rock drilling Machine	2
6	
7	

[NOTE:

Based on the studies, carried out by the Project Manager the minimum suggested major equipment to attain the completion of works in accordance with the prescribed construction schedule is shown in the above list. The bidders should, however, undertake their own studies and furnish with their bid, a detailed construction planning and methodology supported with layout and necessary drawings and calculations (detailed) as stated in Section IV to allow the employee to review their proposals. The numbers, types and capacities of each plant/equipment shall be shown in the proposals along with the cycle time for each operation for the given production capacity to match the requirements.]

The Bidder shall provide further details of proposed items of equipment using the relevant Form in Section IV.

Section IV - Bidding Forms

Letter of Bid

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

The Bidder must prepare this Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and business address.

Note: All italicized text is to help Bidders in preparing this form.

Date of this Bid submission: *[insert date (as day, month and year) of Bid submission]*

RFB No.: *[insert number of RFB process]*

To: *[insert complete name of Employer]*

- (a) **No reservations:** We have examined and have no reservations to the bidding document, including Addenda issued in accordance with ITB 8;
- (b) **Eligibility:** We meet the eligibility requirements and have no conflict of interest in accordance with ITB 4;
- (c) **Bid-Securing Declaration:** We have not been suspended nor declared ineligible by the Employer based on execution of a Bid-Securing Declaration or Proposal-Securing Declaration in the Employer's Country in accordance with ITB 4.7
- (d) **Conformity:** We offer to execute in conformity with the bidding document the following Works: *[insert a brief description of the Works]*
- (e) **Bid Price:** The total price of our Bid, excluding any discounts offered in item (e) below is: *[Insert one of the options below as appropriate]*

[Option 1, in case of one lot:] Total price is: [insert the total price of the Bid in Rs. in words and figures];

Or

[Option 2, in case of multiple lots:] (a) Total price of each lot [insert the total price of each lot in Rs. in words and figures]; and (b) Total price of all lots (sum of all lots) [insert the total price in Rs. of all lots in words and figures];

- (f) **Discounts:** The discounts offered and the methodology for their application are:
 - (i) The discounts offered are: *[Specify in detail each discount offered.]*
 - (ii) The exact method of calculations to determine the net price after application of discounts is shown below: *[Specify in detail the method that shall be used to apply the discounts];*

- (g) **Bid Validity Period:** Our Bid shall be valid for a period specified in BDS ITB 18.1 (or as amended if applicable) from the date fixed for the Bid submission deadline specified in BDS 22.1 (or as amended if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (h) **Performance Security:** If our Bid is accepted, we commit to obtain a performance security [*and an Environmental and Social (ES) Performance Security, **Delete if not applicable***] in accordance with the bidding document;
- (i) **One Bid Per Bidder:** We are not submitting any other Bid(s) as an individual Bidder or as a subcontractor, and we are not participating in any other Bid(s) as a Joint Venture member, and meet the requirements of ITB 4.3, other than alternative Bids submitted in accordance with ITB 13;
- (j) **Suspension and Debarment:** We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer’s Country laws or official regulations or pursuant to a decision of the United Nations Security Council;
- (k) **State-owned enterprise or institution:** We are not a state-owned enterprise or institution/ We are a state-owned enterprise or institution but meet the requirements of ITB 4.6¹;
- (l) **Commissions, gratuities and fees:** We have paid, or will pay the following commissions, gratuities, or fees with respect to the Bidding process or execution of the Contract: [*insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount of each such commission or gratuity*]

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate “none.”)

- (m) **Binding Contract:** We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (n) **Not Bound to Accept:** We understand that you are not bound to accept the lowest evaluated cost Bid, the Most Advantageous Bid or any other Bid that you may receive; and

¹ Use one of the two options as appropriate

-
- (o) **Fraud and Corruption:** We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption; and
- (p) **Adjudicator:** We accept the appointment of *[insert name proposed in Bid Data Sheet]* as the Adjudicator.

[or]

We do not accept the appointment of *[insert name proposed in Bid Data Sheet]* as the Adjudicator, and propose instead that *[insert name]* be appointed² as Adjudicator, whose daily fees and biographical data are attached.

Name of the Bidder: **[insert complete name of person signing the Bid]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder:***[insert complete name of person duly authorized to sign the Bid]*

Title of the person signing the Bid: *[insert complete title of the person signing the Bid]*

Signature of the person named above: *[insert signature of person whose name and capacity are shown above]*

Date signed *[insert date of signing]* **day of** *[insert month]*, *[insert year]*

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

** : Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid

² In case appointment of Adjudicator was proposed from the list provided by an Institution in ITB 49, the replacement should also be proposed from the list of same institution.

Schedules

Bill of Quantities

Bill of quantities for all the following Lots are uploaded as part of Price Bid format in the <https://mizoramtenders.gov.in>

Lot No	Name of Work
1	2
Lot 1	Repair and Renovation of Civil Hospital Aizawl
Lot 2	Repair and Renovation of District Hospital Champhai
Lot 3	Repair and Renovation of District Hospital Lawngtlai
Lot 4	Repair and Renovation of Civil Hospital Lunglei
Lot 5	Repair and Renovation of District Hospital Siaha

Note:

1. *Item for which no rate or price has been entered in will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities (refer: ITB Clause 14.2 and GCC Clause 45.4).*
2. *Unit rates and prices shall be quoted by the bidder in Indian Rupees (refer: ITB Clause 14.1 and ITB Clause 15.1).*
3. *Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by quantity, the unit rate quoted shall govern (refer: ITB Clause 31).*
4. *Where there is a discrepancy between the rate in figures and words, the rates in words will govern (refer: ITB Clause 31).*

Price Schedule

Lot 1: Repair and Renovation of Civil Hospital, Aizawl

Lot	Description	Amount in INR (in figures)	Amount in INR (words)
Lot 1	Repair and Renovation of Civil Hospital, Aizawl		

Works requirements for Civil Hospital Aizawl

Scope of work

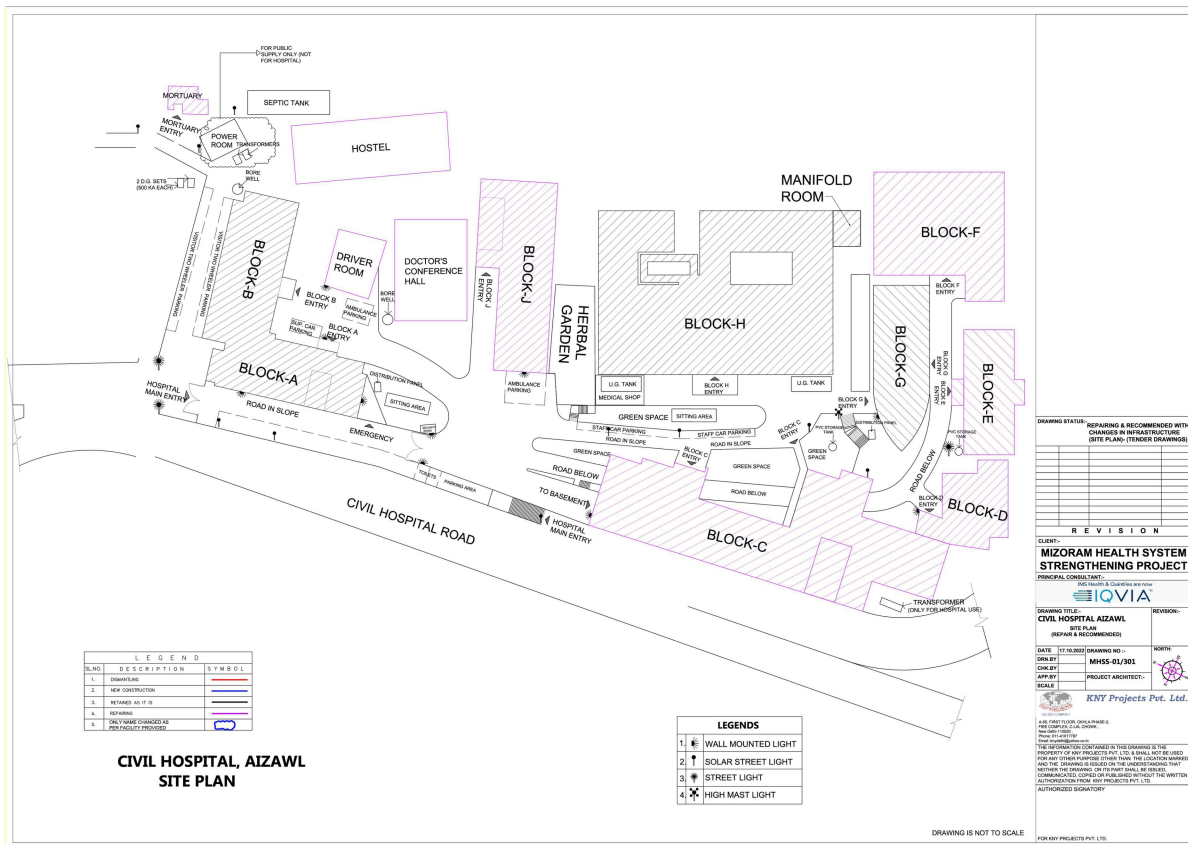
Civil Hospital at Aizawl is located in the heart of Aizawl city and is spread over 2.87 acres of land area. The hospital was built in stages from 1896 onwards. It was initially planned for 12 beds and now has 275 functional beds.

The Aizawl civil hospital campus consists of 24 buildings and their area statement is as under-

S.No	Block name	Ground Effectuated Area (Sq.M)	Remarks
1	Mortuary	85.51	Building proposed to be repaired and renovated
2	Block - J	498.08	Building proposed to be repaired and renovated
3	Block-E	185.34	Building proposed to be repaired and renovated
4	Block- C&D	845.714	Building proposed to be repaired and renovated
5	Block - F	455.45	Building proposed to be repaired and renovated
6	Driver room	36.46	Building proposed to be repaired and renovated
7	Hostel-1	305.2	Building proposed to be repaired and renovated
8	Hostel-2	58.71	
9	Staff quarter	67.74	
10	godown	50.12	
11	Block-A & B	706.52	

12	Toilet	8.4	
13	Seminar hall	62.89	
14	Tin Hut-1	12.7	
15	Block - H	1629.98	
16	Tin Hut-2	29.3	
17	Toilet-1	15.94	
18	Toilet-2	2.25	
19	U/C	23.99	
20	U/C	9.96	
21	Block - G	302.71	
22	DMC	19.24	
23	Tin Hut-3	13.87	
24	Covid vaccination Centre	23.19	
	Total	5449.264	

Layout.



Presently the Hospital has following functional departments:

- Casualty.
- Surgery.
- Medicines.
- Obstetrics and Gynecology.
- Pediatrics.
- Orthopedics.
- Cardiology.
- Dermatology.
- Radiology.
- Ophthalmology.
- ENT.
- Pathology.
- Bacteriology.
- Biochemistry.
- Anesthesiology.
- Oncology.
- Forensic Medicine and Blood bank.
- AYUSH departments.
- Administration departments.

The following table presents the summary of repairs and renovation works to be undertaken in the seven existing buildings:

Block	Built-up Area	Floor no.	Location	Staircase	Departments
C	3377 sq. mt	6 story building with 3 level entry	Situated along with the main road near the second entry of the hospital	One Staircase	Major part of OPD, skin and STD department and basement used for doctor's car parking.

D	500 sq. mt	4 story building	Situated between Block C and Block D	One Staircase	Aayush Building.
E	764 sq. mt	4 story building	Situated between Block D and Block F	One Staircase	Private ward with One VIP Ward Building.
F	2011 sq. mt	4 story building	Situated just between Block E and Block G (PMJAY)	One Staircase	Department of Radio Diagnosis & Imaging, Cardiac OPD and Ward and they have some private Ward and on top floor have doctor's Library,
G (PMJAY)	1920 sq. mt	6 story building	Situated just between Block E and Block H	One Staircase	Autoclave room, ICU Ward and Cabin.
J and Mortuary	3300 sq. mt	7 story Building	Situated just left side of Block H	One Staircase	Partly Basement used for Parking, Department of OBS & Gynae and Emergency Labour Room. on top floor have conference hall.

Critical locations Photos :



Damaged Plaster at Entrance of Manifold Room



Block F
Librarian room , Terrace waterlogged, need to be treatment area apex 5.2x5.2



Block E
Ceiling & wall seepage from shaft, and roof beam cracked, 2.4x1.2



Block C-Third Floor
Internal Ceiling Cracked, need Plaster Repair

The works to be undertaken functional of building. Contractor coordinate to hospital superintendent and prepare a plan on the sequence of work to be done based on the hospital superintendent recommendations. The work to start only after shifting of equipment and patients from room and to be signed off by concerned authority. That the area is ready for repair and renovation. During the construction activity to avoid safety reasons. The area where repair and renovations to be undertaken should sealed of completely caution tape and green cloth in the work premises and sign boards are to be provide mentioning the area of the work to caution the people to avoid those areas.

Proposed changes and repairs in the buildings under the Civil hospital Aizawl.

Block	Proposed Changes	Drawing No.
Observation and recommendations for remaining blocks (C, D, E, F, G, J)		
Mortuary	Repairing, renovation, considered.	Drawing no.1/270-271
Blocks (C, D, E, F, G, J)	<ul style="list-style-type: none"> • Repair considered wherever required <ul style="list-style-type: none"> ○ Seepage ○ Crack repair and Plastering ○ Flooring ○ Painting ○ Water proofing All the approach roads and ramps in each Blocks needs to be repaired and levelled off	Drawing no.1/201-269
Electrical & CCTV	<ul style="list-style-type: none"> • New electrical inventories are proposed in the BoQ that needs to be 	Drawing no.1/501-534

Block	Proposed Changes	Drawing No.
	replaced with the damaged one <ul style="list-style-type: none"> • CCTV Camera proposed for the monitoring 	
Exteriors	<ul style="list-style-type: none"> • A demarcated place identified for separate covered parking space for visitors and staff in the hospital. • Ambulance Parking can be developed near open space outside the casualty building as shown in site layout in place of existing staff parking. • All the pathways to be properly maintained to avoid uneven slopes in the facility. 	Site Plan

**Civil Works
(AS PER MPWD 2019)**

S.No	MPWD 2019	Description of Items	Unit	Quantity	Rate	Amount
1	2.07	Earthwork in excavation in foundation trenches or drains etc. (not exceeding 1.5m in width or 10sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5m including getting out excavated soil and disposal of surplus excavated soil as directed within a lead of 50 metres.				
	(b)	Hard Soil (pick work)	<i>cum</i>	86.00		
2	2.17	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	<i>cum</i>	46.80		
3	4.02	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work upto plinth level:				
	(a)	1:2:4 (1 cement :2 coarse sand :4 stone aggregate 20mm nominal size)				
		Details of Cost for 1.00 Cum	<i>cum</i>	40.37		
4	4.06	Providing and laying cement concrete in retaining wall, return walls, walls (any thickness) including pilasters, piers, columns,abutments, pillars, posts,plain window sills, sunken floors, etc. up to floor five level excluding the cost of centering, shuttering and finishing :				
	(a)	1:1.5:3 (1 Cement:1.5 Coarse Sand:3 graded Stone aggregate 20 mm nominal size.)	<i>cum</i>	41.90		
5	6.01	First class brickwork in foundation and plinth in :				
	(c)	in cement mortar 1: 6 (1 cement : 6 coarse sand)	<i>cum</i>	5.00		

6	6.05	Half brick masonry with first class brick in foundation and plinth in:				
	(B)	in cement mortar 1: 4 (1 cement : 4 coarse sand)	<i>sqm</i>	46.80		
7	9.06	Providing 1st class local wood dressed in frames of chaukat for doors, windows, clerestory windows fixed in position.	<i>cum</i>	14.35		
8	9.11	Providing and fixing 1st class local wood panelled shutters for doors etc. including M.S. butt hinges with necessary screws, etc. complete.				
	(b)	35 mm thick.	<i>sqm</i>	76.86		
9	9.55	Providing and fixing factory made PVC door frame made of PVC extruded section (Chaukhat) having overall dimension of 48x40 mm (tolerance + 1 mm) with wall thickness 2.0 mm + 0.2 mm, corners of the door frame to be mitred and joined by means of plastic/M.S. galvanised brackets and stainless steel screws. The hinge side vertical of the frames reinforced by galvanised M.S. tube of size 19x19 mm and 1 mm + 0.1 mm wall thickness and 3 Nos. stainless steel hinges fixed to the frame complete as per manufacturers specification and direction of Engineer-in-charge. (Sintex, Plasopan or equivalent) :	<i>Rmt</i>	232.75		

10	9.56	Factory made PVC door shutters made of styles and rails of a uPVC hollow section of size 59x24 mm and wall thickness 2 mm (± 0.2 mm) with inbuilt edging on both sides. The styles and rails mitred and joint at the corners by means of M.S. galvanised/ plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 20x20 mm and 1 mm (± 0.1 mm) wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x24 mm and 2 mm (± 0.2 mm) wall thickness, fixed to the shutter styles by means of plastic/galvanised M.S. 'U' cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm (± 0.1 mm) wall thickness. The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in-charge. (For W.C. and bathroom door shutter) (Sintex, Plasopan or equivalent).				
	(b)	30 mm thick shutter	<i>sqm</i>	75.60		
11	10.10	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer. (round, square or rectangular hollow tubes etc.)				
	(a)	MS tube 40mm @ 3.6 Kg/m	<i>kg</i>	518.15		

12	11.03	<p>Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular and other sections of approved make conforming to IS: 733 and IS : 1285, anodised transparent or dyed to required shade according to IS : 1868. (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips, or with expansion hold fastners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc.</p> <p>Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and paneling to be paid for separately). For fixed portion.</p>				
	(b)	Anodised	<i>sqm</i>	2.88		
13	11.04	<p>For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required. (Glazing to be paid for separately)</p>				
	(b)	Anodised	<i>sqm</i>	2.88		
14	11.05	<p>Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge .</p>				
	(a)	With glass panes of 4.0 mm thickness.	<i>sqm</i>	2.52		
	(d)	Frosted glass of 4.00 mm thickness.	<i>sqm</i>	0.36		

15	12.09	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).				
	(c)	Dark shade using ordinary cement	<i>sqm</i>	477.82		
16	12.11	Providing and Fixing ceramic glazed floor tiles of size 300x300mm or more (thickness to be specified by the manufacturer) of 1st quality conforming to IS: 15622 of approved make in all colours,shades, except white,ivory,grey,fume red brown, laid on 20mm thick cement mortar 1 : 4 (1cement : 4 course sand) including pointing the joints with white cement and matching pigments etc. complete. as per designed colour. (Matt finish)				
	(b)	matt Finish	<i>sqm</i>	233.43		
17	12.12	Providing & laying vitrified floor tiles in different sizes (thickness to be specified by the manufacture) with water absorption less than 0.08% and conforming to IS:15622,of approved make, in all colours and shades, laid on bed of 20mm thick cement mortar 1 : 4 (1cement:4course sand), including the joints with white cement and matching pigments etc.complete.as per design colours.				
	(b)	Nano tech (Single charge)	<i>sqm</i>	2525.76		
18	12.13	Providing & laying vitrified tiles in different sizes (thickness to be specified by the manufacture) with water absorption less than 0.08% and conforming to IS:15622,of approved make, in all colours and shades, in skirting/dado , riser of steps, laid with cement based high polymer modified quick set tile adhesive (water) based) conforming to IS:15477, in average 6mm thickness, including grouting of joints (Payment for grouting				

		of joints to be made separately)				
	(b)	Nano tech (Single charge)	<i>sqm</i>	293.89		
19	12.17	Grouting the joints of flooring tiles having joints of 3 mm width using epoxy grout mix of 0.70 kg of organic coated filler of desired shade(0.10kg of hardener and 0.20 kg of resin per kg) grouting and finishing complete as per direction of Engineer-in-charge.	<i>sqm</i>	507.80		
20	12.19	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to e specified by the manufacaturer),of approved make, in all colours, shades wxcept burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12mm thick bed of cemunt mortar 1:3 (1cemeny :3 coarse sand) and jointing with cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	<i>sqm</i>	347.43		
21	12.23	Providing & fixing homogenous sheet in flooring and skirting in approved pattern on a smooth and damp proof base using rubber based adhesives of approved quality and manufacturer like Dunlop S-758, Fevicol SR 998 or equivalent including rolling with light wooden roller weighting about 5kg all complete as directed by engineer-in-charge, in approved colour and shade.				
	(c)	3mm thick sheet	<i>sqm</i>	220.36		
22	13.16	Providing and fixing 4mm thick plywood walling lining with necessary screws				

		complete -				
	(a)	With teakply facing of approved manufacture	<i>sqm</i>	205.00		
23	14.37	Providing and fixing 150 mm bright finished brass floor door stopper with rubber cushion, screws, etc. to suite shutter thickness complete.	<i>no</i>	74.00		
24	14.46	Providing and fixing CP Brass Sliding Door Bolts (aldrops) bright finished with nuts and screws etc. complete.				
	(b)	250 x 16 mm	<i>no</i>	37.00		
25	14.47	Providing and fixing CP brass tower bolts (socket bolts) bright finished with necessary screws etc. complete.				
	(a)	250 mm	<i>no</i>	74.00		
26	14.48	Providing and fixing CP brass handles with necessary screws, etc. complete				
	(a)	250mm	<i>no</i>	74.00		
27	14.50	Providing and fixing alluminium sliding door bolts (aldrops) anodised transparent or dyed to required colour or shade with nuts and screws etc. complete.				
	(b)	250 x 16 mm	<i>no</i>	9.00		
28	14.51	Providing and fixing Aluminium Tower Bolts (Socket Bolts) anodised transparent or dyed to required colour or shade with necessary screws etc. complete.				
	(c)	150 mm	<i>no</i>	18.00		
29	14.52	Providing and fixing alluminium handles anodised transparent or dyed to required colour or shade with necessary screws, etc. complete				
	(a)	125 mm	<i>no</i>	18.00		

30	17.01	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm uPVC P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:				
	(a)	Orrisa pan with integral type foot rests				
	(i)	White	<i>no</i>	16.00		
31	17.03	Providing and fixing low level P.V.C. flushing cistern of Parryware/ Hindware /Cera and equivalent make with fittings complete.				
	(i)	10 litres-white	<i>no</i>	44.00		
32	17.04	Providing and fixing vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :				
	(i)	White	<i>no</i>	17.00		
33	17.10	Providing and fixing solid plastic Seat Cover and lid for pedestal type W.C. pan with C.P. brass hinges, rubber buffers, etc. complete.				
	(i)	White	<i>eac h</i>	46.00		
34	17.15	Providing and fixing Health faucet with flexible tube upto 1 metre long and holder of quality and make as approved by Engineer - in - charge..	<i>no</i>	30.00		

35	17.16	Providing and fixing White vitreous china wash basin Standard of Parryware/ Hindware/ Cera and equivalent make with R.S. or C.I. brackets, 15mm C.P. brass pillar taps, C.P. brass chain with rubber plugs, 32mm C.P. brass waste of standard pattern, 32mm C.P. brass traps and union complete including painting of fittings and brackets, cutting and making good the walls wherever required.				
	(a)	Vitreous China Wash basin size 630x450 mm with single 15 mm C.P. brass pillar taps				
	(i)	White	<i>no</i>	19.00		
36	(b)	Vitreous China Wash basin Compact 450 x 300 mm with single 15 mm C.P. brass pillar taps				
	(i)	White	<i>no</i>	1.00		
37	17.24	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :	<i>no</i>	28.00		
38	17.33	Providing and fixing on wall face SWRPVC soil, waste and vent pipes including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia.	<i>rm</i>	344.50		
	(b)	75mm dia.	<i>rm</i>	155.30		
39	17.34	Providing and fixing SWRPVC plain bend of required degree (87.50°) including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia.	<i>no</i>	78.00		
	(b)	75mm dia.	<i>no</i>	93.00		
40	17.35	Providing and fixing SWRPVC plain bend of required degree (45°) including jointing				

		with rubber lubricant/cement solvent complete.				
	(a)	110mm dia.	<i>no</i>	82.00		
	(b)	75mm dia.	<i>no</i>	89.00		
41	17.36	Providing and fixing SWRPVC bend with access door of required degree including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia SWRPVC bend with access door.	<i>no</i>	29.00		
	(b)	75mm dia SWRPVC bend with access door.	<i>no</i>	34.00		
42	17.37	Providing and fixing single equal SWRPVC plain junction of required degree (T-junction) .				
	(a)	110x110x110mm	<i>no</i>	61.00		
	(b)	75x75x75mm.	<i>no</i>	38.00		
43	17.41	Providing and fixing SWRPVC socket including jointing with rubber lubricant/cement solvent.				
	(a)	110mm dia. Socket	<i>no</i>	158.00		
	(b)	75 mm dia socket.	<i>no</i>	125.00		
44	17.44	Providing and fixing 125/110 S-trap SWRPVC including joining with rubber lubricant/ solvent cement.	<i>no</i>	29.00		
45	17.45	Providing and fixing uPVC multi floor trap with floor trap grating including jointing with rubber lubricant/ solvent cement complete.	<i>no</i>	58.00		
46	18.07	Providing and fixing brass bib cock of approved quality.				
	(a)	15mm nominal bore	<i>no</i>	28.00		
47	18.14	Providing and fixing ball valve (brass) of approved quality, High or low pressure,				

		with plastic floats complete :				
	(a)	15mm nominal bore	<i>no</i>	16.00		
48	18.16	Providing and fixing 15 mm nominal bore C.P. brass angle stop cock for basin mixer and geyser points of approved quality conforming to IS:8931 .				
	(b)	Class-II	<i>no</i>	183.00		
49	18.29	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
	(a)	15mm dia nominal bore.	<i>rm</i>	276.30		
	(b)	20mm dia nominal bore.	<i>rm</i>	372.00		
50	18.32	Making connection of CPVC pipes distribution branch by providing and fixing equal Tee with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia nominal bore.	<i>no</i>	159.00		
	(b)	20mm dia nominal bore.	<i>no</i>	235.00		
51	18.36	Making connection of Astral CPVC pipes distribution branch by providing and fixing Elbow 90o with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	<i>no</i>	304.00		
	(b)	20mm dia.	<i>no</i>	212.00		

52	18.37	Making connection of Astral CPVC pipes distribution branch by providing and fixing Elbow 45o with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	<i>no</i>	152.00		
	(b)	20mm dia.	<i>no</i>	150.00		
53	18.43	Making connection of Astral CPVC pipes distribution branch by providing and fixing Female Adaptor (Brass) with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	<i>no</i>	183.00		
54	18.44	Making connection of Astral CPVC pipes distribution branch by providing and fixing Socket/Coupling with jointing, testing complete including cutting and making good etc.				
	(b)	20mm dia.	<i>no</i>	376.00		
55	18.45	Making connection of Astral CPVC pipes distribution branch by providing and fixing Reducer Coupling with jointing, testing complete including cutting and making good etc.				
	(b)	20 x 15mm	<i>no</i>	43.00		
56	19.02	Applying double coated cement slurry with water proofing chemical (SUPER latex chemical) in proportion 1 : 4 :7 (1 latex : 4 water :7 cement) including cleaning the treated surfaces with brushes etc.@ 0.158kg/sqm .	<i>sqm</i>	1847.59		
57	19.03	Providing and mixing water proofing chemical (PIDI PROOF POWDER chemical) in plain and reinforced cement concrete work 1 : 1.5 : 3 , @ 1.0 % by weight of cement.	<i>cum</i>	132.33		
58	19.19	Extra for providing and mixing water proofing chemical (latex or equivalent				

		chemical) @ 2kg per bag of cement in -				
	(b)	12mm cement plaster 1 : 4 (1 cement : 4 fine sand).	<i>sqm</i>	157.30		
59	19.19	Extra for providing and mixing water proofing chemical (latex or equivalent chemical) @ 2kg per bag of cement in -				
	(d)	15mm cement plaster 1 : 4 (1 cement : 4 sand).	<i>sqm</i>	460.91		
60	20.08	12mm cement plaster 1 : 4 (1 cement : 4 fine sand).	<i>sqm</i>	680.68		
61	20.12	15mm cement plaster 1 : 4 (1 cement : 4 fine sand).	<i>sqm</i>	516.05		
62	20.25	6mm cement plaster to ceiling 1 : 3 (1 cement : 3 fine sand)	<i>sqm</i>	232.14		
63	20.66	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade: New work (one or more coats)	<i>sqm</i>	286.44		
64	20.72	Painting with synthetic enamel paint of approved brand and manufacture in all shades on new work (two or more coats).				
	(a)	General quality	<i>sqm</i>	47.31		
65	20.73	Wall painting with interior emulsion paint of approved brand and manufacture on new work (two or more coats) to give an even shade.				
	(a)	Regular interior emulsion like Rangoli deluxe emulsion etc.	<i>sqm</i>	360.25		
	(b)	Premium interior emulsion like Velvet touch Luxol silk etc.	<i>sqm</i>	1122.25		
66	20.75	Finishing walls with exterior emulsion of required shade on new work (three or more coats) to give an even shade.				
	(b)	Premium exterior emulsion like weather shield, weathercote etc.	<i>sqm</i>	38.02		

67	23.02	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	<i>sqm</i>	11990.52		
68	23.03	Repairs to plaster of thickness 12mm to 20mm in patches of area 2.5 sq. metres and under including cutting the patch in proper shape and preparing and plastering the surface of the walls complete including disposal of rubbish to the dumping ground within 50 metres lead :				
	(a)	With cement mortar 1:3 (1 cement : 3 fine sand)	<i>sqm</i>	17.50		
	(b)	With cement mortar 1:4 (1 cement : 4 coarse sand)	<i>sqm</i>	62.35		
69	23.04	Fixing chowkhats in existing opening including embedding chowkhats in floors or walls cutting masonry for holdfasts embedding hold fasts in cement concrete blocks with cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) painting two coats of coal tar to sides of chowkhats and making good the damages to walls and floors as required complete including disposal of rubbish to the dumping ground within 50 metres lead :				
	(a)	Door chowkhats	<i>no</i>	37.00		
70	23.05	Making the opening in brick masonry including dismantling in floor or walls by cutting masonry and making good the damages to walls, flooring and jambs complete, to match existing surface i/c disposal of mulba/ rubbish to the nearest municipal dumping ground, all complete as per direction of Engineer-in-Charge	<i>sqm</i>	2.52		
71	23.08	Renewing glass panes and refixing existing wooden fillets:				
	(a)	Glass panes of thickness 4mm	<i>sqm</i>	31.68		

72	23.44	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade : Old work (one or more coats)	<i>sqm</i>	2768.86		
73	23.52	Wall painting with interior emulsion paint of approved brand and manufacture on old work (one or more coats) to give an even shade.				
	(b)	Premium interior emulsion like Velvet touch luxol silk etc.	<i>sqm</i>	6086.58		
74	23.53	Finishing walls with regular exterior emulsion of required shade on old work (three or more coats) to give an even shade.				
	(b)	Premium exterior emulsion like weathercote, weather shield etc.	<i>sqm</i>	5375.53		
75	24.01	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.				
	(a)	Nominal concrete 1:3:6 Or richer mix .	<i>cum</i>	61.32		
76	24.06	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead:				
	(a)	In cement mortar	<i>cum</i>	5.00		
77	24.11	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead :				
	(a)	Of area 3 sq. metres and below	<i>no</i>	68.00		
78	24.22	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
	(a)	For thickness of tiles 10 mm to 25 mm	<i>sqm</i>	2268.13		

79	24.22	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
	(b)	For thickness of tiles above 25mm and upto 40mm	<i>sqm</i>	710.95		
80	24.43	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.	<i>sqm</i>	1505.11		
81	24.45	Dismantling W.C. Pan of all sizes including disposal of dismantled materials all complete as per directions of Engineer-in-Charge.	<i>sqm</i>	35.28		
82	24.46	Hacking of CC flooring including cleaning for surface etc. complete as per direction of the Engineer-in-Charge.	<i>sqm</i>	516.49		
83	NSR	Note :- Transport charges (carriage) for dumping the building waste at near by dumping yard/zone. Disposal of approx 9730 cft (building waste generated) around 5 Km from DH Aizawl in 49 trip i.e. 200 cft /Trip	<i>No</i>	49.00		
84	NSR	Providing & Inserting 12mm dia galvanised steel injection nipple in honeycomb area and along the crackline including drilling of holes required diameter (20mm to 30mm) upto a depth of 30mm to 80mm at required spacing and making the holes and cracks dust free by blowing compressed air , sealing the distance between injection nipple with the adhesive chemical of approved make and allow it to cure completely.	<i>Nos</i>	1847.59		
85	NSR	Injection approved grout (SIKADUR-55LP) or equivalent in proportion recommended by the manufacturer into cracks/hony-comb area of concrete/masonry by suitable gun/pump at required pressure including cutting of nippales	<i>Kg</i>	492.69		

86	NSR	Providing and fixing factory made solid Wood Polymer Composite (WPC) single extruded Door Frame section of size with encapsulation of 8MM rigid layer on all the six surfaces. The door frame will have a rebat of 32MM. Door Frame section of 63.5x100 MM .The two Vertical members are to be joined together with the horizontal member using 8x75 MM long MS Star full thread screws to be used with reverse forward speed control hand drilling machine. The ready/assembled door frame is fixed to the wall using hold fast or bolt fasteners. A minimum of 4 No.s of screws to be provided for each vertical member & minimum 2no.s for horizontal member	<i>Rmt</i>	40.80		
87	NSR	Providing and fixing 28 -30 MM thick solid Wood Polymer Composite(WPC) single extruded door shutter with 3MM top and bottom rigid layer with an overall density of 750kg/Cum. It will be fixed to the frame using 3 inch /4 inch hinges. A minimum of 4 hinges will be required for fixing the door with the frame	<i>sqm</i>	15.12		
88	NSR	Providing Diluting and injecting chemical emulsion for existing windows and doors post construction Anti-Termite Treatment Chlorpyriphos 20% EC. (Note: Spray Treatment: Spray will be applied on all windows and doors. Chemical will be injected inside the cracks of windows and doors at the wall junction.)				
	(a)	Doors / Windows	<i>NO</i>	50.00		
	(b)	Providing and supply Service cost for Diluting and injecting chemical emulsion for Effected Floor areas	<i>Sqm</i>	1200		

89	NSR	Chipping of unsound/weak concrete material from slabs, beams, columns etc. with manual Chisel and/ or by standard power driven percussion type or of approved make including tapering of all edges, making square shoulders of cavities including cleaning the exposed concrete surface and reinforcement with wire brushes etc. and disposal of debris for all lead and lifts all complete as per direction of Engineer-In-Charge				
		25 mm average thickness	<i>sqm</i>	100.00		
90	NSR	Providing, mixing and applying bonding coat of approved adhesive on chipped portion of RCC as per specifications and direction of Engineer-In-charge complete in all respect.				
		Epoxy bonding adhesive having coverage 2.20 sqm/kg of approved make	<i>sqm</i>	100.00		
91	NSR	Providing, mixing and applying SBR polymer (of approved make) modified Cement mortar in proportion of 1:4 (1 cement: 4 graded coarse sand with polymer minimum 2% by wt. of cement used) as per specifications and directions of Engineer-in-charge. Note: Measurement and payment: The pre-measurement of thickness shall be done just after the surface preparation is completed and Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding / tapping with a blunt metal instrument and/or the 75mm size cube crushing strength at the end of 28 days to be not less than 30 N/Sqmm ²).				
		12 mm average thickness.	<i>sqm</i>	100.00		

ELECTRICAL

(AS PER MPWD 2016)

S.N O	MPWD 2016	DESCRIPTION	UNIT	QT Y	RAT E	AMOU NT
1	C:02:06	Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per IS:694 (1990) and Flame retardant low smoke & Halogen (FR-LSH) 1100 voltage graded copper flexible wire stranded copper running inside PVC Casing & capping (Grade-II) of all available sizes diameter fixed, surface on the wall/ceiling/floor as per convenience including junction box having required numbers of ways from Main to Sub-Main/DB/Sub-Main/DB to SDB/SDB/Switch boards/SDB to switch boards as required				
	C:02:06(A)	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	RM	180		
2	C:04:01	Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per IS:694 (1990) and Flame retardant (FR)1100 voltage graded copper flexible wire stranded copper running inside PVC casing & capping (Gr-II) 20mm dia fixed, surface on the wall/ceiling/floor as per convenience including junction box having required numbers of ways from control switch to the light point etc as required:				
	C:04:01(A)	Light Point. Very Short Point (ordinary)	Per Point	382		
	C:04:02(A)	Light plug Point Very Short Point (ordinary)	Per Point	74		
	C:04:03(A)	Power plug Point 15/16 A Very Short Point (ordinary)	Per Point	35		
3	E:01:00	Rewiring for light point/fan point/exhaust fan point/calling bell point with 1.5 Sqmm of PVC insulated standard copper				

		conductor 1.5 sqmm as per IS:694 (1977) and Life shields Halogen Free Flame Retardant (HFFR) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as				
	E:01:01	VERY SHORT POINT	POINT	328		
4	F:11:00	Supplying and drawing the following sizes of PVC insulated standard copper conductor 1.5 sqmm as per IS:694 (1977) and Flame Retardant Low smoke & Halogen (FRLS&H) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as required				
i.	F:11:03	3X1.5 sqmm	RM	70		
ii.	F:12:03	3X 2.5 sqmm	RM	150		
	F:13:03	3X 4 sqmm	RM	50		
	F:23:05	5X 6 sqmm	RM	100		
	F:25:05	5X 10sqmm	RM	50		
	F:26:05	5X 16 sqmm	RM	50		
5	H:01:00	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.				
	H:01:02	25mm dia steel conduit pipe	RM	320		
6	I:02:00	Supplying and fixing of Modular switch board grade-II of the following sizes/modules on surface/recess including PVC/Steel boxes, modular plate and necessary switches, plug/socket, and fan regulators etc. with necessary painting if necessary				
i.	I:02:13	2 S	EACH	119		
ii.	I:02:33	3 S	EACH	75		
iii.	I:02:53	4 S	EACH	42		

7	J:01:39	Installation of Exhaust fan up-to 450 mm Sweeps in the existing opening, including making holes to suit the size of the above Exhaust fan, and making good the damage, connection, testing and commissioning etc, as required.	EACH	168		
i	J:01:42	Extra for fixing the louvers/ shutters complete with frame for a exhaust fan of all sizes.	EACH	168		
8	N:03:00	Supplying, fitting, & fixing of 4-Ways MCB DB single door in sheet steel, Phosphatised powderpainted MCB DBs with Bus Bar, Neutral link, earth bar and din rail conforms to IS:13032, IS:8623, BS:5486 240 Volts 50 Hz, on surface/recess including inter-connection, painting etc, as required.				
i.	O:03:05	4-ways MCB DB SP&N DD metallic door	Each	2		
ii.	O:03:06	8-ways MCB DB SP&N DD metallic door	Each	10		
iii.	O:03:07	12-ways MCB DB SP&N DD metallic door	Each	6		
iv.	O:03:18	4-ways (4+12) MCB DB TP&N DD metallic door	Each	5		
v.	O:03:19	6-ways (4+18) MCB DB TP&N DD metallic door	Each	7		
vi.	O:03:20	8-ways (8+24) MCB DB TP&N DD metallic door	Each	2		
9	O:02:00	Supplying, fitting, & fixing of different poles Plastic MCBs Enclosures fitted with din rail for MCBs for Cut out etc as required;-				
i.	O:02:04	Sheet steel powder paint MCB Enclosures 4 poles	Each	4		
ii.	O:02:03	Sheet steel, powder paint MCB Enclosures 1/2 poles	Each	10		

10	N:01:00	Supplying and fixing of all types and rating MCBs, RCCBs, ELCBs etc, 240/415 Volts 50Hz AC supply in the existing MCB DB complete with connections, testing & commissioning etc in completed				
i.	N:04:01	25-100 Amps' SP, 16KA MCCB	EACH	4		
ii.	N:01:24	50/63 Amps' FP, MCB C- series	EACH	2		
iii.	N:01:26	40 Amps' DP, MCB Isolator	EACH	10		
iv.	N:01:35	40 Amps' FP, MCB Isolator	EACH	10		
v.	N:01:01	5 to 32 Amps ,SP, MCB B- series	Each	400		
vi.	N:01:36	63 Amps' FP, MCB Isolator	EACH	10		
11	J:02:00	Installation of all kind of Electrical appliances				
i	J:01:04	Supplying, fitting and fixing Batten Holder fancy including connection etc, as required	per point	447		
ii	J:02:05	Installation of Air Conditioner Split Type 1.5/2.0 in the existing wall including fixing the Hook in the wall by standard size of sleeve Nuts and bolts or Standard Screw for the above Air Conditioner Split type 1.5/2.0 TR, and making good the damage, connection, testing and commissioning etc, as required	EACH	4		
iii.	J:01:36	Installation, testing & commissioning of ceiling fan and regulator, including wiring the downrod of standard length (upto 30cm) with 2X1.5 sqmm PVC insulated copper conductor single core cable etc, as required	EACH	115		
iv	J:01:39	Installation of Exhaust fan up-to 450 mm Sweeps in the existing opening, including making holes to suit the size of the above Exhaust fan, and making good the damage, Connection, testing and commissioning etc, as required.	EACH	168		
v	J:01:42	Extra for fixing of the gravity louvers/shutters complete with frame for Exhaust fan of all sizes as required	EACH	168		

12	E:02:00	Supplying and drawing the following sizes of PVC insulated standard copper conductor 1.5 sqmm as per IS:694 (1977) and Flame Retardant Low Smoke & Halogen (FRLS&H) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as required				
	E:02:01	VERY SHORT POINT	per point	165		
13	R:01:01	Providing & fixing of lightning conductor finial, made of 25mm dia' 300mm long, coppertube, having single prong (one finger system) at the top, with 85mm dia' 3mm thick copperbase plate including holes etc. complete as required	EACH	4		
14	R:01:62	Providing & fixing of G.I tape 20mmx3mm thick on parapet or surface of wall for lightning conductor as required (for horizontal run).	RM	150		
15	Q:01:01	Earthing with G.I Earth Pipe 4.5 Mtr long and 40mm dia' including accessories and providing masonry enclosure with cover plate having locking arrangement and water pipe,etc. (but without charcoal or coke and salt) complete as required	SET	2		
1	Q:01:03	Extra for using salt and charcoal for pipe earth electrode as required	EACH	2		
17	R:01:68	Providing and laying of G.I tape 32mmx6mm thick from earth electrode directly in ground as required	RM	100		

18	Q:01:43	Supplying & Laying of 25mmx5mm G.I Strip in 40mm dia' G.I pipe from earth electrode etc. as required. (25mmx5mm G.I tape (1.0 Kg/M))	RM	100		
19	Q:01:05	Earthing with G.I Earth plate 600mmx600mmx6mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and water pipe, etc. (but without charcoal or coke and salt) complete as required	Each Set	6		
20	Q:01:09	Extra for using salt and charcoal for G.I or Copper Plate electrode as required	EACH	6		
21	Q:01:02	Earthing with G.I Earth Pipe 3.5 Mtr long and 25mm dia' for copper wiring including accessories and providing masonry enclosure with cover plate having locking arrangement required and water pipe, etc. (but without charcoal or coke and salt) complete as	Each Set	6	-	
22	Q:01:03	Extra for using salt and charcoal for pipe earth electrode as required	EACH	1	-	
23	Q:01:50	Providing and fixing of 6 SWG G.I Wire on surface or in recess for loop earthing along with the existing surface/recess conduit/sub-main wiring/cables etc. as required.	RM	30		
24	Q:01:45	Providing & Laying of earth connection from earth electrode with 4.00mm dia' Copper Wire in 15mm dia' G.I pipe from earth electrode as required. (8 SWG Copper Wire (4mm dia))	RM	50		

25	Q:01:48	Q:01:48 Providing and fixing of 6 SWG G.I Wire on surface or in recess for loop earthing etc. asrequired	RM	50		
26	T:04:12	Laying of one number PVC insulated and PVC sheathed/XLPE Power cables of 1.1KV grade of size exceeding 25 Sqmm but not exceeding 120 Sqmm on surface	EACH	32		
27	MPWD	Supply of Ceiling fan 5 star rated Fusion 5* (Metallic beige-brown/pearl ivory-Gold) 1200mm sweeps (Havells/Usha/Polar/Gromton/Baja j)	EACH	115		
28	MPWD	Supply of Exhaust fan 300mm sweeps ISI marked (Usha/Havells/Polar/Gromton/Baja j)	EACH	168		
29	MPWD	4KVA Automatic Stabilizer with built-in high cut, Buzzer & Timer :Input:50VA-280V & Output:210V-240V (Venus/Indo/V-Guard/CARE)	EACH	1		
30	MPWD	5/6 A switch	EACH	358		
31	MPWD	2 way 5/6 A switch	EACH	20		
32	MPWD	Modular Switch 16Amps On-Off	EACH	35		
33	MPWD	3 pin 5/6 A socket outlet	EACH	128		
34	MPWD	Modular Socket 16/6Amp 3+3	EACH	45		
35	MPWD	Modular square Switch 10 A SP 1 Way 2 M	EACH	15		
36	MPWD	two module stepped type electronic fan regulator on the existing modular plate switch box	EACH	36		

		including connections but excluding modular plate etc. as required.				
37	MPWD	modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	EACH	25		
38	MPWD	Modular Plate for 2-Modules	EACH	30		
39	MPWD	Modular Plate for 3-Modules	EACH	40		
40	MPWD	Modular Plate for 4-Modules	EACH	40		
41	MPWD	Modular Plate for 6-Modules	EACH	40		
42	MPWD	Modular Plate for 8-Modules	EACH	40		
43	MPWD	PVC Box for 3 Modules (surface type)	EACH	4		
44	MPWD	PVC Box for 4 Modules (surface type)	EACH	10		
45	MPWD	PVC Box for 5 Modules (surface type)	EACH	10		
46	MPWD	PVC Box for 6 Modules (surface type)	EACH	10		
47	MPWD	Modular Switch 16Amps On-Off	EACH	20		
	Non SOR ITEM (B)					
48	Non SoR	Supply of 23W LED Lamp, Surface Mount. (Cat. No. LHLDDBA212R023 Base Cap - B22 Havells & equivalent)	EACH	132		
49	Non SoR	Supply of 10 W LED Lamp, Surface Mount. (Cat. No. LHLDDBA212R023 Base Cap - B22 Havells & equivalent)	EACH	315		

50	Non SoR	Supplying of 1.5 Ton split Airconditioners(Excluding 4 KVA stabilizer) suitable or operation on AC supply single phase 50 Hz 230V with heremetically sealed conformer with air cooled condenser motor capacitor start run capacitors relay and over load protector internal unit with one indoor and one outdoor unit the condenser unit will be placed outside the room on the terrace to avoid noise (Make :- Carrier/ Volta/LG/Samsung/Hitachi & equivalent)	EACH	1		
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CCTV

S.N o.	Reference	DESCRIPTION	UNIT	QTY	RATE (Rs.)	AMOUNT (Rs.)
A.		CCTV (ANALOG VIDEO SURVEILLANCE) SYSTEM				
1	NS	Supply, installation, testing and commissioning of 2.4 Mega Pixel (HD Quality), Bullet Camera, IR Impulse/Hikvision/Tyco/Pelco/Honeywell/ CP Plus	No.	20		
2	NS	Supply, installation, testing and commissioning of 2.4 Mega Pixel (HD Quality), Dome Camera, IR Impulse/Hikvision/Tyco/Pelco/Honeywell/CP Plus	No.	65		
3	NS	Supply, installation, testing and commissioning of 32 channel DVR. with Hard Disck, for 30 days recording Impulse/Hikvision/Tyco/Pelco/Honeywell/CP Plus	No.	3		
4	NS	Supply, installation, testing and commissioning two video outputs & 32" totally flat colour LCD monitor Panasonic/LG/Samsung	No.	2		

5	NS	Supply installation testing and commissioning of Cat 3+1 CCTV Copper Cable Polycab/D-Link/Kalinga/Havells/Legrand	RM	1500		
6	NS	Supply installation commissioning and testing of 1 TB Hard Disck, for 30 days recording	No.	6		
7	NS	Supply installation testing and commissioning of 10 Channel power supply Reputed Make	No.	8		
8	NS	Supply installation testing and commissioning of BNC Connectors/Power Connectors etc. Consumable itesms Reputed Make	Lot	85		
	MPWD 2019					
9	H:02:00	Supplying and fixing of the following size of FRLS PVC conduit along with the accessories in surface/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recess, conduit as required				
	H:02:02	25mm dia FRLS PVC conduit pipe	RM	2000		

FIRE FIGHTING

A. SITC OF ADDRESSABLE FIRE ALARM SYSTEM						
S.No	Referenc e	DESCRIPTION	UNI T	QT Y	RATE (Rs.)	AMOUNT (Rs.)

1	NSR	Supply & Installation /testing / commissioning Analogue Addressable Intelligent Fire alarm control panel, 8 Loop, provision to make with a minimum capacity of 250Nos per loop, with battery back up for 6 Hrs during normal operation and 15 minutes alarm operation, with minimum 160 Character LCD display, necessary interface card to connect a repeater panel and all hardware & software as per specification.	No	1		
3	NSR	Supply & installation/testing / commissioning Analog Addressable Smoke Detector(below) with programmable for timed automatic sensitivity selection with Standard base and other accessories as required.	No	300		
4	NSR	Supply & installation/testing / commissioning Analog Addressable Mutli Sensor Detector (Above) with programmable for timed automatic sensitivity selection with Standard base and other accessories as required.	No	200		
5	NSR	Supply & installation/testing / commissioning Supply Installation of heat detector with base, Junction box and other accessories as required,	No	200		
6	NSR	SITC of Response indicator	No	220		
7	NSR	Supply & installation/testing / commissioning Analogue Addressable Fault isolator module capable of monitoring shorted loop circuit and automatically restore communications when shorted	No	50		

		conditions are corrected. (FIM's are used for every 20 detectors/devices)				
8	NSR	Supply & installation/testing / commissioning Analogue Addressable Monitor module operating at 24V DC, 2A, rated at 230V, provided with DPDT contact.	No	5		
10	NSR	Supply & installation/testing / commissioning Addressable Electronic Hooter cum Strobe ceiling mounted. The hooters shall be made of ABS plastic, and have a DB level of 65dbA and a multi tone facility. Addressable Control Module shall be fitted in a junction box.	No	20		
11	NSR	Supply & installation/testing / commissioning Addressable Manual call point having an integrally mounted addressable module that monitors and reports contact status. (PULL TYPE)	No	6		
12	NSR	Supply and Laying of 2C X 1.5Sq.mm FRLS CU. Ar Cable	Rmt	1200		
B.FIRE EXTINGUISHER						

1	NSR	<p>Supply & installation of 4.5Kg, CO2 Type Fire Extinguisher, Trolley Mounted, Easy Weight Management, Used Unused Mechanism, Squeeze Grip, Gross Weight 19.1 Kg, Empty Weight 14.6 Kg, Can Height 860MM, Diameter 140MM, Discharge time minimum 13 Secs, Controllable discharge mechanism, Range minimum 2 Meters, Applicable on Class B,C & electrically started Fire, B Rating 13B, Can construction : Hot Spinning / Forging, Valve Construction : Forging & Machining, Internal Coating of Can : Not Applicable, External Coating of Can : Spray Painting, Sheet metal thickness : 4.5MM, ISI & CE Approved, 2 Year Warranty Including transportation, all taxes and all labour charges etc complete.</p> <p>Makes : Safex / Kenex / Bharat / Reliance</p>	Nos	62		
2	NSR	<p>Supply and fixing of ABC Powder MAP 4 Kg Fire extinguisher Mono ammonium phosphate power 90, stored pressure type, IS 15683 : 2006, pressure gauge gross wt. 6.9 kg, empty wt.2.9 kg, can Ht.440mm, Diameter 140mm, Discharge time less than 13 sec, controllable discharge mechanism, range min. 4 mts applicable on classes A,B, C & electrically started fires, A-rating 3A, B-rating 34B, can construction: Deep drawn Co2 mig welding, wall</p>	Nos	62		

		<p>construction: Forging & Machining, internal coating of can: Epoxy power coating, External coating of Can:Epoxy polyster powder coating, sheet metal thickness:1.60mm, Helium leakage detection tested, ISI & CE approved with 5 years warranty (Cease Fire / Minimax make) Including transportation,all taxes and all labour charges etc complete. Makes : Safex / Kenex / Bharat / Reliance</p>				
3	NSR	<p>Supply and installation of 4Nos of 9 Ltrs capacity round bottom bucket with sand, duly painted with enamel white inside & red outside and letter FIRE with black colour.</p>	Nos	31		
4	NSR	<p>Supply and installation of Fire bucket stand fabricated by M.S. angles to install for two numbers of buckets as per local fire officers standards.</p>	Nos	31		

Price Schedule

Lot 2: Repair and Renovation of District Hospital, Champhai

Lot	Description	Amount in INR (in figures)	Amount in INR (words)
Lot 2	Repair and Renovation of Champhai, District Hospital		

Works requirements for DH Champhai SCOPE OF WORK

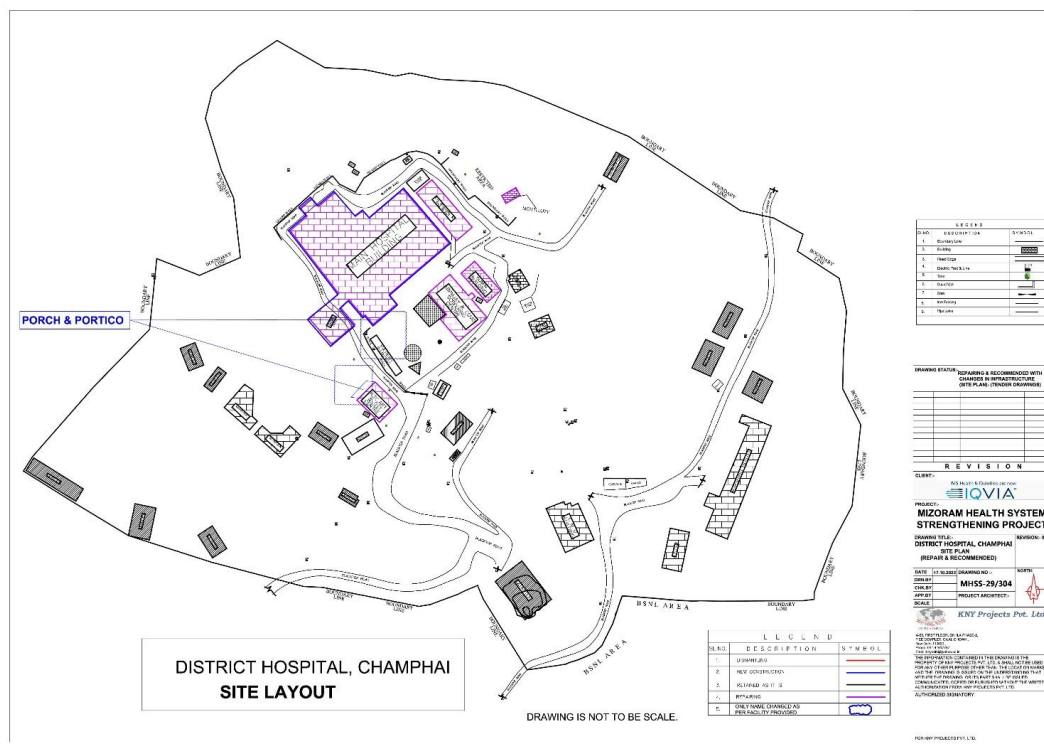
District hospital at Champhai is located in the heart of champhai city and is spread over 16.95 acres of land area.

The Champhai District hospital campus consists of 38 buildings and their area statement is as under-

S.No	Block name	Ground Effeted Area (Sq.M)	Remarks
1	Main Building	2555.35	Building proposed to be repaired and renovated
2	Eye building	261.31	Building proposed to be repaired and renovated
3	Quarter-1 /Postmortem /Mortuary	29.77	Building proposed to be repaired and renovated
4	Admin Building	146.44	
5	ABPMJAY & Covid Center	383.94	Building proposed to be repaired and renovated
18	ART Centre	167	Building proposed to be repaired and renovated
6	Incinerator	79.41	
7	Truant Laboratory	58.03	
8	pump house	74.07	
9	water tank	30.24	
10	DG Shed	18.774	
11	waiting shed-1	4.84	
12	waiting shed-2	5.61	
13	waiting shed-3	9.1	
14	Pharmacy u/c	38.52	
15	waiting shed-4	4.32	
16	Quarter-1	104.46	
17	Quarter-2	10.85	
19	Shop	153.77	

20	Quarter-3	86.8	
21	Quarter-4	143.35	
22	Quarter-5	159.055	
23	Quarter-6	50.13	
24	Quarter-7	79.08	
25	Quarter-8	175.56	
26	Quarter-9	143.78	
27	Quarter-10	93.98	
28	Quarter-11	40.34	
29	Quarter-12	334.53	
30	CMO Building	290.58	
31	Building Beside CMO Building-1	40.84	
32	Building Beside CMO Building-2	99.93	
33	Garage	72.7	
34	Ayush	162.47	
35	Nursing Hostel	595.55	
36	Quarter-13	112.27	
37	Quarter-14	132.4	
38	Quarter-15	114.03	
	Total	7063.179	

Layout.



Presently the Hospital has following functional departments:

- Common OT.
- Labour Room.
- Colonoscopy.
- Ultrasound.
- Eclampsia.
- ICU.
- Dialysis.
- Eye ENT.
- All Wards (ENT ward, Male surgical ward, Pediatric ward, Female medical ward, Male medical ward, Common nursing station, SNCU).
- OPD (General OPD, Pediatric OPD Gynae OPD, Surgery OPD, General OPD Medicine OPD Dental OPD).
- Laboratory.
- Blood bank.
- X-ray.
- ECG.
- Endoscopy.
- Doctors lounge room.
- Casualty.

The following table presents the summary of repairs and renovation works to be undertaken in the seven existing buildings:


Building	Build up area (in sqm)	Floor	Staircase	Department
Main Building	4069.56	3	2	Maternity ward, septic ward, main OT, Eye OT, Labour room, ICU, Dialysis, ENT & Eye ward, private cabins, staff sick room, O ₂ Storage room, Isolation ward, paediatric ward, Female ward, male ward, SNCU, Nursing superintendent room, all OPD's Ultrasound, dental OT, X-Ray, laboratory, Blood bank, casualty, PSA plant.
Eye	378.0	3	1	Mental Health clinic, Physiotherapy, mental




Building				counselling, hospital store, Solar battery room, PSA Plant.
DMS Building	240.0	2	1	DMS Office staff room, NPCCD Clinic, suicide prevention clinic.
ICTC,OST & ART Centre	128.0	2	1	ICTC,OST & ART Centre
Mortuary	36.54	1	Nil	Mortuary
ABPMJAY Building	227.7	1	Nil	ABPMJAY Office, counselling room, covid sample collection room, junk storage room-1,2 and 3

The following buildings are to be newly constructed:

1. Boundary wall.
2. Parking

Critical locations Photos:

1	NPPCD Clinic Toilet	Sagging of room beam observed	
2	NPPCD Clinic Waiting Area	Settlement of column and partition wall observed	

3	NPPCD Clinic Doctor's Chamber	Sagging and improper design of roof beam observed	
4	DMS Office	Settlement crack of floor beam	
2	OPD Corridor	Floor slab crack found due to expansion joint	

The works to be undertaken functional of building. Contractor coordinate to hospital superintendent and prepare a plan on the sequence of work to be done based on the hospital superintendent recommendations. The work to start only after shifting of equipment and patients from room and to be signed off by concerned authority. That the area is ready for repair and renovation. During the construction activity to avoid safety reasons. The area where repair and renovations to be undertaken should sealed of completely caution tape and green cloth in the work premises and sign boards are to be provide mentioning the area of the work to caution the people to avoid those areas.

Proposed changes and repairs in the buildings under the Champhai district hospital:

Department	Proposed Changes	Drawing No.
Hospital Exterior	<ul style="list-style-type: none"> • Porch and portico need to be constructed outside the department • Effluent treatment plant needs to be setup in the backyard of the main hospital building with their capacity and connections to the departments • One sewage treatment plant can be setup 	Drawing no.29/303.

Department	Proposed Changes	Drawing No.
<p style="text-align: center;">Emergency (Causality)</p>	<p>in the backyard of the main hospital building near to the soak pits</p> <ul style="list-style-type: none"> • Repair and renovation considered wherever required. <ul style="list-style-type: none"> ○ Seepage. ○ Crack repair and Plastering ○ Painting • Minor OT can be proposed in existing Dressing cum Injection Room. • Dressing cum Injection Room can be proposed in existing changing room. • One Stop Centre can be proposed in existing PP unit. • Existing storeroom can be converted into store cum file room. • Existing PP unit can be shifted to basement 1 near to labour room structure. • Existing file room can be converted into changing room. • Some of the required department in emergency department can be provided by making aluminium partition in following way: <ul style="list-style-type: none"> • Dedicated triage and examination can be proposed in existing emergency procedure room. • Setting up of separate enquire cum registration counter by providing window from outside. • Provision of grab bars and handrails to make the existing the toilet as a disabled friendly. 	<p style="text-align: center;">Drawing no. 29/207-209, 29/302</p>
<p style="text-align: center;">OT</p>	<ul style="list-style-type: none"> • Repair considered wherever required. <ul style="list-style-type: none"> ○ Seepage. ○ Crack repair and Plastering ○ Painting • There should be a provision of an attached toilet in recovery cum post-operative room. • Doctor duty room needs to be available in the OT complex. 	<p style="text-align: center;">Drawing no.29/201-203.</p>

Department	Proposed Changes	Drawing No.
	<ul style="list-style-type: none"> • Western style toilet will be given in common toilet along with disabled friendly features 	
OPD	<ul style="list-style-type: none"> • Repair and renovation considered wherever required. <ul style="list-style-type: none"> ○ Seepage. ○ Crack repair and Plastering ○ Painting • Provision of water cooler in the OPD premises at the end of the OPD corridor. • Breast feeding corner can be provided at the end of the OPD corridor by making aluminium structure. • Dressing cum injection room can be provided in one of the Medicine OPD. Currently two Medicine OPD rooms are there. • All the patient toilets need to be converted into disabled friendly toilets. • Demarcated trolley and wheelchair bay needs to be defined outside the entrance of OPD area. 	Drawing no.29/207-209,18/302
Labour room	<ul style="list-style-type: none"> • Repair considered wherever required. <ul style="list-style-type: none"> ○ Seepage. ○ Crack repair and Plastering ○ Painting • Placement of one additional labour table is required as per the NQAS standard. • Proper curtain partition between labour table till the ceiling height. • 6 feet tiles will be required in LR walls. • PP unit available in emergency department needs to be adjusted in the existing labour room structure. • Labour room toilets needs to be redesigned to make it disabled friendly toilets. 	Drawing no.29/201-203.

Department	Proposed Changes	Drawing No.
Wards	<ul style="list-style-type: none"> • Repair and renovation considered wherever required. <ul style="list-style-type: none"> ○ Seepage. ○ Crack repair and Plastering ○ Flooring ○ Painting • Availability of examination corner in each ward by providing aluminium partition. • Doctor duty room needs to be available in the wards • All the toilets need to be redesigned to make it disabled friendly toilets. 	Drawing no.29/201-206, 29/301
Laboratory and Radiology	<ul style="list-style-type: none"> • Elbow operated taps needs to be installed in the laboratory hand washing area. • Lead doors to be installed in X Ray unit. 	Drawing no.29/207-209.
Postmortem	<ul style="list-style-type: none"> • Repair considered wherever required <ul style="list-style-type: none"> ○ Seepage ○ Crack repair and Plastering ○ Flooring ○ Painting 	Drawing no.29/235-238.
ABPMJAY	<ul style="list-style-type: none"> • Repair considered wherever required <ul style="list-style-type: none"> ○ Crack repair and Plastering ○ Flooring ○ Painting 	Drawing no.29/232-234.
Repair and Renovation	Repairing, renovation, waterproofing and painting is to be proposed wherever required. To see in detail please refer to the report	Drawing no.29/201-238.
Electrical	<ul style="list-style-type: none"> • New electrical inventories is proposed in the BoQ that needs to be replaced with the damaged one • CCTV Camera is to be proposed for the monitoring 	CCTV DRAWING No :29/501-511

**Civil Works
(AS PER MPWD 2019)**

S.NO	MPWD 2019	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
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1	2.07	Earthwork in excavation in foundation trenches or drains etc. (not exceeding 1.5m in width or 10sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5m including getting out excavated soil and disposal of surplus excavated soil as directed within a lead of 50 metres.				
	(b)	Hard Soil (pick work)	<i>cum</i>	210.64		
2	2.17	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.				
			<i>Cum</i>	198.19		
3	4.02	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work upto plinth level:				
	(a)	1:2:4 (1 cement :2 course sand :4 stone aggregate 20mm nominal size)				
		Details of Cost for 1.00 cum	<i>cum</i>	110.70		
4	5.01	Providing and laying in position reinforced cement concrete excluding cost of centering and shuttering , finishing and reinforcement in -				
		All work upto plinth level :				
	(a)	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)	<i>Cum</i>	54.82		
5	5.02	Reinforced cement concrete work in walls including attached pillasters, columns, pillers, posts, piers, abutments, return walls, retaining walls, struts, buttresses, string or				

		lacing courses, fillets etc. upto floor five level excluding cost of centering shuttering etc complete.				
	(a)	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)	<i>Cum</i>	2.33		
6	5.03	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement complete.				
	(a)	1:1.5:3 (1 Cement:1.5 Coarse Sand:3 graded Stone aggregate 20 mm nominal size.)	<i>cum</i>	2.84		
7	5.10	Centering and shuttering including strutting, propping etc. and removal of form for all heights :				
	(a)	Foundations, footings, bases of columns etc. for mass concrete.	<i>sqm</i>	136.80		
	(c)	Columns, pillars, piers, abutments, posts and struts.	<i>Sqm</i>	76.25		
	(d)	Lintels, beams, plinth beams, girders, bressumers and cantilevers, etc.	<i>sqm</i>	71.55		
	(e)	Suspended floors, roofs, landings, shelves and their support, balconies and chajjaj,etc.	<i>sqm</i>	5.40		
8	5.18	Steel reinforcement for RCC work including straightening, cutting, bending, placing in position and binding all complete.				

	(b)	Thermo-Mechanically Treated bars of grade Fe-500 or more.	<i>kg</i>	6841.63		
9	6.01	First class brickwork in foundation and plinth in :				
	(c)	in cement mortar 1:6 (1 cement : 6 coarse sand)	<i>cum</i>	10.80		
10	6.06	Half brick masonry with first class brick in superstructure above plinth level upto floor V level.				
	b)	in cement mortar 1 : 4 (1 cement : 4 coarse sand)	<i>sqm</i>	169.59		
11	9.37	Providing 1st class local wood work dressed in frames of false ceiling, partitions, etc. sawn and fixed in position.	<i>cum</i>	0.70		
12	9.55	Providing and fixing factory made PVC door frame made of PVC extruded section (Chaukhat) having overall dimension of 48x40 mm (tolerance + 1 mm) with wall thickness 2.0 mm + 0.2 mm, corners of the door frame to be mitred and joined by means of plastic/M.S. galvanized brackets and stainless steel screws. The hinge side vertical of the frames reinforced by galvanised M.S. tube of size 19x19 mm and 1 mm + 0.1 mm wall thickness and 3 Nos. stainless steel hinges fixed to the frame complete as per manufacturers specification and direction of Engineer-in-charge. (Sintex, Plasopan or equivalent) :	<i>Rmt</i>	11.80		

13	9.56	<p>Factory made PVC door shutters made of styles and rails of a uPVC hollow section of size 59x24 mm and wall thickness 2 mm (± 0.2 mm) with inbuilt edging on both sides. The styles and rails mitred and joint at the corners by means of M.S. galvanised/ plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 20x20 mm and 1 mm (± 0.1 mm) wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x24 mm and 2 mm (± 0.2 mm) wall thickness, fixed to the shutter styles by means of plastic/galvanised M.S. 'U' cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm (± 0.1 mm) wall thickness. The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in-charge. (For W.C. and bathroom door shutter) (Sintex, Plasopan or equivalent).</p>				
	(b)	30 mm thick shutter	<i>sqm</i>	5.04		
14	10.07	<p>Structural steel work rivetted, bolted welded in built up sections, trusses and framed works, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete. (In Tees, R.S. Joists, Angles, Flats and Channels.)</p>	<i>kg</i>	1638.00		

15	10.20	<p>Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of 80cm high in staircase, etc consisting of 75mm for rail and post, 63mm for longitudinal intermediate rail and 25mm of vertical section, spacing 125mm interval and as per approval of Engineer-in-charge.</p>	<i>sqm</i>	36.00		
16	11.03	<p>Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular and other sections of approved make conforming to IS: 733 and IS : 1285, anodised transparent or dyed to required shade according to IS : 1868. (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips, or with expansion hold fastners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and paneling to be paid for separately). For fixed portion.</p>				

	(b)	Anodised	<i>sqm</i>	39.98		
17	11.04	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required. (Glazing to be paid for separately)				
	(b)	Anodised	<i>sqm</i>	1.58		
18	11.05	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge .				
	(a)	With glass panes of 4.0 mm thickness.	<i>sqm</i>	1.58		
19	11.06	Providing and fixing 12mm thick prelaminated three layer medium density (exterior grade) particle board Grade I, Type II conforming to IS : 12823 bonded with phenol formaldehyde synthetic resin, of approved brand and manufacture in paneling fixed in aluminium doors, windows shutters and partition frames with C.P. brass/ stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.				
	(a)	Pre-laminated particle board with decorative lamination on one side and balancing lamination on other side.	<i>sqm</i>	38.40		
20	14.50	Providing and fixing alluminium sliding door bolts (aldrops) anodised transparent or dyed to required colour or shade with nuts and screws etc. complete.				
	(b)	250 x 16 mm	<i>no</i>	14.00		

21	14.51	Providing and fixing Aluminium Tower Bolts (Socket Bolts) anodised transparent or dyed to required colour or shade with necessary screws etc. complete.				
	(c)	150 mm	<i>No</i>	28.00		
22	14.52	Providing and fixing alluminium handles anodised transparent or dyed to required colour or shade with necessary screws, etc. complete				
	(a)	125 mm	<i>No</i>	28.00		
23	12.09	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).				
	(c)	Dark shade using ordinary cement	<i>Sqm</i>	529.27		
24	12.11	Providing and Fixing ceramic glazed floor tiles of size 300x300mm or more (thickness to be specified by the manufacturer) of 1st quality conforming to IS: 15622 of approved make in all colours,shades, except white,ivory,greys, fume red brown, laid on 20mm thick cement mortar 1 : 4 (1cement : 4 course sand) including pointing the joints with white cement and matching pigments etc. complete. as per designed colour.				
	(b)	Matt Finish	<i>Sqm</i>	23.15		

25	12.12	Providing & laying vitrified floor tiles in different sizes (thickness to be specified by the manufacture) with water absorption less than 0.08% and conforming to IS:15622,of approved make, in all colours and shades, laid on bed of 20mm thick cement mortar 1 : 4 (1cement:4course sand), including the joints with white cement and matching pigments etc.complete.as per design collours.				
	(b)	Nano tech (Single charge)	<i>Sqm</i>	115.93		
26	12.17	Grouting the jounts of flooring tiles having joints of 3 mm width using epoxy grout mix of 0.70 kg of organic coated filler of desired shade(0.10kg of hardener and 0.20 kg of resin per kg) grouting and finishing complete as per direction of Engineer-in-charge.	<i>sqm</i>	250.26		
27	12.19	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to e specified by the manufacaturer),of approved make, in all colours, shades wxcept burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12mm thick bed of cemunt mortar 1:3 (1cemeny :3 coarse sand) and jointing with cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	<i>sqm</i>	19.92		

28	28/16.01	Providing corrugated G.S. sheet roofing fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead and including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (upto a pitch of 60 degrees) excluding the cost of purlins, rafters and trusses. .				
	(a)	0.80 mm thick with zinc coating not less than 275gm/m ²	<i>sqm</i>	70.00		
29	16.07	Providing and fixing 15 cm wide 45 cm over all semi circular plain G.S. sheet gutter with iron brackets 40x3mm size, bolts, nuts and washers etc. including making necessary connections with rain water pipes complete.				
	(a)	0.80 mm thick with zinc coating not less than 275gm/m ²	<i>rm</i>	23.50		
30	17.04	Providing and fixing vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :				
	(i)	White	<i>no</i>	4.00		
31	17.08	Providing and fixing White vitreous china (Matrix Set -1) WB 65 x 35 with one pair mounting brackets, EWC & Cistern complete with fittings & seat cover, one no hinged rail 76 cm and five nos of grab rails 60 cm, with all fittings and fixtures complete, including cutting and	<i>no</i>	2.00		

		making good the walls and floors wherever required :				
32	17.10	Providing and fixing solid plastic Seat Cover and lid for pedestal type W.C. pan with C.P. brass hinges, rubber buffers, etc. complete.				
	(i)	White	<i>no</i>	8.00		
33	17.15	Providing and fixing Health faucet with flexible tube upto 1 metre long and holder of quality and make as approved by Engineer - in - charge..	<i>no</i>	8.00		
34	17.16	Providing and fixing White vitreous china wash basin Standard of Parryware/ Hindware/ Cera and equivalent make with R.S. or C.I. brackets, 15mm C.P. brass pillar taps, C.P. brass chain with rubber plugs, 32mm C.P. brass waste of standard pattern, 32mm C.P. brass traps and union complete including painting of fittings and brackets, cutting and making good the walls wherever required.				
	(a)	Vitreous China Wash basin size 630x450 mm with single 15 mm C.P. brass pillar taps				
	(i)	White	<i>no</i>	7.00		
35	17.29	Providing and fixing anodised aluminium towel rail with two anodised aluminium brackets to wooden cleats with C.P brass screws.				
	(a)	750x20mm size.	<i>no</i>	10.00		
36	17.32	Providing and fixing soap dish fixed with C.P. brass screws.	<i>no</i>	10.00		

37	17.33	Providing and fixing on wall face SWRPVC soil, waste and vent pipes including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia.	<i>rm</i>	22.50		
38	17.34	Providing and fixing SWRPVC plain bend of required degree (87.50°) including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia.	<i>no</i>	12.00		
39	17.35	Providing and fixing SWRPVC plain bend of required degree (45°) including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia.	<i>no</i>	7.00		
40	17.37	Providing and fixing single equal SWRPVC plain junction of required degree (T-junction) .				
	(a)	110x110x110mm.	<i>no</i>	5.00		
41	17.41	Providing and fixing SWRPVC socket including jointing with rubber lubricant/cement solvent.				
	(a)	110mm dia. Socket	<i>no</i>	19.00		
42	18.14	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :				
	(a)	15 mm nominal bore	<i>no</i>	130.00		
	(b)	20mm nominal bore	<i>no</i>	130.00		

43	18.29	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
	(a)	15mm dia nominal bore.	<i>rm</i>	210.00		
	(b)	20mm dia nominal bore.	<i>rm</i>	175.00		
44	18.32	Making connection of CPVC pipes distribution branch by providing and fixing equal Tee with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia nominal bore.	<i>no</i>	75.00		
	(b)	20mm dia nominal bore.	<i>no</i>	95.00		
45	18.36	Making connection of Astral CPVC pipes distribution branch by providing and fixing Elbow 90o with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	<i>no</i>	75.00		
	(b)	20mm dia.	<i>no</i>	95.00		
46	18.37	Making connection of Astral CPVC pipes distribution branch by providing and fixing Elbow 45o with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	<i>no</i>	75.00		

	(b)	20mm dia.	<i>no</i>	95.00		
47	18.43	Making connection of Astral CPVC pipes distribution branch by providing and fixing Female Adaptor (Brass) with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	<i>no</i>	60.00		
48	18.44	Making connection of Astral CPVC pipes distribution branch by providing and fixing Socket/Coupling with jointing, testing complete including cutting and making good etc.				
	(b)	20mm dia.	<i>no</i>	75.00		
49	18.45	Making connection of Astral CPVC pipes distribution branch by providing and fixing Reducer Coupling with jointing, testing complete including cutting and making good etc.				
	(b)	20 x 15mm	<i>no</i>	70.00		
50	19.02	Applying double coated cement slurry with water proofing chemical (SUPER latex chemical) in proportion 1 : 4 : 7 (1 latex : 4 water : 7 cement) including cleaning the treated surfaces with brushes etc. @ 0.158kg/sqm .	<i>sqm</i>	645.26		
51	19.04	Providing and mixing water proofing chemical (PIDIPROOF POWDER chemical) in plain and reinforced cement concrete work 1 : 2 : 4 , @1.0% by weight of cement.	<i>cum</i>	48.39		
52	19.19	Extra for providing and mixing water proofing chemical (latex or equivalent chemical) @ 2kg per bag of cement in -				
	(d)	15mm cement plaster 1 : 4 (l	<i>sqm</i>	328.46		

		<i>cement : 4 sand).</i>				
53	20.08	12mm cement plaster 1 : 4 (1 cement : 4 fine sand).	<i>sqm</i>	691.25		
54	20.12	15mm cement plaster 1 : 4 (1 cement : 4 fine sand).	<i>sqm</i>	328.46		
55	20.25	6mm cement plaster to ceiling 1 : 3 (1 cement : 3 fine sand)	<i>sqm</i>	47.91		
56	20.66	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade: New work (one or more coats)	<i>sqm</i>	47.91		
57	20.73	Wall painting with interior emulsion paint of approved brand and manufacture on new work (two or more coats) to give an even shade.				
	(b)	Premium interior emulsion like Velvet touch Luxol silk etc.	<i>sqm</i>	680.69		
58	20.75	Finishing walls with exterior emulsion of required shade on new work (three or more coats) to give an even shade.				
	(b)	Premium exterior emulsion like weather shield, weathercote etc.	<i>sqm</i>	328.46		
59	23.01	Removing white or colour wash by scrapping and sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	<i>sqm</i>	5450.86		
60	23.02	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	<i>sqm</i>	1679.41		

61	23.08	Renewing glass panes and refixing existing wooden fillets:				
	(a)	Glass panes of thickness 4mm	<i>sqm</i>	6.08		
62	23.43	Distempering with dry distemper of approved brand and manufacture (one or more coats) and of required shade on old work to give an even shade.	<i>sqm</i>	5450.86		
63	23.44	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade : Old work (one or more coats)	<i>sqm</i>	1755.26		
64	23.52	Wall painting with interior emulsion paint of approved brand and manufacture on old work (one or more coats) to give an even shade.				
	(b)	Premium interior emulsion like Velvet touch luxol silk etc.	<i>sqm</i>	4067.24		
65	23.53	Finishing walls with regular exterior emulsion of required shade on old work (three or more coats) to give an even shade.				
	(b)	Premium exterior emulsion like weathercote, weather shield etc.	<i>sqm</i>	1383.62		
66	23.54	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade : One or more coats on old work.				
	(a)	General quality	<i>Sqm</i>	189.00		
67	24.01	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.				
	(a)	Nominal concrete 1:3:6 Or richer mix .	<i>cum</i>	45.21		

68	24.02	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge.	<i>cum</i>	2.52		
69	24.06	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead:				
	(a)	In cement mortar	<i>cum</i>	3.53		
70	24.22	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
	(a)	For thickness of tiles 10 mm to 25 mm	<i>sqm</i>	137.87		
71	24.43	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.				
			<i>sqm</i>	743.62		
72	24.45	Dismantling W.C. Pan of all sizes including disposal of dismantled materials all complete as per directions of Engineer-in-Charge.	<i>sqm</i>	1.89		
73	24.46	Hacking of CC flooring including cleaning for surface etc. complete as per direction of the Engineer-in-Charge.	<i>sqm</i>	395.00		
74	N.S.R	Semi-Hermetic sealed Lead line door with lead view glass 1200X2100mm (Double Leaf) excluding delivery charges	<i>no</i>	1.00		

75	N.S.R	Note :- Transport charges (carriage) for dumping the building waste at near by dumping yard/zone. Disposal of approx 8000 cft (building waste generated) around 5 Km from DH Siaha in 30 trip i.e. 200 cft /Trip	No	40.00		
76	N.S.R	Providing & Inserting 12mm dia galvanised steel ionjection nipple in honeycomb area and along the crackline including drilling of holes required diameter (20mm to 30mm) upto a depth of 30mm to 80mm at required spacing and making the holes and cracks dust free by blowing compressed air , sealing the distance between injection nipple with the adhesive chemical of approved make and allow it to cure completely.	Nos.	451.68		
77	N.S.R	Injection approved grout (SIKADUR- 55LP)or equivalent in proportion recommended by the manufacturer into cracks/hony-comb area of concrete/masonry by suitable gun/pump at requird pressure including cutting of nippales				
		NOTE: This quantity may vary and depend upon the site concrete quality and seepages/cracks found during the execution	Kg	120.45		

78	N.S.R	Providing and fixing factory made solid Wood Polymer Composite (WPC) single extruded Door Frame section of size with encapsulation of 8MM rigid layer on all the six surfaces. The door frame will have a rebat of 32MM. Door Frame section of 63.5x100 MM .The two Vertical members are to be joined together with the horizontal member using 8x75 MM long MS Star full thread screws to be used with reverse forward speed control hand drilling machine. The ready/assembled door frame is fixed to the wall using hold fast or bolt fasteners. A minimum of 4 No.s of screws to be provided for each vertical member & minimum 2no.s for horizontal member	<i>Rmt</i>	51.00		
79	N.S.R	Providing and fixing 28 -30 MM thick solid Wood Polymer Composite(WPC) single extruded door shutter with 3MM top and bottom rigid layer with an overall density of 750kg/Cum. It will be fixed to the frame using 3 inch /4 inch hinges. A minimum of 4 hinges will be required for fixing the door with the frame	<i>sqm</i>	18.90		
80	N.S.R	Providing Diluting and injecting chemical emulsion for existing windows and doors post construction Anti-Termite Treatment Chlorpyriphos 20% EC. (Note: Spray Treatment: Spray will be applied on all windows and doors. Chemical will be injected inside the cracks of windows and doors at the wall junction.)				
	(a)	Doors / Windows	<i>NO</i>	30.00		
	(b)	Providing and supply Service cost for Diluting and injecting chemical emulsion for Effected Floor areas	<i>Sqm</i>	300.00		

81	N.S.R	Diluting and injecting chemical emulsion for Pre-construction Anti-Termite Treatment with Chlorpyriphos/Lindane emulsifiable chemical 20% with 1% concentration.	Sqm	58.95		
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ELECTRICAL
(AS PER MPWD 2016)

S.N O	MPWD 2016	DESCRIPTION	UNIT	QTY	RATE (Rs.)	AMOUNT (Rs.)
1	C:02:06	Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per IS:694 (1990) and Flame retardant low smoke & Halogen (FR-LSH) 1100 voltage graded copper flexible wire stranded copper running inside PVC Casing & capping (Grade-II) of all available sizes diameter fixed, surface on the wall/ceiling/floor as per convenience including junction box having required numbers of ways from Main to Sub-Main/DB/Sub-Main/DB to SDB/SDB/Switch boards/SDB to switch boards as required				
	C:02:06(A)	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	M	85		
2	C:04:01	Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per IS:694 (1990) and Flame retardant (FR)1100 voltage graded copper flexible wire stranded copper running inside PVC casing & capping (Gr-II) 20mm dia fixed, surface on the wall/ceiling/floor as per convenience including junction box having required numbers of ways from control switch to the light point etc as required:				
	C:04:01(A)	Light Point. Very Short Point (ordinary)	Per Point	95		
	C:04:02(A)	Light plug Point Very Short Point	Per	22		

		(ordinary)	Point			
	C:04:03(A)	Power plug Point 15/16 A Very Short Point (ordinary)	Per Point	10		
3	E:01:00	Rewiring for light point/fan point/exhaust fan point/calling bell point with 1.5 Sqmm of PVC insulated standard copper conductor 1.5 sqmm as per IS:694 (1977) and Life shields Halogen Free Flame Retardant (HFFR) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as				
	E:01:01	VERY SHORT POINT	POINT	13 2		
4	H:04:00	Supplying and fixing of the following size of PVC conduit (medium Duty) along with the accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recess/surface, conduit as required:-				
	H:04:01	20mm dia ISI Marked PVC conduit pipe (Medium duty)	RM	30		
	H:04:02	25mm dia ISI Marked PVC conduit pipe (Medium duty)	RM	25		
5	H:06:00	Providing and fixing of the following sizes of PVC casing & capping single lock on surface with necessary accessories as required				
	H:06:03	25mm X12mm PVC casing & capping single locked	RM	25		
	H:06:03	30mm X15mm PVC casing & capping single locked	RM	30		
6	F:11:00	Supplying and drawing the following sizes of PVC insulated standard copper conductor 1.5 sqmm as per IS:694 (1977) and Flame Retardant Low smoke & Halogen (FRLS&H) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as required				

i.	F:11:03	3X1.5 sqmm	MET RE	65		
ii.	F:12:03	3X 2.5 sqmm	MET RE	55		
	F:13:03	3X 4 sqmm	MET RE	35		
	F:23:05	5X 6 sqmm	MET RE	1		
	F:25:05	5X 10sqmm	MET RE	1		
	F:26:05	5X 16 sqmm	MET RE	1		
7	I:02:00	Supplying and fixing of Modular switch board grade-II of the following sizes/modules on surface/recess including PVC/Steel boxes, modular plate and necessary switches, plug/socket, and fan regulators etc. with necessary painting if necessary				
i.	I:02:13	2 S	EAC H	15		
ii.	I:02:33	3 S	EAC H	20		
iii.	I:02:53	4 S	EAC H	18		
8	N:03:00	Supplying,fitting,&fixing of 4-Ways MCB DB single door in sheet steel,Phosphatised powderpainted MCB DBs with Bus Bar, Neutral link,earth bar and din rail conforms to IS:13032, IS:8623, BS:5486 240 Volts 50 Hz, on surface/recess including inter-connection,painting etc, as required.				
	O:03:05	4-ways MCB DB SP&N DD metallic door	Each	5		
	O:03:06	8-ways MCB DB SP&N DD metallic door	Each	7		
	O:03:07	12-ways MCB DB SP&N DD metallic door	Each	7		
	O:03:18	4-ways (4+12)MCB DB TP&N DD metallic door	Each	5		
	O:03:19	6-ways (4+18)MCB DB TP&N DD metallic door	Each	2		

	O:03:20	8-ways (8+24)MCB DB TP&N DD metallic door	Each	2		
9	O:02:00	Supplying, fitting, & fixing of different poles Plastic MCBs Enclosures fitted with din rail for MCBs for Cut out etc as required;-				
	O:02:04	Sheet steel powder paint MCB Enclosures 4 poles	Each	4		
	O:02:03	Sheet steel , powder paint MCB Enclosures 1/2 poles	Each	8		
8	N:01:00	Supplying and fixing of all types and rating MCBs, RCCBs, ELCBs etc, 240/415 Volts 50Hz AC supply in the existing MCB DB complete with connections, testing & commissioning etc in completed				
i.	N:04:01	25-100 Amps' SP, 16KA MCCB	EAC H	4		
i.	N:01:24	50/63 Amps' FP, MCB C- series	EAC H	2		
	N:01:26	40 Amps' DP, MCB Isolator	EAC H	16		
	N:01:35	40 Amps' FP, MCB Isolator	EAC H	3		
	N:01:01	5 to 32 Amps ,SP, MCB B- series	Each	25 2		
	N:01:36	63 Amps' FP, MCB Isolator	EAC H	7		
9	N:04:00	Supplying, and fixing of different rating 415 volts, Moulded Case Circuit breaker (MCCB) G-frame IP-1 conforms to IEC:947/IS:13947-II of different Breaking Capacity, Icu at 415 Volts different poles including testing & commissioning etc, as required				
	N:04:02	25-100 Amps' TP, 16KA MCCB	EAC H	2		
	N:04:36	160/150 Amps' TP, 35KA MCCB	EAC H	1		
10	J:02:00	Installation of all kind of Electrical appliances				

i	J:01:04	Supplying,fitting and fixing Batten Holder fancy including connection etc, as required	per point	35 1		
11	J:01:07	Fixing and erection of Wall bracket/Ceiling fittings of all sizes and shapes containing up to two GLS/PLS lamps per fitting, complete with all accessories including connection etc. as required.	Each	10 0		
12	J:02:02	Installation of Instantaneous Electric Water Heater up to 50 litres in the existing wall including fixing the Hook in the wall by standard sizes of sleeves Nuts and bolt or Standard Screw for the above Instantaneous Electric Water Heater, and making good the damage, connection, testing and commissioning etc, as required	Each	2		
13	J:02:03	Extra for fixing of 450mm Flexi connection pipe for Geyser /Electric Water Heater of all sizes as required	Each	2		
ii	J:02:05	Installation of Air Conditioner Split Type 1.5/2.0 in the existing wall including fixing the Hook in the wall by standard size of sleeve Nuts and bolts or Stnadard Screw for the above Air Conditioner Split type 1.5/2.0 TR, and making good the damage, connection, testing and commissioning etc, as required	EAC H	5		
iii.	J:01:36	Installation, testing & commissioning of ceiling fan and regulator, including wiring the downrod of standard length (upto 30cm) with 2X1.5 sqmm PVC insulated copper conductor single core cable etc, as required	EAC H	18		

iv	J:01:39	Installation of Exhaust fan up-to 450 mm Sweeps in the existing opening, including making holes to suit the size of the above Exhaust fan, and making good the damage, Connection, testing and commissioning etc, as required.	EAC H	20		
v	J:01:42	Extra for fixing of the gravity louvers/shutters complete with frame for Exhaust fan of all sizes as required	EAC H	20		
14	K:01:03	Supplying, and fixing of Bus Bar Chamber with 4- strips bus bar of length 300mm made of aluminium alloy or wrought aluminium suitable for 200 amps' capacity (where rating should not be more than one ampere per one Sqmm) complete with all accessories including connections, earthing the body etc, as required	Each	8		
15	E:02:00	Supplying and drawing the following sizes of PVC insulated standard copper conductor 1.5 sqmm as per IS:694 (1977) and Flame Retardant Low Smoke & Halogen (FRLS&H) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as required				
	E:02:01	VERY SHORT POINT	per point	95		
16	R:01:01	Providing & fixing of lightning conductor finial, made of 25mm dia' 300mm long, copper tube, having single prong (one finger system) at the top, with 85mm dia' 3mm thick copper base plate including holes etc. complete as required	EAC H	3		
17	R:01:18	Providing and fixing of standard Air-terminal lighting protection four spikes system 3 meter radius of protection (KLP AT-30/00)	EAC H	2		

18	R:01:62	Providing & fixing of G.I tape 20mmx3mm thick on parapet or surface of wall for lighting conductor as required (for horizontal run).	MET ER	18 0		
19	T:04:12	Laying of one number PVC insulated and PVC sheathed/XLPE Power cables of 1.1KV grade of size exceeding 25 Sqmm but not exceeding 120 Sqmm on surface	EAC H	20		
20	Q:01:01	Earthing with G.I Earth Pipe 4.5 Mtr long and 40mm dia' including accessories and providing masonry enclosure with cover plate having locking arrangement and water pipe,etc. (but without charcoal or coke and salt) complete as required	SET	2		
21	Q:01:03	Extra for using salt and charcoal for pipe earth electrode as required	EAC H	2		
22	R:01:68	Providing and laying of G.I tape 32mmx6mm thick from earth electrode directly in ground as required	MET ER	10 5		
23	Q:01:43	Supplying & Laying of 25mmx5mm G.I Strip in 40mm dia' G.I pipe from earth electrode etc. as required. (25mmx5mm G.I tape (1.0 Kg/M))	MET ER	10 4		
24	Q:01:05	Earthing with G.I Earth plate 600mmx600mmx6mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and water pipe,etc. (but without charcoal or coke and salt) complete as required	Each Set	10		
25	Q:01:09	Extra for using salt and charcoal for G.I or Copper Plate electrode as required	EAC H	10		

26	Q:01:02	Earthing with G.I Earth Pipe 3.5 Mtr long and 25mm dia' for copper wiring including accessories and providing masonry enclosure with cover plate having locking arrangement required and water pipe, etc. (but without charcoal or coke and salt) complete as	Each Set	2		
27	Q:01:03	Extra for using salt and charcoal for pipe earth electrode as required	EAC H	2		
28	Q:01:50	Providing and fixing of 6 SWG G.I Wire on surface or in recess for loop earthing along with the existing surface/recess conduit/sub-main wiring/cables etc.as required.	RM	25		
29	Q:01:45	Providing & Laying of earth connection from earth electrode with 4.00mm dia' Copper Wire in 15mm dia' G.I pipe from earth electrode as required. (8 SWG Copper Wire (4mm dia))	RM	30		
30	Q:01:51	Providing and fixing of 8 SWG Copper Wire on surface or in recess for loop earthing along with the existing surface/recess conduit/sub-main wiring/cables etc.as required	RM	40		
31	Q:01:47	Providing and fixing of 20mmx3mm copper strip on surface or in recess for connection etc. as required. (20mmx3mm Copper Tape (1.0 Kg/M	RM	25		
32	Q:01:48	Providing and fixing of 6 SWG G.I Wire on surface or in recess for loop earthing etc. as required	RM	20		

33	N:06:00	Supplying and fixing of different ratings three/four poles Automatic Transfer Switch (ATS)(conforms to IEC:60947-1 three/ four pole AC-31A 50Hz, 415V Automatic/Manual with inbuilttime delay with enclosure for Change over Switch in the Existing Panel Board/ Distribution Boardsto be incorporated with required AC Voltages including Testing,calibrating,& commissioning etc, as required;-				
	N:06:01	100 Amps Four Poles ATS	Each	1		
34	M:01:02	Supplying, and fixing on the wall/floor mounted metal board of welded construction, fabricated withminimum sizes of 35mmX35mmX6mm angle iron frame work, with 25mm X 6mm flat Iron as horizontaland vertical intermediate members of suitable angle/flat Iron for mounting of switch gears includingpainting etc , as required	SQM	4		
35	M:02:00:	Providing, and fixing of measuring instruments, selector switches, current transformer, Phaseindication light (for RYB) 440/650 Volts, including inter-connection of incoming SFU/ACB of thefollowing rating in standard copper cable/ alluminium/copper strips for the following rating of Bus bar,drilling holes on the board, earthing the body etc as required				
	M:02:06	200 A B/B (125/100A I/C M/S)	Each	1		
	M:02:07	100 A B/B (63A I/C M/S)	Each	1		
36	MPWD	Supply of Electric Storage Water Heater/Geyser 16 litres 2 KW (Havells Monza/AO Smith/Racold/Bajaj/Gromton)	EAC H	2		

37	MPWD	Supply of Ceiling fan 5 star rated Fusion 5* (Metallic beige-brown/pearl ivory-Gold) 1200mm sweeps (Havells/Usha/Polar/Gromton/Bajaj)	EAC H	18		
38	MPWD	Supply of Exhaust fan 300mm sweeps ISI marked (Usha/Havells/Polar/Gromton/Bajaj)	EAC H	20		
39	MPWD	4KVA Automatic Stabilizer with built-in high cut, Buzzer & Timer :Input:50VA-280V & Output:210V-240V (Venus/Indo/V-Guard/CARE)	EAC H	5		
40	MPWD	Supply of Ceiling Rose jumbo 3 Plate (<i>Anchor/Pressfit/Cona/Leader</i>)	Each	10 0		
41	MPWD	5/6 A switch	EAC H	12 4		
42	MPWD	Modular Switch 16Amps On-Off	EAC H	10		
43	MPWD	3 pin 5/6 A socket outlet	EAC H	40		
44	MPWD	Modular Socket 16/6Amp 3+3	EAC H	10		
45	MPWD	two module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	EAC H	26		
46	MPWD	modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	EAC H	25		
47	MPWD	Modular Plate for 2-Modules	EAC H	11		
48	MPWD	Modular Plate for 3-Modules	EAC	21		

			H			
49	MPWD	Modular Plate for 4-Modules	EAC H	14		
50	MPWD	Modular Plate for 6-Modules	EAC H	18		
51	MPWD	Modular Plate for 8-Modules	EAC H	13		
52	MPWD	PVC Box for 3 Modules (surface type)	EAC H	10		
53	MPWD	PVC Box for 4 Modules (surface type)	EAC H	20		
54	MPWD	PVC Box for 5 Modules (surface type)	EAC H	15		
55	MPWD	PVC Box for 6 Modules (surface type)	EAC H	10		
	NSR ITEM (B)					
56	NSR1	Supply of 23W LED Lamp, Surface Mount. (Cat. No. LHLDDBA212R023 Base Cap - B22 Havells & equivalent)	EAC H	45		
57	NSR2	Supply of 10 W LED Lamp, Surface Mount. (Cat. No. LHLDDBA212R023 Base Cap - B22 Havells & equivalent)	EAC H	30 6		
58	NSR3	Supplying of 1.5 Ton split Airconditioners(Excluding 4 KVA stabilizer) suitable or operation on AC supply single phase 50 Hz 230V with hermetically sealed conformer with air cooled condenser motor capacitor start run capacitors relay and over load protector internal unit with one indoor and one outdoor unit the condenser unit will be placed outside	EAC H	5		

		the room on the terrace to avoid noise (Make :- Carrier/ Volta/LG/Samsung/Hitachi & equivalent)				
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CCTV

S.No	Referenc e	DESCRIPTION OF ITEM	UNIT	QT Y	RAT E	AMOUN T
A.		CCTV (ANALOG VIDEO SURVEILLANCE) SYSTEM				
1	NS	Supply, installation, testing and commissioning of 2.4 Mega Pixel (HD Quality), Bullet Camera, IR Impulse/Hikvision/Tyco/Pelco/Honeyw ell/ CP Plus	No	15		
2	NS	Supply, installation, testing and commissioning of 2.4 Mega Pixel (HD Quality), Dome Camera, IR Impulse/Hikvision/Tyco/Pelco/Honeyw ell/CP Plus	No	43		
3	NS	Supply, installation, testing and commissioning of 32 channel DVR. with Hard Disk, for 30 days recording Impulse/Hikvision/Tyco/Pelco/Honeyw ell/CP Plus	No	2		
4	NS	Supply, installation, testing and commissioning two video outputs & 32" totally flat colour LCD monitor Panasonic/LG/Samsung	No	2		
5	NS	Supply installation testing and commissioning of Cat 3+1 CCTV Copper Cable Polycab/D- Link/Kalinga/Havells/Legrand	RM	120 0		

6	NS	Supply installation commissioning and testing of 1 TB Hard Disck, for 30 days recording	No	8		
7	NS	Supply installation testing and commissioning of 10 Channel power supply Reputed Make	No	7		
9	NS	Supply installation testing and commissioning of BNC Connectors/Power Connectors etc. Consumable itesms Reputed Make	Lot	60		
B	MPWD 2016					
10	H:02:00	Supplying and fixing of the following size of FRLS PVC conduit along with the accessories in surface/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recess, conduit as required				
	H:02:02	25mm dia FRLS PVC conduit pipe	RM	1200		

PA and EPABX (MPWD 2016)

S. NO	SSR NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	NSR					
A	PA SYSTEM					
1	NSR	Supply of 250 watt ,AC 220-240 V, amplifier with all necessary cable as required (Ahuja SSA-160 or equivalent)	EACH	2		
2	NSR	Supply of Paging Microphone (Corded)	EACH	2		
3	NSR	Supply of Microphone (Corded Mic) (Ahuja/Sony/or Equivalent)	EACH	2		
4	NSR	Supply of Microphone (Cordless Mic)	EA	2		

		(Ahuja/Sony/or Equivalent)	CH			
5	NSR	Supply of Speaker (Box)32 watt (Ahuja/Sony/or Equivalent)	EA CH	8		
6	NSR	Horn speaker 40 watt (Ahuja/Sony/or Equivalent)	EA CH	2		
7	NSR	2.5 sq. mm connecting wire (double core copper conductor)	RM	140		
B	EPBAX SYSTE M					
8	NSR	Supply installation testing and commissioning of Star model, 50 lines, EPABX Compact 832 Technology Microcontroller based stored programme control techniques CMOS cross point switching Longitudinal balance 60db Extn. Loop resistance 600 ohms Insertion Loss a) Extn. to Extn. Less than 2 db at 1 KHz b) Extn. to P&T line Less than 1 db at 1 KHz Dial Speed 10 +/- 0.5 PPS Cross talk attenuation Not less than -70 db Break ratio 33:66 Input Power 230 VC +/- 10% 50 Hz Cabling Single pair Ambient conditions 0 to 45° C, 95% RH (Non condensing) UPS Inbuilt (without batteries)	EA CH	1		
9	NSR	Operator Console	EA CH	1		
10	NSR	Land line telephone corded complete all as per BEETAL M59/ or equivalent white/black	EA CH	50		
	MPWD 2016					
11	C:04:08	Wiring in Parallel system with PVC Insulated Telephone cables for indoor applications confirming to TEC specification G/WIR06/02 running inside PVC Casing & Capping pipe Grade-II 20mm dia' fixed, surface in the wall/ceiling/floor as per convenience including				

		junction box having required numbers of ways Main to Sub-Main/DB, Sub-main/DB to SDB/Switch boards/SDB to switch boards as required:-				
C:04:08(D)		0.5mm Four pairs un armoured Telephone cable Indoor type	RM	215		
C:04:08(E)		0.5mm Five pairs un armoured Telephone cable Indoor type	RM	185		
C:04:08(F)		0.5mm ten pairs un armoured Telephone cable Indoor type	RM	145		
C:04:08(G)		0.5mm Twenty pairs un armoured Telephone cable Indoor type	RM	220		
O:08:04		Telephone & EPABX Junction Boxes 20 Pairs with Krone connector	EA CH	1		
O:08:03		Telephone & EPABX Junction Boxes 20 Pairs with connector	EA CH	2		
O:08:07		Telephone & EPABX Junction Boxes 50 Pair with connector	EA CH	1		
O:08:08		Telephone & EPABX Junction Boxes 50 Pairs with Krone connector	EA CH	1		
O:08:10		Telephone & EPABX Junction Boxes 100 Pairs with Krone connector	EA CH	1		

FIRE FIGHTING

A. SITC OF ADDRESSABLE FIRE ALARM SYSTEM						
S.No.	Reference	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
1	NSR	Supply & Installation /testing / commisioning Analogue Addressable Intelligent Fire alarm control panel, 4 Loop, provision to make with a minimum capacity of 250Nos per loop, with battery back up for 6 Hrs during normal operation and 15 minutes alarm operation, with minimum 160 Character LCD display, necessary interface card to connect a repeater panel and all hardware & software as per specification.	No	1		

2	NSR	Supply & Installation /testing / commisioning Analog Addressable Smoke Detector(below) with programmable for timed automatic sensitivity selection with Standard base and other accessories as required.	No	50		
3	NSR	Supply & Installation /testing / commisioning Analog Addressable Mutli Sensor Detector (Above) with programmable for timed automatic sensitivity selection with Standard base and other accessories as required.	No	50		
4	NSR	Supply Installation of heat detector with base, Junction box and other accessories as required,	No	50		
5	NSR	SITC of Response indicator	No	10		
6	NSR	Supply & Installation /testing / commisioning Analogue Addressable Fault isolator module capable of monitoring shorted loop circuit and automatically restore communications when shorted conditions are corrected. (FIM's are used for every 20 detectors/devices)	No	10		
7	NSR	Supply & Installation /testing / commisioning Analogue Addressable Monitor module operating at 24V DC, 2A, rated at 230V, provided with DPDT contact.	No	2		
8	NSR	Supply & Installation /testing / commisioning Addressable Electronic Hooter cum Strobe ceiling mounted. The hooters shall be made of ABS plastic, and have a DB level of 65dbA and a multi tone facility. Addressable Control Module shall be fitted in a junction box.	No	15		

9	NSR	Supply & Installation /testing / commisioning Addressable Manual call point having an integrally mounted addressable module that monitors and reports contact status. (PULL TYPE)	No	4		
10	NSR	Supply & Installation /testing / commisioning of 2C X 1.5Sq.mm FRLS CU. Ar Cable	Rmt	700		
B.FIRE EXTINGUISHER						
1	NSR	Supply & Fixing of 4.5Kg, CO2 Type Fire Extinguisher, Trolley Mounted, Easy Weight Management, Used Unused Mechanism, Squeeze Grip, Gross Weight 19.1 Kg, Empty Weight 14.6 Kg, Can Height 860MM, Diameter 140MM, Discharge time minimum 13 Secs, Controllable discharge mechanism, Range minimum 2 Meters, Applicable on Class B,C & electrically started Fire, B Rating 13B, Can construction : Hot Spinning / Forging, Valve Construction : Forging & Machining, Internal Coating of Can : Not Applicable, External Coating of Can : Spray Painting, Sheet metal thickness : 4.5MM, ISI & CE Approved, 2 Year Warranty Including transportation, all taxes and all labour charges etc complete. Makes : Safex / Kenex / Bharat / Reliance	Nos	8		

2	NSR	<p>Supply and fixing of ABC Powder MAP 4 Kg Fire extinguisher Mono ammonium phosphate power 90, stored pressure type, IS 15683 : 2006, pressure gauge gross wt. 6.9 kg, empty wt.2.9 kg, can Ht.440mm, Diameter 140mm, Discharge time less than 13 sec, controllable discharge mechanism, range min. 4 mts applicable on classes A,B, C & electrically started fires, A- rating 3A, B-rating 34B, can construction: Deep drawn Co2 mig welding, wall construction: Forging & Machining, internal coating of can: Epoxy power coating, External coating of Can:Epoxy polyester powder coating, sheet metal thickness:1.60mm, Helium leakage detection tested, ISI & CE approved with 5 years warranty (Cease Fire / Minimax make) Including transportation,all taxes and all labour charges etc complete. Makes : Safex / Kenex / Bharat / Reliance</p>	Nos	8		
3	NSR	<p>Supply and fixing of 4Nos of 9 Ltrs capacity round bottom bucket with sand, duly painted with enamel white inside & red outside and letter FIRE with black colour.</p>	Nos	6		
4	NSR	<p>Supply and fixing of Fire bucket stand fabricated by M.S. angles to install for two numbers of buckets as per local fire officers standards.</p>	Nos	10		

Price Schedule

Lot 3: Repair and Renovation of District Hospital, Lawngtlai

Lot	Description	Amount in INR (in figures)	Amount in INR (words)
Lot 3	Repair and Renovation of District Hospital, Lawngtlai		

Works requirements for DH Lawngtlai

Scope of work

District hospital at Lawngtlai is located in the heart of lawngtlai city and is spread over 8.26 acres of land area.

The Lawngtlai District hospital campus consists of 53 buildings and their area statement is as under-

S.No	Building name	Ground Effected Area (Sq. M)	Remarks
1	Aayush/ Art Centre	41.16	Building proposed to be repaired and renovated
2	IPD Building	926.95	Building proposed to be repaired and renovated
3	OPD, Causality and laboratory department	552.47	Building proposed to be repaired and renovated
4	Pump house / water supply room	72.44	Building proposed to be repaired and renovated
5	Blood Bank	164.97	Building proposed to be repaired and renovated
6	Dental OPD	90.92	Building proposed to be repaired and renovated
7	Kitchen and OST Centre	16.79	Building proposed to be repaired and renovated
8	Mortuary	27.22	
9	PSA Plant	44.98	
10	Old Building	66.24	
11	toilet	15.26	
12	Hut	5.44	
13	DG Room	24.11	
14	parking area	169.11	
15	Quarter-1	113.63	
16	Quarter-2	103.33	

S.No	Building name	Ground Effected Area (Sq. M)	Remarks
17	Quarter-3	155.01	
18	Quarter-4	61.7	
19	Quarter-5	58.74	
20	Quarter-6	35.4	
21	Quarter-7	197.7	
22	Quarter-8	53.24	
23	Quarter-9	129.34	
24	Quarter-10	44.62	
25	Quarter-11	340.08	
26	Incinerator	43.78	
27	Solar Panel	340.08	
28	Oral substitution therapy	27.22	
29	Canteen	46.97	
30	Quarter-1	96.98	
31	Quarter-2	109.49	
32	Doctor quarter	110.71	
33	Trauma Centre	143.7	
34	Staff quarter / Cafeteria	48.7	
35	Quarter-4	158	
36	Quarter-5	57.31	
37	Garage-1	31.08	
38	Garage-2	40.89	
39	CMO Building	278.73	
40	cmo quarter	146.5	
41	Store	11.34	
42	Toilet	7	
43	Main center	133.92	
44	Store	54.44	
45	Quarter-6	105.3	
46	Quarter-7	68.8	
47	Quarter-8	12.16	
48	Quarter-9	22.89	
49	Superintendent office	167.34	
50	Quarter-10	218.12	
51	Quarter-11	48.46	
52	TB Block	106.14	
53	Hut	8.12	
	Total	6155.02	

Layout.



Presently the Hospital has following functional departments:

- Emergency.
- Male ward.
- Pediatric ward.
- Covid Centre.
- NDC Clinic.
- OPD Department.
- X-Ray.
- Laboratories.
- OT.
- ANC & PNC.
- SNCU.
- DMS Office.

- Ultrasound, Endoscopy
- Art Centre
- Dental OPD
- Blood Bank
- Kitchen
- OST Centre
- RO Plant

The following table presents the summary of repairs and renovation works to be undertaken in the seven existing buildings:

Name of the Building	Built up area (in sqm)	Floor	Location	Department
IPD Building	1274.73	2	Opposite of OPD building	Emergency, Male ward, Paediatric ward, Covid-Centre.
OPD Building	1405.7	4	Opposite of IPD building	NDC Clinic, OPD Department, X- ray, Laboratories, OT & ANC, PNC, SNCU, DMS Office
ART CENTER (Aayush Building)	118.52	2	At right side of IPD Building	Ultrasound, Endoscopy & Art centre
Dental OPD Building	42.48	1	Near Gate no. 1	Dental OPD
Blood Bank Building	163.77	1	At Gate no. 3	Blood Bank
Kitchen, Ost Centre	201.2	1	Behind the IPD Building	Kitchen & OST Centre
Pump House	88.59	1	Near UC tank	RO Plant

The following buildings are to be newly constructed:

1. BMW Storage room.

Critical locations Photos :



Damaged flooring



Cracks found



No plaster on right side wall portion OPD



Repair of toilets

The works to be undertaken functional of building. Contractor coordinate to hospital superintendent and prepare a plan on the sequence of work to be done based on the hospital superintendent recommendations. The work to start only after shifting of equipment and patients from room and to be signed off by concerned authority. That the area is ready for repair and renovation. During the construction activity to avoid safety reasons. The area where repair and renovations to be undertaken should sealed of completely caution tape and green cloth in the work premises and sign boards are to be provide mentioning the area of the work to caution the people to avoid those areas.

Proposed changes and repairs in the buildings under the Lawngtlai district hospital:

Department	Proposed Changes	Drawing No.
IPD BUILDING (Emergency)	<ul style="list-style-type: none"> • Stop Centre is proposed in the utility room • Separate entrance is proposed for normal and Covid patients • Disabled friendly toilet is proposed to be made functional • Separate triage cum examination room is proposed by making a partition in the existing emergency room 	Drawing no.44/201-206, 44/303
OPD	Disabled friendly toilet is proposed in place of existing staff toilet adjacent to the malaria sentinel room.	Drawing no.44/207-220, 44/301-302
OT	<ul style="list-style-type: none"> • Repair considered 	Drawing no.44/214
SNCU	<ul style="list-style-type: none"> • Repair considered. 	Drawing no.44/217
BMW storage room	Separate Bio medical waste storage room is proposed behind the IPD building.	Drawing no. 44/305
AYUSH BUILDING	<ul style="list-style-type: none"> • Repair considered <ul style="list-style-type: none"> ○ Seepage ○ Crack repair and Plastering ○ Flooring 	Drawing no.44/221-223
BLOOD BANK	<ul style="list-style-type: none"> • Repair considered <ul style="list-style-type: none"> ○ Seepage ○ Crack repair and Plastering ○ Flooring ○ Painting 	Drawing no.44/224-226
DENTAL OPD	<ul style="list-style-type: none"> • Repair considered <ul style="list-style-type: none"> ○ Crack repair and Plastering 	Drawing no.44/227-228
KITCHEN OST CENTRE	<ul style="list-style-type: none"> • Repair considered <ul style="list-style-type: none"> ○ Flooring ○ Painting 	Drawing no.44/229-230
PUMP HOUSE	<ul style="list-style-type: none"> • Repair considered <ul style="list-style-type: none"> ○ Seepage ○ Crack repair and Plastering ○ Flooring 	Drawing no.44/231-233
Mortuary	The existing mortuary is proposed to be shifted at the	Mortuary

Department	Proposed Changes	Drawing No.
	ground floor of AYUSH building and existing mortuary is proposed to be converted in storeroom.	drawing.
Electrical	<ul style="list-style-type: none"> • New electrical inventories is proposed in boq that needs to be replaced with the damaged one • CCTV Camera is to be proposed for the monitoring 	CCTV DRAWING No :44/501-511
IPD and OPD Building	<ul style="list-style-type: none"> • Repair considered wherever required <ul style="list-style-type: none"> ○ Seepage ○ Crack repair and Plastering ○ Flooring ○ Painting ○ Water proofing 	Drawing no.44/201-220

**Civil Works
(AS PER MPWD 2019)**

S.No	MPWD 2019	Description of Items	Unit	Quantity	Rate	Amount
1	2.06	Earthwork in excavation over areas (exceeding 30cm in depth, 1.5m in width as well as 10sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed.				
	(a)	Ordinary and Hard Soil	Cum	55.13		
2	2.07	Earthwork in excavation in foundation trenches or drains etc. (not exceeding 1.5m in width or 10sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5m including getting out excavated soil and disposal of surplus excavated soil as directed within a lead of 50 metres.				
	(b)	Hard Soil (<i>pick work</i>)	Cum	42.23		
3	2.17	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.				
4	4.02	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work upto plinth level:				
	(a)	1:2:4 (1 cement :2 coarse sand :4 stone aggregate 20mm nominal size)	Cum	25.50		

5	4.07	Providing and laying cement concrete in retaining wall, return walls, walls (any thickness) including pilasters, piers, columns,abutments, pillars, posts,plain window sills, sunken floors, etc. up to floor five level excluding the cost of centering, shuttering and finishing :				
	(a)	1 : 2: 4(1 cement :2course sand : 4 stone aggregate 20mm)	Cum	45.46		
6	5.01	Providing and laying in position reinforced cement concrete excluding cost of centering and shuttering , finishing and reinforcement in -				
	(a)	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)				
		All work upto plinth level :	Cum	4.41		
7	5.02	Reinforced cement concrete work in walls including attached pilasters, columns, pillers, posts, piers, abutments, return walls, retaining walls, struts, buttresses, string or lacing courses, fillets etc. upto floor five level excluding cost of centering shuttering etc complete.				
	(a)	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)	Cum	1.16		
8	5.03	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement complete.				
	(a)	1:1.5:3 (1 Cement:1.5 Coarse Sand:3 graded Stone aggregate 20 mm nominal	Cum	4.86		

		size.				
9	5.10	Centering and shuttering including strutting, propping etc. and removal of form for all heights :				
	(a)	Foundations, footings, bases of columns etc. for mass concrete.	Sqm	8.64		
	(c)	Columns, pillars, piers, abutments, posts and struts.	Sqm	23.04		
	(d)	Lintels, beams, plinth beams, girders, bressumers and cantilevers, etc.	Sqm	39.27		
	(e)	Suspended floors, roofs, landings, shelves and their support, balconies and chajjaj,etc.	Sqm	22.34		
10	5.18	Steel reinforcement for RCC work including straightening, cutting, bending, placing in position and binding all complete.				
	(b)	Thermo-Mechanically Treated bars of grade Fe-500 or more.	kg	1964.78		
11	6.01	First class brickwork in foundation and plinth in :				
	(c)	in cement mortar 1 : 6 (1 cement : 6 coarse sand)	Cum	16.56		
12	6.06	Half brick masonry with first class brick in superstructure above plinth level upto floor V level.				
	(b)	in cement mortar 1 : 4 (1 cement : 4coarse sand)	Sqm	186.81		
13	9.06	Providing 1st class local wood dressed in frames of chaukat for doors, windows, clerestory windows fixed in position.	cum	0.49		
14	9.11	Providing and fixing 1st class local wood <i>panelled</i> shutters for doors etc. including M.S. butt hinges with necessary screws, etc. complete.				

	(b)	35 mm thick.	Sqm	23.10		
15	9.55	Providing and fixing factory made PVC door frame made of PVC extruded section (Chaukhat) having overall dimension of 48x40 mm (tolerance + 1 mm) with wall thickness 2.0 mm + 0.2 mm, corners of the door frame to be mitred and joined by means of plastic/M.S. galvanized brackets and stainless steel screws. The hinge side vertical of the frames reinforced by galvanised M.S. tube of size 19x19 mm and 1 mm + 0.1 mm wall thickness and 3 Nos. stainless steel hinges fixed to the frame complete as per manufacturers specification and direction of Engineer-in-charge. (Sintex, Plasopan or equivalent) :	Rmt	35.80		
16	9.56	Factory made PVC door shutters made of styles and rails of a uPVC hollow section of size 59x24 mm and wall thickness 2 mm (± 0.2 mm) with inbuilt edging on both sides. The styles and rails mitred and joint at the corners by means of M.S. galvanised/ plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 20x20 mm and 1 mm (± 0.1 mm) wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x24 mm and 2 mm (± 0.2 mm) wall thickness, fixed to the shutter styles by means of plastic/galvanised M.S. 'U' cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm (± 0.1 mm) wall thickness. The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod				

		and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in-charge. (For W.C. and bathroom door shutter) (Sintex, Plasopan or equivalent).				
	b)	30mm thick shutter	sqm	17.25		
17	10.09	Supplying and fixing M.S. decorative railing consisting of top and bottom rails of 40mmx40mm square or circular section at distance of 788mm apart, 30mmx30mm square or circular section decorative intermediate balusters welded to top and bottom rails at 280mm apart. The base of balusters at 560mm apart welded with base plate of 60mmx3mm thick and fixed with cement grouting firmly to concrete section including steel priming and steel painting complete etc.	sqm	90.00		

18	11.03	<p>Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular and other sections of approved make conforming to IS: 733 and IS : 1285, anodised transparent or dyed to required shade according to IS : 1868. (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips, or with expansion hold fastners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and paneling to be paid for separately). For fixed portion.</p>				
	(b)	Anodised	sqm	104.30		
19	11.04	<p>For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required. (Glazing to be paid for separately)</p>				
	(b)	Anodised	sqm	62.39		
20	11.05	<p>Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge .</p>				
	(a)	With glass panes of 4.0 mm thickness.	sqm	64.27		

	(d)	Frosted glass of 4.00 mm thickness.	sqm	4.28		
21	11.06	Providing and fixing 12mm thick prelaminated three layer medium density (exterior grade) particle board Grade I, Type II conforming to IS : 12823 bonded with phenol formaldehyde synthetic resin, of approved brand and manufacture in paneling fixed in aluminium doors, windows shutters and partition frames with C.P. brass/ stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.				
	(a)	Pre-laminated particle board with decorative lamination on one side and balancing lamination on other side.	sqm	35.44		
22	11.07	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS : 6315 marked, Hardwyn make (model 3000) or equivalent for doors including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge .				
	(a)	With stainless steel cover plate	no	6.00		
23	11.11	Filling the gap in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete. Upto 5mm depth and 5 mm width.	rm	476.40		

24	12.09	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).				
	(C)	Dark shade using ordinary cement	Sqm	130.40		
25	12.11	Providing and Fixing ceramic glazed floor tiles of size 300x300mm or more (thickness to be specified by the manufacturer) of 1st quality conforming to IS: 15622 of approved make in all colours,shades, except white,ivory,grey,fume red brown, laid on 20mm thick cement mortar 1 : 4 (1cement : 4 course sand) including pointing the joints with white cement and matching pigments etc. complete. as per designed colour.				
	(b)	Matt/Antiscratch	Sqm	50.81		
26	12.12	Providing & laying vitrified floor tiles in different sizes (thickness to be specified by the manufacture) with water absorption less than 0.08% and conforming to IS:15622,of approved make, in all colours and shades, laid on bed of 20mm thick cement mortar 1 : 4 (1cement:4course sand), including the joints with white cement and matching pigments etc.complete.as per design collours.				
	(b)	Nano tech (Single charge)	Sqm	18.63		
	(c)	Double charge	Sqm	967.77		
27	12.17	Grouting the jounts of flooring tiles having joints of 3 mm width using epoxy grout mix of 0.70 kg of organic coated filler of desired shade(0.10kg of hardener and 0.20 kg of resin per kg) grouting and finishing complete as per	Sqm	84.00		

		direction of Engineer-in-charge.				
28	12.19	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to e specified by the manufacaturer),of approved make, in all colours, shades wxcept burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12mm thick bed of cemunt mortar 1:3 (1cemeny :3 coarse sand) and jointing with cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	Sqm	99.09		
29	14.37	Providing and fixing 150 mm bright finished brass floor door stopper with rubber cushion, screws, etc. to suite shutter thickness complete.	no	13.00		
30	14.38	Providing and fixing bright finished Brass Door Closer with necessary screws, etc. complete.				
	(a)	Hydraulic Type	no	13.00		
31	14.48	Providing and fixing CP brass handles with necessary screws, etc. complete				
	(a)	250 mm	no	28.00		
32	14.50	Providing and fixing alluminium sliding door bolts (aldrops) anodised transparent or dyed to required colour or shade with nuts and screws etc. complete.				
	(b)	250 x 16 mm	no	22.00		

33	14.51	Providing and fixing Aluminium Tower Bolts (Socket Bolts) anodised transparent or dyed to required colour or shade with necessary screws etc. complete.				
	(c)	150 mm	no	28.00		
34	14.52	Providing and fixing alluminium handles anodised transparent or dyed to required colour or shade with necessary screws, etc. complete				
	(a)	125 mm	no	28.00		
35	15.36	Supplying, fitting and fixing PVC board ceiling with nescessary screws etc. complete excluding frame work of base and beading.	sqm	17.50		
36	17.01	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm uPVC P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:				
	(a)	Orrisa pan with integral type foot rests				
	(i)	White	no	5.00		
37	17.03	Providing and fixing low level P.V.C. flushing cistern of Parryware/Hindware/Cera and equivalent make with fittings complete.				
	(i)	10 litres-white	no	7.00		

38	17.04	Providing and fixing vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :				
	(i)	White	no	9.00		
39	17.08	Providing and fixing White vitreous china (Matrix Set -1) WB 65 x 35 with one pair mounting brackets, EWC & Cistern complete with fittings & seat cover, one no hinged rail 76 cm and five nos of grab rails 60 cm, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :	no	1.00		
40	17.10	Providing and fixing solid plastic Seat Cover and lid for pedestal type W.C. pan with C.P. brass hinges, rubber buffers, etc. complete.				
	(i)	White	no	8.00		
41	17.15	Providing and fixing Health faucet with flexible tube upto 1 metre long and holder of quality and make as approved by Engineer - in - charge..	no	8.00		
42	17.16	Providing and fixing White vitreous china wash basin Standard of Parryware/ Hindware/ Cera and equivalent make with R.S. or C.I. brackets, 15mm C.P. brass pillar taps, C.P. brass chain with rubber plugs, 32mm C.P. brass waste of standard pattern, 32mm C.P. brass traps and union complete including painting of fittings and brackets, cutting and making good the walls				

		wherever required.				
	(a)	Vitreous China Wash basin size 630x450 mm with single 15 mm C.P. brass pillar taps				
	(i)	White	no	7.00		
	(b)	Vitreous China Wash basin Compact 450 x 300 mm with single 15 mm C.P. brass pillar taps				
	(i)	White	no	1.00		
43	17.22	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P brass waste and 40mm C.P.brass trap with necessary C.P. brass unions complete, including painting of fittings and brackets, cutting and making good the wall wherever required :				
	(b)	Size 600x450x200mm	no	2.00		
44	17.24	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :	no	9.00		
45	17.28	Providing and fixing C.P. brass towel rail with two C.P. brass brackets to wooden cleats with C.P. brass screws.				
	(b)	600x20mm size.	no	9.00		

46	17.33	Providing and fixing on wall face SWRPVC soil, waste and vent pipes including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia.	rm	87.50		
	(b)	75mm dia.	rm	37.00		
47	17.34	Providing and fixing SWRPVC plain bend of required degree (87.50°) including jointing with rubber lubricant/cement solvent complete.				
	(a)	110 mm dia.	no	54.00		
	(b)	75 mm dia.	no	21.00		
48	17.35	Providing and fixing SWRPVC plain bend of required degree (45°) including jointing with rubber lubricant/cement solvent complete.				
	(a)	110 mm dia.	no	31.00		
	(b)	75 mm dia.	no	14.00		
49	17.36	Providing and fixing SWRPVC bend with access door of required degree including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia SWRPVC bend with access door.	no	7.00		
	(b)	75mm dia SWRPVC bend with access door.	no	7.00		
50	17.37	Providing and fixing single equal SWRPVC plain junction of required degree (T-junction) .				
	(a)	110x110x110mm.	no	26.00		
	(b)	75x75x75mm.	no	14.00		
51	17.41	Providing and fixing SWRPVC socket including jointing with rubber lubricant/cement solvent.				
	(a)	110mm dia socket.	no	89.00		

	(b)	75 mm dia socket.	no	37.00		
52	17.44	Providing and fixing 125/110 S-trap SWRPVC including joining with rubber lubricant/ solvent cement.	no	7.00		
53	17.45	Providing and fixing uPVC multi floor trap with floor trap grating including jointing with rubber lubricant/ solvent cement complete.	no	11.00		
54	18.01	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.				
	(a)	Sintex or equivalent	liter	6000.00		
55	18.07	Providing and fixing brass bib cock of approved quality.				
	(a)	15mm nominal bore	no	18.00		
56	18.14	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :				
	(a)	15mm nominal bore	no	13.00		
57	18.16	Providing and fixing 15 mm nominal bore C.P. brass angle stop cock for basin mixer and geyser points of approved quality conforming to IS:8931 .				
	(b)	Class-II	no	47.00		

58	18.29	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
	(a)	15mm dia nominal bore.	rm	113.00		
	(b)	20mm dia nominal bore.	rm	118.00		
	(c)	25mm dia nominal bore.	rm	500.00		
59	18.32	Making connection of CPVC pipes distribution branch by providing and fixing equal Tee with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia nominal bore.	no	49.00		
	(b)	20mm dia nominal bore.	no	47.00		
	(c)	25mm dia.	no	35.00		
60	18.36	Making connection of Astral CPVC pipes distribution branch by providing and fixing Elbow 90° with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	no	55.00		
	(b)	20mm dia.	no	48.00		
	(c)	25mm dia.	no	43.00		
61	18.37	Making connection of Astral CPVC pipes distribution branch by providing and fixing Elbow 45° with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	no	47.00		

	(b)	20mm dia.	no	47.00		
	(c)	25mm dia.	no	23.00		
62	18.43	Making connection of Astral CPVC pipes distribution branch by providing and fixing Female Adaptor (Brass) with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	no	47.00		
63	18.44	Making connection of Astral CPVC pipes distribution branch by providing and fixing Socket/Coupling with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	no	64.00		
	(b)	20mm dia.	no	52.00		
	(c)	25mm dia.	no	45.00		
64	18.45	Making connection of Astral CPVC pipes distribution branch by providing and fixing Reducer Coupling with jointing, testing complete including cutting and making good etc.				
	(b)	20 x 15mm	no	15.00		
	(d)	25 x 20mm	no	14.00		
65	19.02	Applying double coated cement slurry with water proofing chemical (SUPER latex chemical) in proportion 1 : 4 :7 (1 latex : 4 water :7 cement) including cleaning the treated surfaces with brushes etc.@ 0.158kg/sqm .	sqm	754.25		

66	19.04	Providing and mixing water proofing chemical (PIDIPROOF POWDER chemical) in plain and reinforced cement concrete work 1 : 2 : 4 , @1.0% by weight of cement.	cum	45.46		
67	67/19.19	Extra for providing and mixing water proofing chemical (latex or equivalent chemical) @ 2kg per bag of cement in -				
	(d)	15mm cement plaster 1 : 4 (<i>1 cement : 4 sand</i>).	Sqm	148.05		
68	20.08	12mm cement plaster 1 : 4 (<i>1 cement : 4 fine sand</i>).	Sqm	1047.04		
69	20.12	15mm cement plaster 1 : 4 (<i>1 cement : 4 fine sand</i>).	Sqm	573.93		
70	20.25	6mm cement plaster to ceiling 1 : 3 (<i>1 cement : 3 fine sand</i>)	Sqm	130.93		
71	20.47	White washing with lime to give an even shade : New work (three or more coats)	Sqm	36.00		
72	20.66	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade: New work (one or more coats)	Sqm	123.93		
73	20.72	Painting with synthetic enamel paint of approved brand and manufacture in all shades on new work (<i>two or more coats</i>).				
	(a)	General quality	Sqm	51.24		
74	20.73	Wall painting with interior emulsion paint of approved brand and manufacture on new work (<i>two or more coats</i>) to give an even shade.				
	(b)	Premium interior emulsion like Velvet touch Luxol silk etc.	Sqm	1029.37		

75	20.75	Finishing walls with exterior emulsion of required shade on new work (<i>three or more coats</i>) to give an even shade.				
	(b)	Premium exterior emulsion like weather shield, weathercote etc.	Sqm	251.88		
76	23.02	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	Sqm	1481.02		
77	23.03	Repairs to plaster of thickness 12mm to 20mm in patches of area 2.5 sq. metres and under including cutting the patch in proper shape and preparing and plastering the surface of the walls complete including disposal of rubbish to the dumping ground within 50 metres lead :				
	(b)	With cement mortar 1:4 (1 cement : 4 coarse sand)	Sqm	24.34		
78	23.04	Fixing chowkhats in existing opening including embedding chowkhats in floors or walls cutting masonry for holdfasts embedding hold fasts in cement concrete blocks with cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) painting two coats of coal tar to sides of chowkhats and making good the damages to walls and floors as required complete including disposal of rubbish to the dumping ground within 50 metres lead :				
	(a)	Door chowkhats	no	7.00		

79	23.05	Making the opening in brick masonry including dismantling in floor or walls by cutting masonry and making good the damages to walls, flooring and jambs complete, to match existing surface i/c disposal of mulba/ rubbish to the nearest municipal dumping ground, all complete as per direction of Engineer-in-Charge	Sqm	6.30		
80	23.08	Renewing glass panes and refixing existing wooden fillets:				
	(a)	Glass panes of thickness 4mm	Sqm	2.40		
81	23.40	White washing with lime to give an even shade :				
	(a)	Old work (two or more coats)	Sqm	353.00		
82	23.44	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade : Old work (one or more coats)	Sqm	388.41		
83	23.52	Wall painting with interior emulsion paint of approved brand and manufacture on old work (<i>one or more coats</i>) to give an even shade.				
	(b)	Premium interior emulsion like Velvet touch luxol silk etc.	Sqm	702.71		
84	23.53	Finishing walls with regular exterior emulsion of required shade on old work (three or more coats) to give an even shade.				
	(b)	Premium exterior emulsion like weathercote, weather shield etc.	Sqm	243.03		
85	23.54	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade : One or more coats on old work.				
	(a)	General quality	Sqm	515.96		

86	24.01	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.				
	(a)	Nominal concrete 1:3:6 Or richer mix .	Cum	50.79		
87	24.06	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead:				
	(a)	In cement mortar	Cum	3.95		
88	24.11	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead :				
	(a)	Of area 3 sq. metres and below	no	16.00		
89	24.12	Taking out doors, windows and clerestory window shutters (steel or wood) including stacking within 50 metres lead:				
	(a)	Of area 3 sq. metres and below	no	3.00		
90	24.22	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
	(a)	For thickness of tiles 10 mm to 25 mm	Sqm	121.09		
	(b)	For thickness of tiles above 25mm and upto 40mm	Sqm	18.00		
91	24.43	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.	Sqm	1016.8		
				3		
92	24.45	Dismantling W.C. Pan of all sizes including disposal of dismantled materials all complete as per directions of Engineer-in-Charge.	Sqm	7.43		

93	24.46	Hacking of CC flooring including cleaning for surface etc. complete as per direction of the Engineer-in-Charge.	Sqm	754.25		
94	N.S.R	Providing & Inserting 12mm dia galvanised steel injection nipple in honeycomb area and along the crackline including drilling of holes required diameter (20mm to 30mm) upto a depth of 30mm to 80mm at required spacing and making the holes and cracks dust free by blowing compressed air , sealing the distance between injection nipple with the adhesive chemical of approved make and allow it to cure completely.	no	452.55		
95	N.S.R	Injection approved grout (SIKADUR- 55LP)in proportion recommended by the manufacturer into cracks/hony-comb area of concrete/masonry by suitable gun/pump at requird pressure including cutting of nippales after curing etc. Complete as per directions of Engineer-in-charge (Quotation by SAINKA CONSTRUCTIONS PVT LTD)	Kg	201.13		
		NOTE: This quantity may be vary and depend upon the site concrete quality				
96	N.S.R	Note :- Transport charges (carriage) for dumping the building waste at near by dumping yard/zone. Disposal of approx 5000 cft (building waste generated) around 5 Km from DH laungtlai in 25 trip i.e. 200 cft /Trip	no	25.00		

97	N.S.R	Providing and fixing factory made solid Wood Polymer Composite (WPC) single extruded Door Frame section of size with encapsulation of 8MM rigid layer on all the six surfaces. The door frame will have a rebat of 32MM. Door Frame section of 63.5x100 MM .The two Vertical members are to be joined together with the horizontal member using 8x75 MM long MS Star full thread screws to be used with reverse forward speed control hand drilling machine. The ready/assembled door frame is fixed to the wall using hold fast or bolt fasteners. A minimum of 4 No.s of screws to be provided for each vertical member & minimum 2no.s for horizontal member	<i>Rmt</i>	36.00		
98	N.S.R	Providing and fixing 28 -30 MM thick solid Wood Polymer Composite(WPC) single extruded door shutter with 3MM top and bottom rigid layer with an overall density of 750kg/Cum. It will be fixed to the frame using 3 inch /4 inch hinges. A minimum of 4 hinges will be required for fixing the door with the frame	<i>Sqm</i>	13.86		
99	N.S.R	Diluting and injecting chemical emulsion for Pre-construction Anti-Termite Treatment with Chlorpyriphos/Lindane emulsifiable chemical 20% with 1% concentration.	<i>Sqm</i>	42.71		
100	N.S.R	Providing Diluting and injecting chemical emulsion for existing windows and doors post construction Anti-Termite Treatment Chlorpyriphos 20% EC. (Note: Spray Treatment: Spray will be applied on all windows and doors. Chemical will be injected inside the cracks of windows and doors at the wall junction.)				
	(a)	Doors / Windows	<i>NO</i>	10.00		

	(b)	Providing and supply Service cost for Diluting and injecting chemical emulsion for Effected Floor areas	Sqm	350.00		
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ELECTRICAL
(AS PER MPWD 2016)

S. No	MPWD 2016	DESCRIPTION	UNIT	QTY	RATE (Rs.)	AMOUNT (Rs.)
1	C:02:06	Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per IS:694 (1990) and Flame retardant low smoke & Halogen (FR-LSH) 1100 voltage graded copper flexible wire stranded copper running inside PVC Casing & capping (Grade-II) of all available sizes diameter fixed, surface on the wall/ceiling/floor as per convenience including junction box having required numbers of ways from Main to Sub-Main/DB/Sub-Main/DB to SDB/SDB/Switch boards/SDB to switch boards as required				
	C:02:06(A)	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	RM	180		
2	E:01:00	Rewiring for light point/fan point/exhaust fan point/calling bell point with 1.5 Sqmm of PVC insulated standard copper conductor 1.5 sqmm as per IS:694 (1977) and Life shields Halogen Free Flame Retardant (HFFR) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as				
	E:01:01	VERY SHORT POINT	POINT	165		
3	F:11:00	Supplying and drawing the following sizes of PVC insulated standard copper conductor 1.5 sqmm as per IS:694 (1977) and Flame Retardant Low smoke & Halogen (FRLS&H) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as				

		required				
i.	F:11:01	1 x 1.5 sq. mm	RM	400		
ii.	F:11:02	2 x 1.5 sq. mm	RM	380		
4	H:01:00	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.				
	H:01:02	25mm dia steel conduit pipe	RM	160		
5	H:05:00	Providing and fixing of the following sizes of PVC casing & capping double lock on surface with necessary accessories as required Grade I				
	H:05:03	25mm X12mm PVC casing & capping double locked	RM	160		
6	I:02:00	Supplying and fixing of Modular switch board grade-II of the following sizes/modules on surface/recess including PVC/Steel boxes, modular plate and necessary switches, plug/socket, and fan regulators etc. with necessary painting if necessary				
i.	I:02:13	2 S	EAC H	119		
ii.	I:02:33	3 S	EAC H	75		
iii.	I:02:53	4 S	EAC H	42		
7	J:01:39	Installation of Exhaust fan up-to 450 mm Sweeps in the existing opening, including making holes to suit the size of the above Exhaust fan, and making good the damage, connection, testing and commissioning etc, as required.	EAC H	15		
i	J:01:42	Extra for fixing the louvers/ shutters complete with frame for a exhaust fan of all sizes.	EAC H	15		
8	N:03:00	Supplying, fitting, & fixing of 4-Ways MCB DB single door in sheet steel, Phosphatised powderpainted				

		MCB DBs with Bus Bar, Neutral link, earth bar and din rail conforms to IS:13032, IS:8623, BS:5486 240 Volts 50 Hz, on surface/recess including inter-connection, painting etc, as required.				
i.	O:03:06	8-ways MCB DB SP&N DD metallic door	EAC H	4		
9	N:01:00	Supplying and fixing of all types and rating MCBs, RCCBs, ELCBs etc, 240/415 Volts 50Hz AC supply in the existing MCB DB complete with connections, testing & commissioning etc in completed				
i.	N:01:01	5 to 32 Amps ,SP, MCB B- series	EAC H	45		
ii.	N:01:35	40 Amps' FP, MCB Isolator	EAC H	5		
10	J:02:00	Installation of all kind of Electrical appliances				
i	J:01:04	Supplying, fitting and fixing Batten Holder fancy including connection etc, as required	Each	105		
ii	J:02:05	Installation of Air Conditioner Split Type 1.5/2.0 in the existing wall including fixing the Hook in the wall by standard size of sleeve Nuts and bolts or Standard Screw for the above Air Conditioner Split type 1.5/2.0 TR, and making good the damage, connection, testing and commissioning etc, as required	EAC H	4		
iii.	J:01:36	Installation, testing & commissioning of ceiling fan and regulator, including wiring the downrod of standard length (upto 30cm) with 2X1.5 sqmm PVC insulated copper conductor single core cable etc, as required	EAC H	48		
iv	J:01:39	Installation of Exhaust fan up-to 450 mm Sweeps in the existing opening, including making holes to suit the size of the above Exhaust fan, and making good the damage, Connection, testing and commissioning etc, as required.	EAC H	15		

v	J:01:42	Extra for fixing of the gravity louvers/shutters complete with frame for Exhaust fan of all sizes as required	EACH	15		
11	E:02:00	Supplying and drawing the following sizes of PVC insulated standard copper conductor 1.5 sqmm as per IS:694 (1977) and Flame Retardant Low Smoke & Halogen (FRLS&H) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as required				
	E:02:01	VERY SHORT POINT	per point	165		
12	R:01:01	Providing & fixing of lightning conductor finial, made of 25mm dia' 300mm long, copper tube, having single prong (one finger system) at the top, with 85mm dia' 3mm thick copper base plate including holes etc. complete as required	EACH	8		
13	R:01:62	Providing & fixing of G.I tape 20mmx3mm thick on parapet or surface of wall for lightning conductor as required (for horizontal run).	RM	250		
14	Q:01:01	Earthing with G.I Earth Pipe 4.5 Mtr long and 40mm dia' including accessories and providing masonry enclosure with cover plate having locking arrangement and water pipe, etc. (but without charcoal or coke and salt) complete as required	SET	2		
15	Q:01:03	Extra for using salt and charcoal for pipe earth electrode as required	EACH	2		
16	R:01:68	Providing and laying of G.I tape 32mmx6mm thick from earth electrode directly in ground as required	RM	100		
17	Q:01:43	Supplying & Laying of 25mmx5mm G.I Strip in 40mm dia' G.I pipe from earth electrode etc. as required. (25mmx5mm G.I tape (1.0 Kg/M))	RM	100		

18	MPWD	Supply of Ceiling fan 5 star rated Fusion 5* (Metallic beige-brown/pearl ivory-Gold) 1200mm sweeps (Havells/Usha/Polar/Gromton/Bajaj)	EAC H	48		
19	MPWD	Supply of Exhaust fan 300mm sweeps ISI marked (Usha/Havells/Polar/Gromton/Bajaj)	EAC H	15		
20	MPWD	4KVA Automatic Stabilizer with built-in high cut, Buzzer & Timer :Input:50VA-280V & Output:210V-240V (Venus/Indo/V-Guard/CARE)	EAC H	4		
21	MPWD	5/6 A switch	EAC H	219		
22	MPWD	2 way 5/6 A switch	EAC H	15		
23	MPWD	Modular Switch 16Amps On-Off	EAC H	35		
24	MPWD	3 pin 5/6 A socket outlet	EAC H	187		
25	MPWD	Modular Socket 16/6Amp 3+3	EAC H	109		
26	MPWD	Bell push	EAC H	10		
27	MPWD	two module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	EAC H	84		
28	MPWD	modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	EAC H	25		
	Non SoR ITEM (B)					
22	NSR1	Supply of 23W LED Lamp, Surface Mount. (Cat. No. LHLDDBA212R023 Base Cap - B22 Havells & equivalent)	EAC H	105		
24	NSR 2	Supplying of 1.5 Ton split Airconditioners(Excluding 4 KVA stabilizer) suitable or operation on AC supply single phase 50 Hz 230V with hermetically sealed conformer	EAC H	4		

		with air cooled condenser motor capacitor start run capacitors relay and over load protector internal unit with one indoor and one outdoor unit the condenser unit will be placed outside the room on the terrace to avoid noise (Make :- Carrier/ Volta/LG/Samsung/Hitachi & equivalent)				
28	NSR 3	Supply, installation, testing and commissioning of 5.5KVA - 192V Online UPS, Transformer Based Rating in VA, Watts 5.5KVA, 4.4 Kilo Watts Battery Module External Battery Module No's of Battery Required Sixteen Batteries - 16 No's Battery Type SMF - VRLA DC Voltage 192V (Make:- Microtek i-MAXX)	EACH	4		

CCTV

S.No	Reference	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A.		CCTV (ANALOG VIDEO SURVEILLANCE) SYSTEM				
1	NS	Supply, installation, testing and commissioning of 2.4 Mega Pixel (HD Quality), Bullet Camera, IR Impulse/Hikvision/Tyco/Pelco/Honeywell/ CP Plus	No.	12		
2	NS	Supply, installation, testing and commissioning of 2.4 Mega Pixel (HD Quality), Dome Camera, IR Impulse/Hikvision/Tyco/Pelco/Honeywell/CP Plus	No.	20		
3	NS	Supply, installation, testing and commissioning of 32 channel DVR. with Hard Disck, for 30 days recording Impulse/Hikvision/Tyco/Pelco/Honeywell	No.	2		

		1				
4	NS	Supply, installation, testing and commissioning two video outputs & 32" totally flat colour LCD monitor Panasonic/LG/Samsung	No.	2		
6	NS	Supply installation commisioning and testing of 1 TB Hard Disck, for 30 days recording	No.	5		
7	NS	Supply installation testing and commissioning of 10 Channel power supply Reputed Make	No.	7		
9	NS	Supply installation testing and commissioning of BNC Connectors/Power Connectors etc. Consumable itesms Reputed Make	Lot	32		
10	H:02:00	Supplying and fixing of the following size of FRLS PVC conduit along with the accessories in surface/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recess, conduit as required				
	H:02:02	25mm dia FRLS PVC conduit pipe	RM	1200		

PA and EPABX

(AS PER MPWD 2016)

S. NO	SSR NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	NSR					
A	PA SYSTEM					

1	NSR	Supply of 250 watt ,AC 220-240 V, amplifier with all necessary cable as required (Ahuja SSA-160 or equivalent)	EA CH	2		
2	NSR	Supply of Paging Microphone (Corded)	EA CH	2		
3	NSR	Supply of Microphone (Corded Mic) (Ahuja/Sony/or Equivalent)	EA CH	2		
4	NSR	Supply of Microphone (Cordless Mic) (Ahuja/Sony/or Equivalent)	EA CH	2		
5	NSR	Supply of Speaker (Box)32 watt (Ahuja/Sony/or Equivalent)	EA CH	8		
6	NSR	Horn speaker 40 watt (Ahuja/Sony/or Equivalent)	EA CH	2		
7	NSR	2.5 sq. mm connecting wire (double core copper conductor)	RM	140		
B	EPBAX SYSTE M					
8	NSR	Supply installation testing and commissioning of Star model, 50 lines, EPABX Compact 832 Technology Microcontroller based stored programme control techniques CMOS cross point switching Longitudinal balance 60db Extn. Loop resistance 600 ohms Insertion Loss a) Extn. to Extn. Less than 2 db at 1 KHz b) Extn. to P&T line Less than 1 db at 1 KHz Dial Speed 10 +/- 0.5 PPS Cross talk attenuation Not less than -70 db Break ratio 33:66 Input Power 230 VC +/- 10% 50 Hz Cabling Single pair Ambient conditions 0 to 45° C, 95% RH (Non condensing) UPS Inbuilt (without batteries)	EA CH	1		
9	NSR	Operator Console	EA CH	1		
10	NSR	Land line telephone corded complete all as per BEETAL M59/ or equivalent white/black	EA CH	50		
	MPWD 2016					

11	C:04:08	Wiring in Parallel system with PVC Insulated Telephone cables for indoor applications confirming to TEC specification G/WIR06/02 running inside PVC Casing & Capping pipe Grade-II 20mm dia' fixed, surface in the wall/ceiling/floor as per convenience including junction box having required numbers of ways Main to Sub-Main/DB, Sub-main/DB to SDB/Switch boards/SDB to switch boards as required:-				
	C:04:08(D)	0.5mm Four pairs un armoured Telephone cable Indoor type	RM	215		
	C:04:08(E)	0.5mm Five pairs un armoured Telephone cable Indoor type	RM	220		
	C:04:08(F)	0.5mm ten pairs un armoured Telephone cable Indoor type	RM	145		
	C:04:08(G)	0.5mm Twenty pairs un armoured Telephone cable Indoor type	RM	220		
	O:08:04	Telephone & EPABX Junction Boxes 20 Pairs with Krone connector	EA CH	1		
	O:08:03	Telephone & EPABX Junction Boxes 20 Pairs with connector	EA CH	1		
	O:08:07	Telephone & EPABX Junction Boxes 50 Pair with connector	EA CH	1		
	O:08:08	Telephone & EPABX Junction Boxes 50 Pairs with Krone connector	EA CH	1		
	O:08:10	Telephone & EPABX Junction Boxes 100 Pairs with Krone connector	EA CH	1		

FIRE FIGHTING

A. SITC OF ADDRESSABLE FIRE ALARM SYSTEM						
S.No.	Reference	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
1	NSR	Supply & installation /testing / commissioning Analogue Addressable Intelligent Fire alarm control panel, 4 Loop, provision to make with a minimum capacity of 250Nos per loop, with battery back up for 6 Hrs during normal operation and 15 minutes alarm operation, with minimum 160 Character LCD display, necessary interface card to connect a repeater panel and all	No	1		

		hardware & software as per specification.				
2	NSR	Supply & installation /testing / commisioning Analog Addressable Smoke Detector(below) with programmable for timed automatic sensitivity selection with Standard base and other accessories as required.	No	60		
3	NSR	Supply & installation /testing / commisioning Analog Addressable Mutli Sensor Detector (Above) with programmable for timed automatic sensitivity selection with Standard base and other accessories as required.	No	60		
4	NSR	Supply Installation of heat detector with base, Junction box and other accessories as required,	No	60		
5	NSR	Supply & installation /testing / commisioning SITC of Response indicator	No	11		
6	NSR	Supply & installation /testing / commisioning Analogue Addressable Fault isolator module capable of monitoring shorted loop circuit and automatically restore communications when shorted conditions are corrected. (FIM's are used for every 20 detectors/devices)	No	11		
7	NSR	Supply & installation /testing / commisioning Analogue Addressable Monitor module operating at 24V DC, 2A, rated at 230V, provided with DPDT contact.	No	2		

8	NSR	Supply & installation /testing / commisioning Addressable Electronic Hooter cum Strobe ceiling mounted. The hooters shall be made of ABS plastic, and have a DB level of 65dbA and a multi tone facility. Addressable Control Module shall be fitted in a junction box.	No	22		
9	NSR	Supply & installation /testing / commisioning Addressable Manual call point having an integrally mounted addressable module that monitors and reports contact status. (PULL TYPE)	No	4		
10	NSR	Supply & installation /testing / commisioning Supply and Laying of 2C X 1.5Sq.mm FRLS CU. Ar Cable	Rmt	700		
B.FIRE EXTINGUISHER						
1	NSR	Supply & Fixing of 4.5Kg, CO2 Type Fire Extinguisher, Trolley Mounted, Easy Weight Management, Used Unused Mechanism, Squeeze Grip, Gross Weight 19.1 Kg, Empty Weight 14.6 Kg, Can Height 860MM, Diameter 140MM, Discharge time minimum 13 Secs, Controllable discharge mechanism, Range minimum 2 Meters, Applicable on Class B,C & electrically started Fire, B Rating 13B, Can construction : Hot Spinning / Forging, Valve Construction : Forging & Machining, Internal Coating of Can : Not Applicable, External Coating of Can : Spray Painting, Sheet metal thickness : 4.5MM, ISI & CE Approved, 2 Year Warranty Including transportation, all taxes and all labour charges etc complete. Makes : Safex / Kenex / Bharat /	Nos	11		

		Reliance				
2	NSR	<p>Supply and fixing of ABC Powder MAP 4 Kg Fire extinguisher Mono ammonium phosphate power 90, stored pressure type, IS 15683 : 2006, pressure gauge gross wt. 6.9 kg, empty wt.2.9 kg, can Ht.440mm, Diameter 140mm, Discharge time less than 13 sec, controllable discharge mechanism, range min. 4 mts applicable on classes A,B, C & electrically started fires, A- rating 3A, B-rating 34B, can construction: Deep drawn Co2 mig welding, wall construction: Forging & Machining, internal coating of can: Epoxy power coating, External coating of Can:Epoxy polyester powder coating, sheet metal thickness:1.60mm, Helium leakage detection tested, ISI & CE approved with 5 years warranty (Cease Fire / Minimax make) Including transportation,all taxes and all labour charges etc complete. Makes : Safex / Kenex / Bharat / Reliance</p>	Nos	11		

3	NSR	Supply and fixing of 4Nos of 9 Ltrs capacity round bottom bucket with sand, duly painted with enamel white inside & red outside and letter FIRE with black colour.	Nos	8		
4	NSR	Supply anmd fixing of Fire bucket stand fabricated by M.S. angles to install for two numbers of buckets as per local fire officers standards.	Nos	11		

Price Schedule

Lot 4: Repair and Renovation of Civil Hospital, Lunglei

Lot	Description	Amount in INR (in figures)	Amount in INR (words)
Lot 4	Repair and Renovation of District Hospital, Lunglei		

Works requirements for Civil Hospital Lunglei

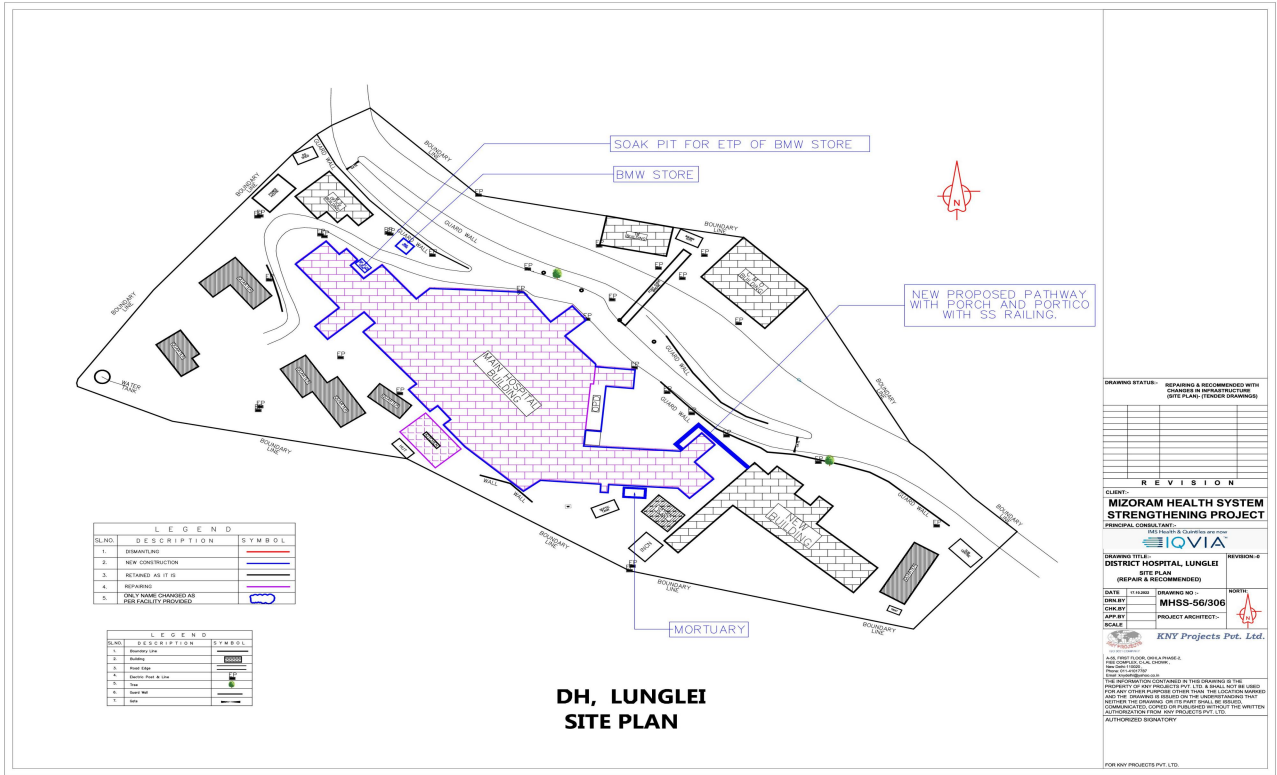
Scope of Work

Civil Hospital at Lunglei is located in the heart of Lunglei city and is spread over 7 acres of land area. The hospital was built in stages from 1998 onwards. It was initially planned for 170 beds and now has 150 functional beds.

The Lunglei civil hospital campus consists of 13 buildings and their area statement is as under-

SN	Building Name	Ground Effected Area	Remarks
1	Main Building	2850	Building proposed to be repaired and renovated
2	MS OFC Building	143	Building proposed to be repaired and renovated
3	Kitchen	111	Building proposed to be repaired and renovated
4	Mortuary	18.5	New building proposed to be constructed under the contract
5	Emergency Block (Under construction currently)	596	
6	Staff Quarters- 01	112	
7	Staff Quarters- 02	72	
8	Staff Quarters- 03	160	
9	Staff Quarters- 04	46.5	
10	Staff Quarters- 05	112	
11	PSA Plant	54.3	
12	TB Building	139	
13	CMO Building	326	
		4740.30	

Layout:



Presently the hospital has following functional departments-

- General Surgery
- General Medicine
- Obstetrics and Gynaecology
- Paediatrics
- Orthopaedics
- Dermatology
- Anaesthesia
- ENT
- Ophthalmology
- Blood bank,
- Pathology
- Microbiology
- Oncology
- Radiology
- Dental Surgery
- Psychiatry
- AYUSH

The following departments are additionally proposed to be added after the renovation of work

<u>The following table presents the summary of repairs and renovation works to be undertaken in the three existing buildings</u> Name of the Building	Built up area (in sqm)	Floor	Location	Department
Main Hospital Building	10309.32	4	Near CMO Building, Main Lunglei road	OPD Department, Emergency department, Radiology department, PMJAY HEALTH CARE, Paediatric ward, Psychiatry ward, Gynae ward, OT Complex, Surgery ward, Orthopedic ward, Blood bank, Dialysis Unit, Labour room, SNCU, Laboratory complex, Geriatric ward, Ophthalmology Complex, EYE & ENT ward, Covid ward
MS OFC Building	164.58	2	Right side of main hospital building	SMO Office, Account section, Record room
Kitchen	197.84	2	Back side of main hospital building	Kitchen

The following buildings are to be newly constructed

1.	Mortuary	12.00 Sq.M	New building proposed to be constructed under the contract
2.	BMW Storage room	15.00 Sq.M	New building proposed to be constructed under the contract



seepage on ceiling & walls in toilets.



seepage on ceiling & all walls in toilet complex



Brick work of toilets damaged in toilet complex orthopedic ward at second floor



water leakage from drainage pipes near

The followings tables indicate the works to be undertaken functional of building. Contractor coordinate to hospital superintendent and prepare a plan on the sequence of work to be done based on the hospital superintendent recommendations. The work to start only after shifting of equipment and patients from room and to be signed off by concerned authority. That the area is ready for repair and renovation. During the construction activity to avoid safety reasons. The area where repair and renovations to be undertaken should sealed of completely caution tape and green cloth in the work premises and sign boards are to be provide mentioning the area of the work to caution the people to avoid those areas.

Proposed changes and repairs in the buildings under the Lunglei civil hospital

S. No	Department	Proposed Changes	Drawing No.
1	Hospital Exterior	Repair of Ramp and provision of railing at the entrance of building along with slip resistant surface at entrance of OPD, IPD, Emergency Department.	Drawing no.56/301
2	Emergency	Repair of toilet and provision of grab bars and handrails to make the toilet as a disabled friendly toilet	Drawing no.56/201-204
3	OPD	Provision of sink for handwashing in OPD chambers	Drawing no.56/201-204 Drawing no.56/301
		Provision of drinking water point with water cooler	
		Conversion of one toilet as disabled friendly	
		Demarcated trolley and wheelchair bay to be earmarked in OPD area.	
4	OT	Repair of existing OT being used as a Store to be used as Emergency OT	Drawing no.56/209-212 and 56/303
		Repair of Scrub Station to avoid splashing with increase depth of the sink	
		Provision of toilet in recovery room for the patients	
		Endoscopy room – elbow	

S. No	Department	Proposed Changes	Drawing No.
		operated tap to be provided instead of normal tap in Endoscopy Centre	
5	Wards	Disabled friendly toilets on each floor by modifying one of the existing toilets Provision of hot water in toilets and wards either through geyser or solar heater	Drawing no.56/201-216
6	Mortuary	Mortuary to be reconstructed with a proper cabinet for keeping dead body in behind the OPD block	Drawing no.: MHSS-56
7	Pharmacy	Additional racks to store drugs and items and sink with taps along the wall to be removed.	Drawing no.56/205-208
8	CSSD	Existing CSSD in ground floor is proposed to be restructured as collection area, washing area, sterilization area and distribution area to avoid mixing of sterile and unsterile items as shown in the revised drawings	Drawing no.56/201-204 and 56/301
9	BMW storage room	Proposed Bio medical waste storage room	Drawing no.: MHSS-56
10	Electrical	New electrical inventories is proposed that needs to be replaced with the damaged one CCTV Camera is to be proposed for the monitoring	Drawing no.56/501-504
11	Labour Room	Modification of labour room complex with removal of one window and construction of toilet in open corridor at the backside.	Drawing no.56/201-204 and 56/302

S. No	Department	Proposed Changes	Drawing No.
		<p>Proposed conversion of storeroom next to labour room to the additional ANC/PNC wards and SNCU mothers' room further extending to corridor between storeroom and existing mother's room.</p> <p>Provision of toilet in Eclampsia room in the open corridor at the backside</p> <p>Additional wall is proposed near the labour room in the corridor to maintain the separation between labour room complex and proposed ANC/PNC wards</p>	
12	SNCU/ICU	<p>Modification of existing patient waiting area in OT complex as a 2 bedded ICU along with attached toilet and nursing station</p> <p>Provision of Inborn and out born SNCU in the existing SNCU complex and shifting of DEO room to outside Nurse room and converting the DEO room to change room</p> <p>Elbow operated tap to be provided in handwashing station in SNCU instead of normal tap</p>	Drawing no.56/201-204 and 56/302-303
13	Hospital Building, Administrative Block, Kitchen.	<ul style="list-style-type: none"> • Repair considered wherever required <ul style="list-style-type: none"> ○ Seepage ○ Crack repair and Plastering ○ Flooring ○ Painting ○ Water proofing 	Drawing no.56/201-230 and 56/301-305

**Civil Works
(AS PER MPWD 2019)**

S.No	MPWD 2019	Description of Items	Unit	Quantity	Rate	Amount
1	2.07	Earthwork in excavation in foundation trenches or drains etc. (not exceeding 1.5m in width or 10sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5m including getting out excavated soil and disposal of surplus excavated soil as directed within a lead of 50 metres.				
	(b)	Hard Soil (<i>pick work</i>)	Cum	51.55		
2	2.17	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	Cum	24.25		
3	4.02	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work upto plinth level:				
	(a)	1:2:4 (1 cement :2 course sand :4 stone aggregate 20mm nominal size)				
		Details of Cost for 1.00 cum	Cum	46.33		

4	4.07	Providing and laying cement concrete in retaining wall, return walls, walls (any thickness) including pilasters, piers, columns, abutments, pillars, posts, plain window sills, sunken floors, etc. up to floor five level excluding the cost of centering, shuttering and finishing :				
	(a)	1 : 2: 4(1 cement : 2course sand : 4 stone aggregate 20mm)	Cum	158.24		
5	5.01	Providing and laying in position reinforced cement concrete excluding cost of centering and shuttering , finishing and reinforcement in -				
		All work upto plinth level :				
	(a)	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)	Cum	11.76		
6	5.02	Reinforced cement concrete work in walls including attached pilasters, columns, pillars, posts, piers, abutments, return walls, retaining walls, struts, buttresses, string or lacing courses, fillets etc. upto floor five level excluding cost of centering shuttering etc complete.				
	(a)	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)	Cum	3.77		

7	5.03	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement complete.				
	(a)	1:1.5:3 (1 Cement:1.5 Coarse Sand:3 graded Stone aggregate 20 mm nominal size.)	Cum	8.81		
8	5.10	Centering and shuttering including strutting, propping etc. and removal of form for all heights :				
	(a)	Foundations, footings, bases of columns etc. for mass concrete.	sqm	33.76		
	(c)	Columns, pillars, piers, abutments, posts and struts.	Sqm	69.12		
	(d)	Lintels, beams, plinth beams, girders, bressumers and cantilevers, etc.	sqm	70.89		
	(e)	Suspended floors, roofs, landings, shelves and their support, balconies and chajjaj,etc.	Sqm	42.42		
9	5.18	Steel reinforcement for RCC work including straightening, cutting, bending, placing in position and binding all complete.				
	(b)	Thermo-Mechanically Treated bars of grade Fe-500 or more.	kg	4580.25		

10	6.01	First class brickwork in foundation and plinth in :				
	(c)	in cement mortar 1: 6 (1 cement : 6 coarse sand)	<i>cum</i>	7.45		
11	6.06	Half brick masonry with first class brick in superstructure above plinth level upto floor V level.				
	(b)	in cement mortar 1 : 4 (1 cement : 4coarse sand)	<i>Sqm</i>	266.04		
12	8.02	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations, of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels.				
	(d)	Granite (galaxy black)	<i>Sqm</i>	6.90		
13	9.06	Providing Ist class local wood dressed in frames of chaukat for doors, windows, clerestory windows fixed in position.	<i>cum</i>	0.18		
14	9.11	Providing and fixing 1st class local wood panelled shutters for doors etc. including M.S. butt hinges with necessary screws, etc. complete.				

	(b)	35 mm thick.	<i>sqm</i>	23.84		
15	9.55	<p>Providing and fixing factory made PVC door frame made of PVC extruded section (Chaukhat) having overall dimension of 48x40 mm (tolerance + 1 mm) with wall thickness 2.0 mm + 0.2 mm, corners of the door frame to be mitred and joined by means of plastic/M.S. galvanized brackets and stainless steel screws. The hinge side vertical of the frames reinforced by galvanised M.S. tube of size 19x19 mm and 1 mm + 0.1 mm wall thickness and 3 Nos. stainless steel hinges fixed to the frame complete as per manufacturers specification and direction of Engineer-in-charge. (Sintex, Plasopan or equivalent) :</p>	<i>Rmt</i>	87.00		

16	9.56	<p>Factory made PVC door shutters made of styles and rails of a uPVC hollow section of size 59x24 mm and wall thickness 2 mm (± 0.2 mm) with inbuilt edging on both sides. The styles and rails mitred and joint at the corners by means of M.S. galvanised/ plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 20x20 mm and 1 mm (± 0.1 mm) wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x24 mm and 2 mm (± 0.2 mm) wall thickness, fixed to the shutter styles by means of plastic/galvanised M.S. 'U' cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm (± 0.1 mm) wall thickness. The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in-charge. (For W.C. and bathroom door shutter) (Sintex, Plasopan or equivalent).</p>			
	(b)	30mm thick shutter	<i>Sqm</i>	42.11	

17	10.07	Structural steel work rivetted, bolted welded in built up sections, trusses and framed works, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete. (In Tees, R.S. Joists, Angles, Flats and Channels.)	<i>kg</i>	805.31		
18	10.20	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of 80cm high in staircase, etc consisting of 75mm for rail and post, 63mm for longitudinal intermediate rail and 25mm of vertical section, spacing 125mm interval and as per approval of Engineer-in-charge.	<i>sqm</i>	30.10		

19	11.03	<p>Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular and other sections of approved make conforming to IS: 733 and IS : 1285, anodised transparent or dyed to required shade according to IS : 1868. (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips, or with expansion hold fastners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and paneling to be paid for separately). For fixed portion.</p>				
	(b)	Anodised	Sqm	69.50		
20	11.04	<p>For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required. (Glazing to be paid for</p>				

		separately)				
	(b)	Anodised	<i>Sqm</i>	34.56		
21	11.05	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge .				
	(a)	With glass panes of 4.0 mm thickness.	<i>Sqm</i>	30.42		
	(d)	Frosted glass of 4.00 mm thickness.	<i>Sqm</i>	7.29		
22	11.06	Providing and fixing 12mm thick prelaminated three layer medium density (exterior grade) particle board Grade I, Type II conforming to IS : 12823 bonded with phenol formaldehyde synthetic resin, of approved brand and manufacture in paneling fixed in aluminium doors, windows shutters and partition frames with C.P. brass/ stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.				
	(a)	Pre-laminated particle board with decorative lamination on one side and balancing lamination on other side.	<i>Sqm</i>	40.25		

23	11.07	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS : 6315 marked, Hardwyn make (model 3000) or equivalent for doors including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge .				
	(a)	With stainless steel cover plate	<i>no</i>	2.00		
24	11.11	Filling the gap in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete. Upto 5mm depth and 5 mm width.	<i>rm</i>	245.60		
25	12.09	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).				
	(C)	Dark shade using ordinary cement	<i>sqm</i>	165.65		

26	12.11	Providing and Fixing ceramic glazed floor tiles of size 300x300mm or more (thickness to be specified by the manufacturer) of 1st quality conforming to IS: 15622 of approved make in all colours,shades, except white,ivory,grey,fume red brown, laid on 20mm thick cement mortar 1 : 4 (1cement : 4 course sand) including pointing the joints with white cement and matching pigments etc. complete. as per designed colour.				
	(b)	Matt/Antiscratch	Sqm	151.30		
27	12.12	Providing & laying vitrified floor tiles in different sizes (thickness to be specified by the manufacture) with water absorption less than 0.08% and conforming to IS:15622,of approved make, in all colours and shades, laid on bed of 20mm thick cement mortar 1 : 4 (1cement:4course sand), including the joints with white cement and matching pigments etc.complete.as per design collours.				
	(b)	Nano tech (Single charge)	Sqm	497.99		
	(c)	Double charge	Sqm	24.71		
28	12.14	Providing & laying vitrified floor tiles in different sizes (thickness to be specified by the manufacture) with water absorption less than 0.08% and conforming to IS:15622,of approved make, in all colours and shades, in				

		skirting/dado, riser of steps, over 12mm thick bed of cement mortar 1:3 (1cement:3course sand), including the joints with white cement and matching pigments etc.complete.				
	(c)	Double charge	<i>Sqm</i>	55.65		
29	12.17	Grouting the jounts of flooring tiles having joints of 3 mm width using epoxy grout mix of 0.70 kg of organic coated filler of desired shade(0.10kg of hardener and 0.20 kg of resin per kg) grouting and finishing complete as per direction of Engineer-in-charge.	<i>Sqm</i>	117.48		
30	12.19	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to e specified by the manufacaturer),of approved make, in all colours, shades wxcept burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12mm thick bed of cemunt mortar 1:3 (1cemeny :3 coarse sand) and jointing with cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	<i>Sqm</i>	203.50		
31	14.37	Providing and fixing 150 mm bright finished brass floor door stopper with rubber cushion, screws , etc. to suite	<i>no</i>	2.00		

		shutter thickness complete.				
32	14.38	Providing and fixing bright finished Brass Door Closer with necessary screws , etc. complete.				
	(a)	Hydraulic Type	<i>no</i>	2.00		
33	14.48	Providing and fixing CP brass handles with necessary screws , etc. complete				
	(a)	250 mm	<i>no</i>	22.00		
34	14.50	Providing and fixing aluminium sliding door bolts (aldrops) anodised transparent or dyed to required colour or shade with nuts and screws etc. complete.				
	(b)	250 x 16 mm	<i>no</i>	13.00		
35	14.51	Providing and fixing Aluminium Tower Bolts (Socket B olts) anodised transparent or dyed to required colour or shade with necessary screws etc. complete.				
	(c)	150 mm	<i>no</i>	22.00		
36	14.52	Providing and fixing aluminium handles anodised transparent or dyed to required colour or shade with necessary screws, etc. complete				
	(a)	125 mm	<i>no</i>	22.00		
37	15.36	Supplying, fitting and fixing PVC board ceiling with necessary screws etc. complete excluding frame	<i>sqm</i>	17.50		

		work of base and beading.				
38	16.01	Providing corrugated G.S. sheet roofing fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead and including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (upto a pitch of 60 degrees) excluding the cost of purlins, rafters and trusses. .				
	(a)	0.80 mm thick with zinc coating not less than 275gm/m ²	<i>sqm</i>	108.00		
39	16.07	Providing and fixing 15 cm wide 45 cm over all semi circular plain G.S. sheet gutter with iron brackets 40x3mm size, bolts, nuts and washers etc. including making necessary connections with rain water pipes complete.				
	(a)	0.80 mm thick with zinc coating not less than 275gm/m ²	<i>rm</i>	55.00		
40	39/17.01	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm uPVC P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to				

		IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:				
	(a)	Orrisa pan with integral type foot rests				
	(i)	White	<i>no</i>	5.00		
41	17.03	Providing and fixing low level P.V.C. flushing cistern of Parryware/Hindware/Cera and equivalent make with fittings complete.				
	(i)	10 litres-white	<i>no</i>	4.00		
42	17.04	Providing and fixing vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern , including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :				
	(i)	White	<i>no</i>	19.00		
43	17.08	Providing and fixing White vitreous china (Matrix Set - 1) WB 65 x 35 with one pair mounting brackets , EWC & Cistern complete with fittings & seat cover, one no hinged rail 76 cm and five nos of grab rails 60 cm , with all fittings and fixtures complete, including cutting and making good the walls	<i>no</i>	4.00		

		and floors wherever required :				
44	17.10	Providing and fixing solid plastic Seat Cover and lid for pedestal type W.C. pan with C.P. brass hinges, rubber buffers, etc. complete.				
	(i)	White	<i>each</i>	11.00		
45	17.15	Providing and fixing Health faucet with flexible tube upto 1 metre long and holder of quality and make as approved by Engineer - in - charge..	<i>no</i>	31.00		
46	17.16	Providing and fixing White vitreous china wash basin Standard of Parryware/ Hindware/ Cera and equivalent make with R.S. or C.I. brackets, 15mm C.P. brass pillar taps, C.P. brass chain with rubber plugs, 32mm C.P. brass waste of standard pattern, 32mm C.P. brass traps and union complete including painting of fittings and brackets, cutting and making good the walls wherever required.				
	(a)	Vitreous China Wash basin size 630x450 mm with single 15 mm C.P. brass pillar taps				
	(i)	White	<i>no</i>	22.00		
	(b)	Vitreous China Wash basin Compact 450 x 300 mm with single 15 mm C.P.				

		brass pillar taps				
	(i)	White	<i>no</i>	1.00		
47	17.22	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P brass waste and 40mm C.P.brass trap with necessary C.P. brass unions complete, including painting of fittings and brackets, cutting and making good the wall wherever required :				
	(b)	Size 600x450x200mm	<i>no</i>	5.00		
48	17.24	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :	<i>no</i>	22.00		
49	17.33	Providing and fixing on wall face SWRPVC soil, waste and vent pipes including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia.	<i>rm</i>	142.00		
	(b)	75mm dia.	<i>rm</i>	106.00		
50	17.34	Providing and fixing SWRPVC plain bend of required degree (87.50°) including jointing with rubber lubricant/cement solvent complete.				
	(a)	110 mm dia.	<i>no</i>	50.00		

	(b)	75 mm dia.	<i>no</i>	50.00		
51	17.35	Providing and fixing SWRPVC plain bend of required degree (45°) including jointing with rubber lubricant/cement solvent complete.				
	(a)	110 mm dia.	<i>no</i>	70.00		
	(b)	75 mm dia.	<i>no</i>	42.00		
52	17.36	Providing and fixing SWRPVC bend with access door of required degree including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia SWRPVC bend with access door.	<i>no</i>	14.00		
	(b)	75mm dia SWRPVC bend with access door.	<i>no</i>	14.00		
53	17.37	Providing and fixing single equal SWRPVC plain junction of required degree (T-junction) .				
	(a)	110x110x110mm.	<i>no</i>	28.00		
	(b)	75x75x75mm.	<i>no</i>	28.00		
54	17.41	Providing and fixing SWRPVC socket including jointing with rubber lubricant/cement solvent.				
	(a)	110mm dia socket.	<i>no</i>	84.00		
	(b)	75 mm dia socket.	<i>no</i>	42.00		
55	17.44	Providing and fixing 125/110 S-trap SWRPVC including jointing with rubber lubricant/ solvent cement.	<i>no</i>	14.00		

56	17.45	Providing and fixing uPVC multi floor trap with floor trap grating including jointing with rubber lubricant/ solvent cement complete.	<i>no</i>	66.00		
57	18.01	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.				
	(a)	Sintex or equivalent	<i>liter</i>	32000.00		
58	18.07	Providing and fixing brass bib cock of approved quality.				
	(a)	15mm nominal bore	<i>no</i>	20.00		
59	18.14	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :				
	(a)	15mm nominal bore	<i>no</i>	30.00		
60	18.16	Providing and fixing 15 mm nominal bore C.P. brass angle stop cock for basin mixer and geyser points of approved quality conforming to IS:8931 .				
	(b)	Class-II	<i>no</i>	48.00		

61	18.29	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes , having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
	(a)	15mm dia nominal bore.	<i>rm</i>	215.00		
	(b)	20mm dia nominal bore.	<i>rm</i>	259.00		
	(c)	25mm dia nominal bore.	<i>rm</i>	50.00		
62	18.32	Making connection of CPVC pipes distribution branch by providing and fixing equal Tee with jointing , testing complete including cutting and making good etc.				
	(a)	15mm dia nominal bore.	<i>no</i>	62.00		
	(b)	20mm dia nominal bore.	<i>no</i>	48.00		
63	62/18.36	Making connection of Astral CPVC pipes distribution branch by providing and fixing Elbow 90° with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	<i>no</i>	90.00		
	(b)	20mm dia.	<i>no</i>	90.00		

64	18.37	Making connection of Astral CPVC pipes distribution branch by providing and fixing Elbow 45° with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	<i>no</i>	42.00		
	(b)	20mm dia.	<i>no</i>	42.00		
65	18.43	Making connection of Astral CPVC pipes distribution branch by providing and fixing Female Adaptor (Brass) with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	<i>no</i>	70.00		
66	18.44	Making connection of Astral CPVC pipes distribution branch by providing and fixing Socket/Coupling with jointing, testing complete including cutting and making good etc.				
	(b)	20mm dia.	<i>no</i>	98.00		
67	18.45	Making connection of Astral CPVC pipes distribution branch by providing and fixing Reducer Coupling with jointing, testing complete including cutting and making good etc.				
	(b)	20 x 15mm	<i>no</i>	28.00		
68	19.02	Applying double coated cement slurry with water proofing chemical (SUPER latex chemical) in proportion 1 : 4 :7 (1 latex : 4 water :7 cement) including cleaning the treated surfaces with brushes etc.@ 0.158kg/sqm .	<i>Sqm</i>	2063.69		

69	19.04	Providing and mixing water proofing chemical (PIDIPROOF POWDER chemical) in plain and reinforced cement concrete work 1 : 2 : 4 , @1.0% by weight of cement.	Cum	158.24		
70	19.19	Extra for providing and mixing water proofing chemical (latex or equivalent chemical) @ 2kg per bag of cement in -				
	(d)	15mm cement plaster 1 : 4 (<i>1 cement : 4 sand</i>).	Sqm	376.94		
71	20.08	12mm cement plaster 1 : 4 (<i>1 cement : 4 fine sand</i>).	Sqm	1681.57		
72	20.12	15mm cement plaster 1 : 4 (<i>1 cement : 4 fine sand</i>).	Sqm	2643.25		
73	20.25	6mm cement plaster to ceiling 1 : 3 (<i>1 cement : 3 fine sand</i>)	Sqm	216.42		
74	20.47	White washing with lime to give an even shade : New work (three or more coats)	Sqm	36.00		
75	20.66	Distemping with oil bound washable distemper of approved brand and manufacture to give an even shade: New work (one or more coats)	Sqm	241.52		
76	20.72	Painting with synthetic enamel paint of approved brand and manufacture in all shades on new work (<i>two or more coats</i>).				
	(a)	General quality	Sqm	577.64		

77	20.73	Wall painting with interior emulsion paint of approved brand and manufacture on new work (<i>two or more coats</i>) to give an even shade.				
	(b)	Premium interior emulsion like Velvet touch Luxol silk etc.	<i>Sqm</i>	1647.80		
78	20.75	Finishing walls with exterior emulsion of required shade on new work (<i>three or more coats</i>) to give an even shade.				
	(b)	Premium exterior emulsion like weather shield, weathercote etc.	<i>Sqm</i>	2460.60		
79	23.02	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	<i>Sqm</i>	15115.56		
80	23.03	Repairs to plaster of thickness 12mm to 20mm in patches of area 2.5 sq. metres and under including cutting the patch in proper shape and preparing and plastering the surface of the walls complete including disposal of rubbish to the dumping ground within 50 metres lead :				
	(a)	With cement mortar 1:3 (1 cement : 3 fine sand)	<i>Sqm</i>	45.00		
	(b)	With cement mortar 1:4 (1 cement : 4 coarse sand)	<i>Sqm</i>	284.63		

81	23.04	Fixing chowkhats in existing opening including embedding chowkhats in floors or walls cutting masonry for holdfasts embedding hold fasts in cement concrete blocks with cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) painting two coats of coal tar to sides of chowkhats and making good the damages to walls and floors as required complete including disposal of rubbish to the dumping ground within 50 metres lead :				
	(a)	Door chowkhats	<i>no</i>	4.00		
82	23.05	Making the opening in brick masonry including dismantling in floor or walls by cutting masonry and making good the damages to walls, flooring and jambs complete , to match existing surface i/c disposal of mulba/ rubbish to the nearest municipal dumping ground, all complete as per direction of Engineer-in-Charge	<i>Sqm</i>	4.73		
83	23.08	Renewing glass panes and refixing existing wooden fillets:				
	(a)	Glass panes of thickness 4mm	<i>Sqm</i>	3.39		
84	23.40	White washing with lime to give an even shade :				
	(a)	Old work (two or more coats)	<i>Sqm</i>	513.48		

85	23.44	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade : Old work (one or more coats)	<i>Sqm</i>	3097.73		
86	23.52	Wall painting with interior emulsion paint of approved brand and manufacture on old work (<i>one or more coats</i>) to give an even shade.				
	(b)	Premium interior emulsion like Velvet touch luxol silk etc.	<i>Sqm</i>	6892.20		
87	23.53	Finishing walls with regular exterior emulsion of required shade on old work (three or more coats) to give an even shade.				
	(b)	Premium exterior emulsion like weathercote, weather shield etc.	<i>Sqm</i>	5092.51		
88	24.01	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.				
	(a)	Nominal concrete 1:3:6 Or richer mix .	<i>Cum</i>	35.86		
89	24.02	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in-charge.	<i>Cum</i>	0.84		

90	24.06	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead:				
	(a)	In cement mortar	<i>Cum</i>	5.51		
91	24.11	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead :				
	(a)	Of area 3 sq. metres and below	<i>no</i>	17.00		
92	24.12	Taking out doors, windows and clerestory window shutters (steel or wood) including stacking within 50 metres lead:				
	(a)	Of area 3 sq. metres and below	<i>no</i>	12.00		
93	24.22	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
	(a)	For thickness of tiles 10 mm to 25 mm	<i>sqm</i>	243.95		
	(b)	For thickness of tiles 25 mm to 40 mm	<i>sqm</i>	9.00		
94	24.43	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.	<i>Sqm</i>	3788.86		

95	24.45	Dismantling W.C. Pan of all sizes including disposal of dismantled materials all complete as per directions of Engineer-in-Charge.	<i>Sqm</i>	7.45		
96	24.46	Hacking of CC flooring including cleaning for surface etc. complete as per direction of the Engineer-in-Charge.	<i>Sqm</i>	2009.53		
97	N.S.R	Providing & Inserting 12mm dia galvanised steel injection nipple in honeycomb area and along the crackline including drilling of holes required diameter (20mm to 30mm) upto a depth of 30mm to 80mm at required spacing and making the holes and cracks dust free by blowing compressed air , sealing the distance between injection nipple with the adhesive chemical of approved make and allow it to cure completely.	<i>Nos</i>	1031.845168		
98	N.S.R	Injection approved grout (SIKADUR- 55LP)in proportion recommended by the manufacturer into cracks/hony-comb area of concrete/masonry by suitable gun/pump at requird pressure including cutting of nippales after curing etc. Complete as per directions of Engineer-in-charge (Quotation by SAINKA CONSTRUCTIONS PVT LTD)	<i>Kg</i>	275.16		

		NOTE: This quantity may be vary and depend upon the site concrete quality				
99	N.S.R	Note :- Transport charges (carriage) for dumping the building waste at near by dumping yard/zone. Disposal of approx 5455 cft (building waste generated) around 5 Km from DH lunglei in 28 trip i.e. 200 cft /Trip	<i>no</i>	28.00		
100	N.S.R	Providing and fixing of expansion joint system related with floor location as per drawings and direction of Engineer-In-Charge. The joints system will be of extruded aluminum base members, self aligning / self centering arrangement and support plates etc. as per ASTM B221-02. The system shall be such that it provides floor to floor /floor to wall expansion control system for various vertical localtion in load application areas that accommodates multi directional seismic movement without stress to it's components. System shall consist of metal profiles with a universal aluminum base member designed to accommodate various project conditions and finish floor treatments. The cover plate shall be designed of width and thickness required to satisfy projects movement and loading requirements and secured to base members by utilizing manufacturer's pre-engineered self- centering arrangement that freely				

		rotates / moves in all directions. The Self - centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. Provision of Moisture Barrier Membrane in the Joint System to have watertight joint is mandatory requirement all as per the manufactures design and as approved by Engineer -in- Charge. (Material shall confirm to ASTM 6063).				
	N.S.R	Floor Joint of 100 mm gap	<i>metre</i>	288.00		
101	N.S.R	Providing and fixing of expansion joint system related with wall joint (internal/external) location as per drawings and direction of Engineer-In- Charge. The joints shall be of extruded aluminum base members, self aligning / centering arrangement and support plates as per ASTM B221-02. The material shall be such that it provides an Expansion Joints System suitable for vertical wall to wall/ wall to corner application, both new and existing construction in office Buildings & complexes with no slipping down tendency amongst the components of the Joint System. The Joint System shall utilize light weight aluminum profiles exhibiting				

		minimal exposed aluminum surfaces mechanically snap locking the multicellular to facilitate movement. (Material shall confirm to ASTM 6063).				
		Wall Joint of 100 mm gap	<i>metre</i>	360.00		
102	N.S.R	Providing and fixing of expansion joint system of approved make and manufactures for various roof locations as per approved drawings and direction of Engineer-In-Charge. The joints shall be of extruded aluminum base members with, self aligning and self centering arrangement support plates asper ASTM B221-02. The system shall be such that it provides watertight roof to roof/roof to corner joint cover expansion control system that is capable of accommodating multidirectional seismic movement without stress to its components. System shall consist of metal profile that incorporates a universal aluminum base member designed to accommodate various project conditions and roof treatments. The cover plate shall be designed of width and thickness				

		<p>required to satisfy movement and loading requirements and secured to base members by utilizing manufacturer's pre-engineered self-centering arrangement that freely rotates / moves in all directions. The Self centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. The Joint System shall resist damage or deterioration from the impact of falling ice, exposure to UV, airborne contaminants and occasional foot traffic from maintenance personnel. Provision of Moisture Barrier Membrane in the Joint System to have water tight joint is mandatory requirement. (Material shall conform to ASTM 6063).</p>				
		Roof Joint of 100 mm gap	<i>metre</i>	72.00		
103	N.S.R	<p>Providing and fixing factory made solid Wood Polymer Composite (WPC) single extruded Door Frame section of size with encapsulation of 8MM rigid layer on all the six surfaces. The door frame will have a rebat of 32MM. Door Frame section of 63.5x100 MM .The two Vertical members are to be joined together with the horizontal member using 8x75 MM long MS Star full</p>	<i>Rmt</i>	36.00		

		thread screws to be used with reverse forward speed control hand drilling machine. The ready/assembled door frame is fixed to the wall using hold fast or bolt fasteners. A minimum of 4 No.s of screws to be provided for each vertical member & minimum 2no.s for horizontal member				
104	N.S.R	Providing and fixing 28 -30 MM thick solid Wood Polymer Composite(WPC) single extruded door shutter with 3MM top and bottom rigid layer with an overall density of 750kg/Cum. It will be fixed to the frame using 3 inch /4 inch hinges. A minimum of 4 hinges will be required for fixing the door with the frame	<i>Sqm</i>	13.86		
105	N.S.R	Diluting and injecting chemical emulsion for Pre-construction Anti-Termite Treatment with Chlorpyriphos/Lindane emulsifiable chemical 20% with 1% concentration.	<i>Sqm</i>	27.71		
106	N.S.R	Providing Diluting and injecting chemical emulsion for existing windows and doors post construction Anti-Termite Treatment Chlorpyriphos 20% EC. (Note: Spray Treatment: Spray will be applied on all windows and doors. Chemical will be injected				

		inside the cracks of windows and doors at the wall junction.)				
	(a)	Doors / Windows	<i>NO</i>	30.00		
	(b)	Providing and supply Service cost for Diluting and injecting chemical emulsion for Effected Floor areas	Sqm	900		
107	N.S.R	Chipping of unsound/weak concrete material from slabs, beams, columns etc. with manual Chisel and/ or by standard power driven percussion type or of approved make including tapering of all edges, making square shoulders of cavities including cleaning the exposed concrete surface and reinforcement with wire brushes etc. and disposal of debris for all lead and lifts all complete as per direction of Engineer-In-Charge				
		25 mm average thickness	<i>sqm</i>	412.74		
108	N.S.R	Providing, mixing and applying bonding coat of approved adhesive on chipped portion of RCC as per specifications and direction of Engineer-In-charge complete in all respect.				
		Epoxy bonding adhesive having coverage 2.20 sqm/kg of approved make	<i>sqm</i>	412.74		

109	N.S.R	<p>Providing, mixing and applying SBR polymer (of approved make) modified Cement mortar in proportion of 1:4 (1 cement: 4 graded coarse sand with polymer minimum 2% by wt. of cement used) as per specifications and directions of Engineer-in-charge. Note: Measurement and payment: The pre-measurement of thickness shall be done just after the surface preparation is completed and Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding / tapping with a blunt metal instrument and/or the 75mm size cube crushing strength at the end of 28 days to be not less than 30 N/Sqmm2).</p>				
		12 mm average thickness.	<i>sqm</i>	412.74		

ELECTRICAL

(AS PER MPWD 2016)

S. N O	MPWD 2016	DESCRIPTION	UNIT	QTY	RATE (Rs.)	AMOUNT (Rs.)
1	C:02:06	<p>Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per IS:694 (1990) and Flame retardant low smoke & Halogen (FR-LSH) 1100 voltage graded copper flexible wire stranded copper running inside PVC Casing & capping (Grade-II) of all available sizes diameter fixed, surface on the wall/ceiling/floor as per convenience including junction</p>				

		box having required numbers of ways from Main to Sub-Main/DB/Sub-Main/DB to SDB/SDB/Switch boards/SDB to switch boards as required				
	C:02:06(A)	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	rm	379		
2	E:01:00	Rewiring for light point/fan point/exhaust fan point/calling bell point with 1.5 Sqmm of PVC insulated standard copper conductor 1.5 sqmm as per IS:694 (1977) and Life shields Halogen Free Flame Retardant (HFFR) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as required:				
	E:01:01	VERY SHORT POINT	POINT	150		
3	F:11:00	Supplying and drawing the following sizes of PVC insulated standard copper conductor 1.5 sqmm as per IS:694 (1977) and Flame Retardant Low smoke & Halogen (FRLS&H) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as required:-				
i.	F:11:01	1 x 1.5 sq. mm	METRE	200		
ii.	F:11:02	2 x 1.5 sq. mm	METRE	41		
4	H:02:00	Supplying and fixing of the following size of FRLS PVC conduit along with the accessories in surface/ recess including painting in case of surface				

		conduit, or cutting the wall and making good the same in case of recess, conduit as required				
i.	H:02:01	20 mm	METRE	350		
ii.	H:02:02	25 mm	METRE	400		
5	I:03:00	Supplying and fixing of Modular switch board of the following sizes/modules on surface/recess including PVC/Steel boxes, modular plate and necessary switches, plug/socket, and fan regulators etc. with necessary painting if necessary				
i.	I:03:01	1 S	EACH	195		
ii.	I:03:03	1 S Two Ways	EACH	10		
iii.	I:03:06	1 S 16A	EACH	28		
iv.	I:03:21	1 Soc 6 Amps 3+2 or universal	EACH	93		
v.	I:03:22	1 Soc 16/6 Amps 3+3	EACH	18		
vi.	I:03:04	1 S bell push	EACH	10		
vi	I:03:08	1 R (1M)	EACH	40		
8	I:06:00	Supplying and fixing of FT metal box with Phenolic laminated/Sunmica sheet cover of the following sizes on surface/recess including necessary switches, plug/socket and fan regulators etc. with necessary painting if necessary:-				
	I:06:01	1 S	EACH	40		
i.	I:06:02	2 S	EACH	30		

ii.	I:06:03	3S	EAC H	30		
iii.	I:06:06	4S	EAC H	20		
9	J:01:30	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube/lamp etc. directly on ceiling/wall, including connections with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	EAC H	44		
10	J:01:36	Installation, testing & commissioning of ceiling fan and regulator, including wiring the downrod of standard length (upto 30cm) with 2X1.5 sqmm PVC insulated copper conductor single core cable etc, as required	EAC H	27		
11	J:01:39	Installation of Exhaust fan up-to 450 mm Sweeps in the existing opening, including making holes to suit the size of the above Exhaust fan, and making good the damage, Connection, testing and commissioning etc, as required.	EAC H	49		
12	J:01:42	Extra for fixing of the gravity louvers/shutters complete with frame for Exhaust fan of all sizes as required	EAC H	49		
13	I:02:00	Supplying and fixing of Modular switch board grade-II of the following sizes/modules on surface/recess including PVC/Steel boxes, modular plate and necessary switches, plug/socket, and fan regulators etc. with necessary painting if necessary				

	I:01:21	1 S (2M) 25A with indicator	EAC H	5		
14	N:03:00	Supplying,fitting,&fixing of 4-Ways MCB DB single door in sheet steel,Phosphatised powder painted MCB DBs with Bus Bar, Neutral link,earth bar and din rail conforms to IS:13032, IS:8623, BS:5486 240 Volts 50 Hz, on surface/recess including inter-connection,painting etc, as required				
i.	O:03:01	4-ways MCB DB SP&N SD metallic door	EAC H	6		
ii.	O:03:02	8-ways MCB DB SP&N SD metallic door	EAC H	1		
15	N:01:00	Supplying and fixing of all types and rating MCBs, RCCBs, ELCBs etc, 240/415 Volts 50Hz AC supply in the existing MCB DB complete with connections, testing & commissioningetc in completed:				
i.	N:01:01	5 to 32 Amps ,SP, MCB B- series	EAC H	35		
16	N:01:26	40 Amps' DP, MCB Isolator	EAC H	5		
	J:02:00	Installation of all kind of Electrical appliances				
17	J:02:05	Installation of Air Conditioner Split Type 1.5/2.0 in the existing wall including fixing the Hook in the wall by standard size of sleeve Nuts and bolts or Stnadard Screw for the above Air Conditioner Split type 1.5/2.0 TR, and making good the damage, connection, testing and commissioning etc, as required	EAC H	2		

18	J:01:04	Supplying,fitting and fixing Batten Holder fancy including connection etc, as required	per point	345		
19	T:04:12	Laying of one number PVC insulated and PVC sheathed/XLPE Power cables of 1.1KV grade of size exceeding 25 Sqmm but not exceeding 120 Sqmm on surface	EAC H	15		
20	MPWD	Supply of Ceiling fan 5 star rated Fusion 5* (Metallic beige-brown/pearl ivory-Gold) 1200mm sweeps (Havells/Usha/Polar/Gromton/Bajaj)	EAC H	27		
21	MPWD	Supply of Exhaust fan 300mm sweeps ISI marked (Usha/Havells/Polar/Gromton/Bajaj)	EAC H	64		
22	MPWD	4KVA Automatic Stabilizer with built-in high cut, Buzzer & Timer :Input:50VA-280V & Output:210V-240V (Venus/Indo/V-Guard/CARE)	EAC H	2		
23	NSR	Supply of 23W LED Lamp, Surface Mount. (Cat. No. LHLDDBA212R023 Base Cap - B22 Havells & equivalent)	EAC H	345		
24	NSR	Supplying of 1.5 Ton split Airconditioners(Excluding 4 KVA stabilizer) suitable or operation on AC supply single phase 50 Hz 230V with heremetically sealed conformer with air cooled condenser motor capacitor start run capacitors relay and over load protector internal unit with one indoor and one outdoor unit the condenser unit will be placed outside the room on the terrace to	EAC H	2		

		avoid noise (Make :- Carrier/ Volta/LG/Samsung/Hitachi & equivalent)				
25	NSR	Suply, Erection, insitallation and testing of high mast light (12.5 mtr pole) with six light of 200 watt each and automatic lifting facility with all complete assecesories as per requirement	EAC H	1		
26	NSR	Supply, installation, testing and commissioning of 5.5KVA - 192V Online UPS, Transformer Based Rating in VA, Watts 5.5KVA, 4.4 Kilo Watts Battery Module External Battery Module No's of Battery Required Sixteen Batteries - 16 No's Battery Type SMF - VRLA DC Voltage 192V (Make:- Microtek i-MAXX & equivalent)	EAC H	4		
	HIGH MAST (SUPPLY)					
27	NSR	Supply of 12 Mtr.high high mast with its Accessories ,Mast shall be in two section , Hot dipgalvanised and suiatable for wind velocity as per IS 875, it shall also includesaccessories for high mast including head frame , Steel wire , drum winch,Galvanised Lantencarriege arrangementsuiatable for 6 Luminaries (Make-Nezone, Volmount or equivalent)	Set	1		

28	NSR	Supply of foundation boltmanufactured from specialsteel alongwith nuts, washer anchor, plate and templates	set	1		
29	NSR	Supply of LED Flood light lenses for beeter throw of light and illumination(Make- Crompton, Heavell , Philips or equivalent)	Nos.	6		
30	NSR	Supply of LED Aviation Light	Nos.	1		
31	NSR	Supply of outdoor stand mounted Feeder pillar with 32 A TPN MCB incomer , Single dial time switch, 25 A TP contactor for automatoc switching of luminaries power tool controlwith 2 nos 9 A contractor and raise lower push button, incoming 16 Sq mm 4 core and outgoing as per requirement	Nos.	1		
32	NSR	Supply of one number of XLPE and pvc Shethed armoured alluminium power cable of 1.1 KV Grade of size, 4 x 16 Sq. MM	Mtr.	200		
	HIGH MAST (ERECTI ON)					
33	NSR	Construction of suitable shallow foundation with 1:2:4 Concrete for the high mast Considerig the safe soil bearingcapacity as at site as 10 T/sq.meter at 2 meter meter depth with all material and labour	set	1		
34	NSR	Erection of high mast with the help of suitable equipmentsand wiring of luminaries with all wiring material and labour	set	1		

35	NSR	Provision of GI Pipe earthing for high mast 2.5 mtr long 40 mm dia GI Pipe including connection to high mast earth terminal with 25x3 mm GI Flats with all material and labour	Nos.	2		
36	NSR	Erection of high mast panel on suitable foundation including all material and labour	Set	1		
37	NSR	Laying of one number XLPE insulated and PVC sheathed armoured aluminium power cable of 1.1 KV grade of size 4x 16 sq. mm conforming to IS :7098(Part I) direct in ground including excavation and refilling the trench as required	Mtr.	200		
38	NSR	HIGH MAST Transportation Upto Lunglei	km	1		

CCTV

S.No	Reference	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A.		CCTV (ANALOG VIDEO SURVEILLANCE) SYSTEM				
1	NS	Supply, installation, testing and commissioning of 2.4 Mega Pixel (HD Quality), Bullet Camera, IR Impulse/Hikvision/Tyco/Pelco/Honeywell/CP Plus	No.	5		
2	NS	Supply, installation, testing and commissioning of 2.4 Mega Pixel (HD Quality), Dome Camera, IR Impulse/Hikvision/Tyco/Pelco/Honeywell/CP Plus	No.	22		
3	NS	Supply, installation, testing and commissioning of 32 channel DVR. with Hard Disk, for 30 days recording Impulse/Hikvision/Tyco/Pelco/Honeywell	No.	5		

		I/CP Plus				
4	NS	Supply, installation, testing and commissioning two video outputs & 32" totally flat colour LCD monitor Panasonic/LG/Samsung	No.	1		
5	NS	Supply installation testing and commissioning of Cat 3+1 CCTV Copper Cable Polycab/D-Link/Kalinga/Havells/Legrand	RM	200 0		
6	NS	Supply installation commissioning and testing of 1 TB Hard Disc, for 30 days recording	No.	5		
7	NS	Supply installation testing and commissioning of 10 Channel power supply Reputed Make	No.	7		
9	NS	Supply installation testing and commissioning of BNC Connectors/Power Connectors etc. Consumable items Reputed Make	No.	54		

PA and EPABX (AS PER MPWD 2016)

S.No.	MPWD 2016	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A	PA SYSTEM					
1	NSR	Supply of 250 watt ,AC 220-240 V, amplifier with all necessary cable as required (Ahuja SSA-160 or equivalent)	EACH	2		
2	NSR	Supply of Paging Microphone (Corded)	EACH	2		

3	NSR	Supply of Microphone (Corded Mic) (Ahuja/Sony/or Equivalent)	EACH	2		
4	NSR	Supply of Microphone (Cordless Mic) (Ahuja/Sony/or Equivalent)	EACH	2		
5	NSR	Supply of Speaker (Box)32 watt (Ahuja/Sony/or Equivalent)	EACH	8		
6	NSR	Horn speaker 40 watt (Ahuja/Sony/or Equivalent)	EACH	4		
7	NSR	2.5 sq. mm connecting wire (copper)	RM	100		
B	EPBAX SYSTEM					
8	NSR	Supply installation testing and commissioning of Star model, 100 lines, EPABX Compact 832 Technology Microcontroller based stored programme control techniques CMOS cross point switching Longitudinal balance 60db Extn. Loop resistance 600 ohms Insertion Loss a) Extn. to Extn. Less than 2 db at 1 KHz b) Extn. to P&T line Less than 1 db at 1 KHz Dial Speed 10 +/- 0.5 PPS Cross talk attenuation Not less than -70 db Break ratio 33:66 Input Power 230 VC +/- 10% 50 Hz Cabling Single pair Ambient conditions 0 to 45° C, 95% RH (Non condensing) UPS Inbuilt (without batteries)	EACH	1		
9	NSR	Land line telephone corded complete all as per BEETAL M59/ or equivalent white/black	EACH	40		

10	C:04:08	Wiring in Parallel system with PVC Insulated Telephone cables for indoor applications conforming to TEC specification G/WIR06/02 running inside PVC Casing & Capping pipe Grade-II 20mm dia' fixed, surface in the wall/ceiling/floor as per convenience including junction box having required numbers of ways Main to Sub-Main/DB, Sub-main/DB to SDB/Switch boards/SDB to switch boards as required:-				
	C:04:08(D)	0.5mm Four pairs un armoured Telephone cable Indoor type	RM	275		
	C:04:08(E)	0.5mm Five pairs un armoured Telephone cable Indoor type	RM	350		
	C:04:08(F)	0.5mm ten pairs un armoured Telephone cable Indoor type	RM	375		
	C:04:08(G)	0.5mm Twenty pairs un armoured Telephone cable Indoor type	RM	445		
	O:08:04	Telephone & EPABX Junction Boxes 20 Pairs with Krone connector	EACH	1		
	O:08:03	Telephone & EPABX Junction Boxes 20 Pairs with connector	EACH	1		
	O:08:07	Telephone & EPABX Junction Boxes 50 Pair with connector	EACH	2		
	O:08:08	Telephone & EPABX Junction Boxes 50 Pairs with Krone connector	EACH	1		
	O:08:10	Telephone & EPABX Junction Boxes 100 Pairs with Krone connector	EACH	1		

FIRE FIGHTING

A. SITC OF ADDRESSABLE FIRE ALARM SYSTEM						
S.No.	Reference	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT

1	NSR	Supply & installation /testing / commissioning Analogue Addressable Intelligent Fire alarm control panel, 4 Loop, provision to make with a minimum capacity of 250Nos per loop, with battery back up for 6 Hrs during normal operation and 15 minutes alarm operation, with minimum 160 Character LCD display, necessary interface card to connect a repeater panel and all hardware & software as per specification.	No	1		
1	NSR	Analog Addressable Smoke Detector(below) with programmable for timed automatic sensitivity selection with Standard base and other accessories as required.	No	170		
4	NSR	Supply & installation /testing / commissioning Analog Addressable Mutli Sensor Detector (Above) with programmable for timed automatic sensitivity selection with Standard base and other accessories as required.	No	170		
5	NSR	Supply Installation of heat detector with base, Junction box and other accessories as required,	No	170		
6	NSR	Supply & installation /testing / commissioning SITC of Response indicator	No	170		
7	NSR	Supply & installation /testing / commissioning Analogue Addressable Fault isolator module capable of monitoring shorted loop circuit and automatically restore communications when shorted conditions are corrected. (FIM's are used for every 20 detectors/devices)	No	12		
8	NSR	Supply & installation /testing / commissioning Analogue Addressable Monitor module	No	2		

		operating at 24V DC, 2A, rated at 230V, provided with DPDT contact.				
10	NSR	Supply & installation /testing / commisioning Addressable Electronic Hooter cum Strobe ceiling mounted. The hooters shall be made of ABS plastic, and have a DB level of 65dbA and a multi tone facility.Addressable Control Module shall be fitted in a junction box.	No	10		
11	NSR	Supply & installation /testing / commisioning Addressable Manual call point having an integrally mounted addressable module that monitors and reports contact status. (PULL TYPE)	No	2		
12	NSR	Supply & installation /testing / commisioning Supply and Laying of 2C X 1.5Sq.mm FRLS CU. Ar Cable	Rmt	800		
B.FIRE EXTINGUISHER						
1	NSR	Supply & installation of 4.5Kg, CO2 Type Fire Extinguisher, Trolley Mounted, Easy Weight Management, Used Unused Mechanism, Squeeze Grip, Gross Weight 19.1 Kg, Empty Weight 14.6 Kg, Can Height 860MM, Diameter 140MM, Discharge time minimum 13 Secs, Controllable discharge mechanism, Range minimum 2 Meters, Applicable on Class B,C & electrically started Fire, B Rating 13B, Can construction : Hot Spinning / Forging, Valve Construction : Forging & Machining, Internal Coating of Can : Not Applicable, External Coating of Can : Spray Painting, Sheet metal thickness : 4.5MM, ISI & CE Approved, 2 Year Warranty Including	Nos	12		

		transportation, all taxes and all labour charges etc complete. Makes : Safex / Kenex / Bharat / Reliance				
2	NSR	Supply & installation of ABC Powder MAP 4 Kg Fire extinguisher Mono ammonium phosphate power 90, stored pressure type, IS 15683 : 2006, pressure gauge gross wt. 6.9 kg, empty wt.2.9 kg, can Ht.440mm, Diameter 140mm, Discharge time less than 13 sec, controllable discharge mechanism, range min. 4 mts applicable on classes A,B, C & electrically started fires, A- rating 3A, B-rating 34B, can construction: Deep drawn Co2 mig welding, wall construction: Forging & Machining, internal coating of can: Epoxy power coating, External coating of Can:Epoxy polyester powder coating, sheet metal thickness:1.60mm, Helium leakage detection tested, ISI & CE approved with 5 years warranty (Cease Fire / Minimax make) Including transportation,all taxes and all labour charges etc complete. Makes : Safex / Kenex / Bharat / Reliance	Nos	6		
3	NSR	Supply & installation of 4Nos of 9 Ltrs capacity round bottom bucket with sand, duly painted with enamel white inside & red outside and letter FIRE with black colour.	Nos	6		
4	NSR	Supply & installation of Fire bucket stand fabricated by M.S. angles to install for two numbers of buckets as per local fire officers standards.	Nos	6		

Price Schedule

Lot 5: Repair and Renovation of District Hospital, Siaha

Lot	Description	Amount in INR (in figures)	Amount in INR (words)
Lot 5	Repair and Renovation of Siaha, District Hospital		

Works requirements for DH Siaha

Scope of work

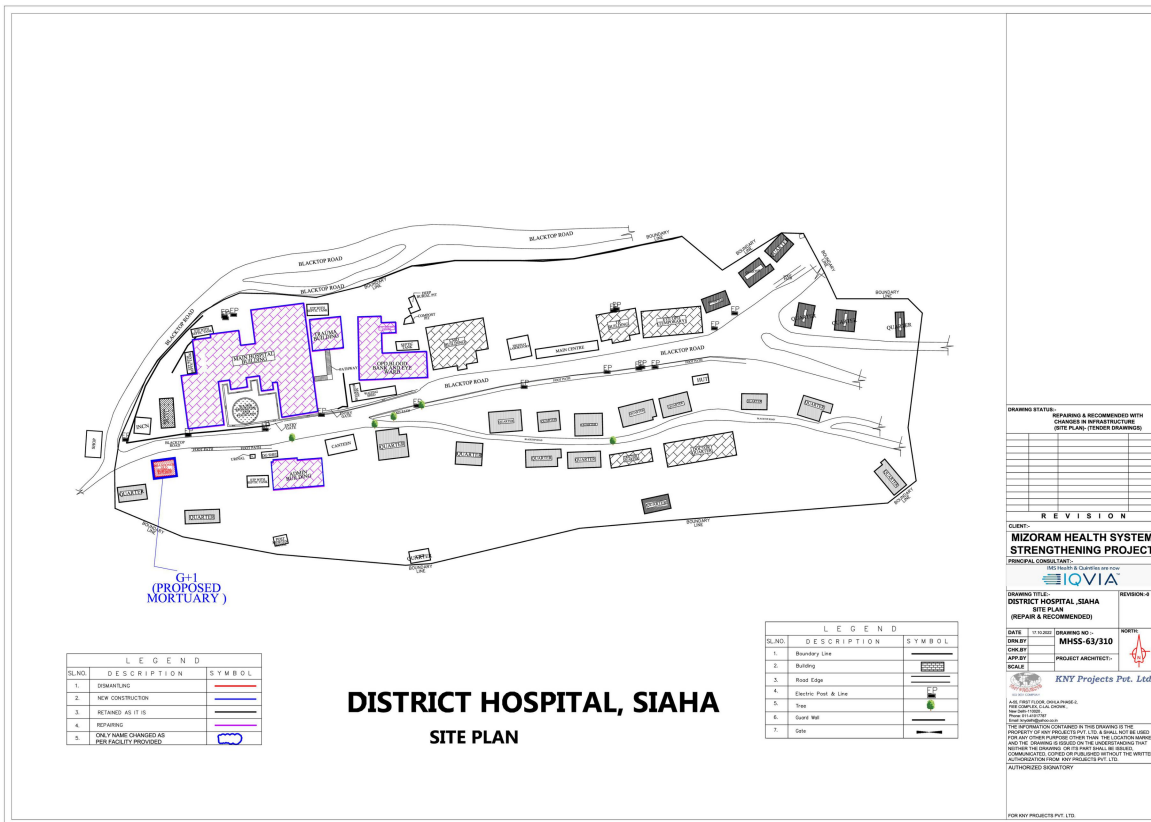
District hospital at Siaha is located in the heart of siaha city and is spread over 6.09 acres of land area.

The Siaha District hospital campus consists of 43 buildings and their area statement is as under-

S.No	Block name	Ground Effected Area (Sq.M)	Remarks
1	Main Building	1208.23	Building proposed to be repaired and renovated
2	Trauma Building	118.98	Building proposed to be repaired and renovated
3	OPD Blood bank, ICTC and eye ward	340.55	Building proposed to be repaired and renovated
4	Admin Building	177.18	Building proposed to be repaired and renovated
5	Abandoned old hospital kitchen space utilized for mortuary	50.36	New building proposed to be constructed under the contract
6	INCN	31.68	
7	PSA Plant	49.49	
8	waiting shed	58.97	
9	CMO Building	290.71	
10	PCM	46.29	
11	Truant Laboratory	44.7	
12	Main Centre	72.47	
13	TB Building	135.42	
14	Eye OPD (Temporary)	193	
15	Quarter-1	35.79	

S.No	Block name	Ground Effected Area (Sq.M)	Remarks
16	Quarter-2	60.75	
17	Quarter-3	50.24	
18	Quarter-4	46.4	
19	Quarter-5	50.03	
20	Quarter-6	26.58	
21	Quarter-7	62.82	
22	Quarter-8	66.19	
23	Quarter-9	49.06	
24	Hut	16.34	
25	Quarter-10	70.38	
26	Quarter-11	85.18	
27	Quarter-12	75.23	
28	Quarter-13	51.38	
29	Quarter-14	82.63	
30	Doctor Quarter-1	202.95	
31	Doctor Quarter-2	67.81	
32	Quarter-15	47.58	
33	Quarter-16	64.93	
34	Quarter-17	92.56	
35	Quarter-18	72.2	
36	Quarter-19	102.52	
37	Quarter-20	28.49	
38	Canteen	55.65	
39	Postmortem room	14.89	
40	DG Shed	11.65	
41	Urinal	2.27	
42	Quarter-21	57.17	
43	Quarter-22	51.99	
	Total	4519.69	

Layout.



Presently the Hospital has following functional departments:

- Casualty.
- Emergency Ward.
- OT complex.
- Labour Room.
- SNCU.
- Minor OT/USG.
- Digital X-ray.
- Administrative area,
- AB-PMJAY office.
- Wards (Gynecology, obstetric, surgical, medicine, Pediatric ward, isolation).
- ICU.
- Kitchen.

- Cabin.
- Endoscopy Room.
- PAC room.
- Recovery Room.
- HDU.
- Telemedicine room.
- Physical & Stress Management.
- OPD, X-ray room.
- NCD Clinic.
- Aayush OPD.
- DMH Clinic.
- Laboratory.
- Blood Bank.
- ICTC. STI/RTI Room.
- ART Centre.
- Post-mortem room.
- COVID care Centre.
- DMS office.
- Pharmacy.
- Record room
- Truant lab

The following table presents the summary of repairs and renovation works to be undertaken in the seven existing buildings:

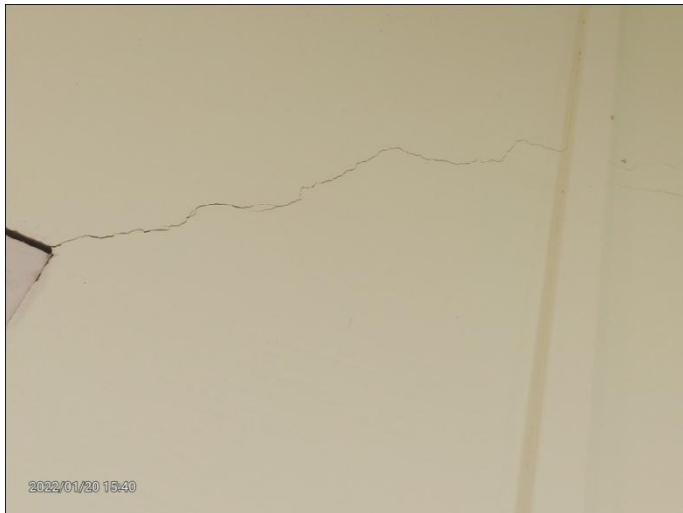
Building	Build up area (in sqm)	Floor	Location	Department
Main Hospital Building	4069.56	4	In front of the entrance of main gate of DH	Casualty, Emergency Ward, OT complex, Labour Room. SNCU, Minor OT/USG, Digital X-ray, Administrative area, AB-PMJAY office, Wards (<i>Gynaecology, obstetric, surgical, medicine, isolation</i>), ICU, Kitchen, cabin

OPD Complex	378.00	3	Back side of PMJAY building	OPD, X-ray room, Laboratory, Blood Bank, ICTC, STI/RTI Room
Post-mortem Room	17.64	1	Behind the DMS.	Post-mortem room
Trauma Centre	83.66	2	Adjacent to main building	Converted into COVID care centre
DMS Building	240.00	2	Opposite to main building	DMS office, Pharmacy, MGPS

The following buildings are to be newly constructed:

1	mortuary	55.00 Sq.M	New building proposed to be constructed under the contract
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Critical locations Photos:



wall plaster cracks are found



New chequered tiles required at trauma



Toilet in doctor room



outer side of eye OPD

The works to be undertaken functional of building. Contractor coordinate to hospital superintendent and prepare a plan on the sequence of work to be done based on the hospital superintendent recommendations. The work to start only after shifting of equipment and patients from room and to be signed off by concerned authority. That the area is ready for repair and renovation. During the construction activity to avoid safety reasons. The area where repair and renovations to be undertaken should sealed of completely caution tape and green cloth in the work premises and sign boards are to be provide mentioning the area of the work to caution the people to avoid those areas.

Proposed changes and repairs in the buildings under the Siaha district hospital

Department	Proposed Changes	Drawing No.
OPD and X-ray room	<ul style="list-style-type: none"> • Shifting of X-ray room to main building and renovation of the X-ray room for converting into Gynecology OPD. The dark room to be converted to USG room with provision of door and the adjacent area to be converted into toilet. • The district mental health clinic to be shifted to gynecology OPD. • Provision of washbasin in surgical OPD. 	Drawing no.63/220-223 and 63/304
OT	<ul style="list-style-type: none"> • Proposed Doctor's change room at the right side of corridor near the common OT. 	Drawing no.63/208-211 and 63/302

Department	Proposed Changes	Drawing No.
	<ul style="list-style-type: none"> • Shift pantry to the left side of corridor near the Gynecology OT and propose sterilization cum scrub area in place of existing pantry to maintain the sterility • Propose nurse changing room in place of existing scrub areas • Proposed dirty corridor by providing one door that opens from common OT and move outside and one door that is already available opens from Gynecology OT to outside as marked in the drawing to ensure the separate pathway for dirty corridor 	
Digital x- ray room	<ul style="list-style-type: none"> • Current Doctor rest room will be converted into the static x-ray room along with 9 inches wall, then current USG room & minor OT will be converted into doctor rest room with provision of extra door, USG waiting room will be converted into minor OT. • Provision of 5 ft passage near to proposed doctor rest room to each x-ray department. • Provision of toilet adjacent to passage for doctors 	Drawing no.63/204-207 and 63/301
Mortuary	<ul style="list-style-type: none"> • A separate room using temporary structure to be built near DMS building as post-mortem room. • The non-functional ICU can be used for MRD. 	Drawing no.63/310-311
(Main Hospital Building, OPD Complex, Trauma Centre, DMS Building.)	<ul style="list-style-type: none"> • Repair considered wherever required <ul style="list-style-type: none"> ○ Seepage ○ Crack repair and Plastering ○ Flooring ○ Painting 	Drawing no.63/201-241 and 63/301-309

Department	Proposed Changes	Drawing No.
	<ul style="list-style-type: none"> ○ Water proofing 	
Electrical	<ul style="list-style-type: none"> • New electrical inventories is proposed that needs to be replaced with the damaged one • CCTV Camera is to be proposed for the monitoring 	CCTV Camera Drawing no.63/501-512
Hospital Exterior	<ul style="list-style-type: none"> • Levelling of hospital veranda outside trauma centre 	

(AS PER MPWD 2019)

S.No	MPWD SoR 2019	Description of Items	Unit	Quantity	Rate	Amount
1	2.07	Earthwork in excavation in foundation trenches or drains etc. (not exceeding 1.5m in width or 10sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5m including getting out excavated soil and disposal of surplus excavated soil as directed within a lead of 50 metres.				
	(b)	Hard Soil (pick work)	<i>cum</i>	89.69		
2	2.17	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	<i>cum</i>	58.51		
3	4.02	Providing and laying in position cement concrete of specified grade excluding cost of centering and shuttering - All work upto plinth level:				
	(a)	1:2:4 (1 cement :2 course sand :4 stone aggregate 20mm nominal size)				
		Details of Cost for 1.00 cum	<i>cum</i>	7.90		
4	4.07	Providing and laying cement concrete in retaining wall, return walls, walls (any thickness) including pilasters, piers, columns,abutments, pillars, posts,plain window sills,				

		sunken floors, etc. up to floor five level excluding the cost of centering, shuttering and finishing :				
	(a)	1:2:4 (1 cement :2 coarse sand :4 stone aggregate 20mm nominal size)	<i>cum</i>	35.97		
5	5.01	Providing and laying in position reinforced cement concrete excluding cost of centering and shuttering , finishing and reinforcement in - All work upto plinth level :				
	(a)	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)	<i>cum</i>	27.66		
6	5.02	Reinforced cement concrete work in walls including attached pillasters, columns, pillars, posts, piers, abutments, return walls, retaining walls, struts, buttresses, string or lacing courses, fillets etc. upto floor five level excluding cost of centering shuttering etc complete.				
	(a)	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)	<i>cum</i>	44.28		
7	5.03	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement complete.				

	(a)	1:1.5:3 (1 Cement:1.5 Coarse Sand:3 graded Stone aggregate 20 mm nominal size.)	<i>cum</i>	22.38		
8	5.10	Centering and shuttering including strutting, propping, etc. and removal of form works in -				
	(a)	<i>Foundations, footings, bases of columns etc. for mass concrete.</i>	<i>sqm</i>	153.82		
	(b)	Walls including attached pillasters, buttresses, string courses, etc.	<i>sqm</i>	352.98		
	(c)	Columns, pillars, piers, abutments, posts and struts.	<i>sqm</i>	51.84		
	(d)	Lintels, beams, plinth beams, girders, bressumers and cantilevers, etc.	<i>sqm</i>	126.58		
	(e)	Suspended floors, roofs, landings, shelves and their support, balconies and chajjaj,etc.	<i>sqm</i>	71.08		
9	5.18	Steel reinforcement for RCC work including straightening, cutting, bending, placing in position and binding all complete.				
	(b)	Thermo-Mechanically Treated bars of grade Fe-500 or more.	<i>kg</i>	12224.07		
10	5.30	Extra for providing richer or leaner mixes respectively at all floor levels .				
	(a)	Providing M-25 grade concrete instead of M-20 grade BMC/ RMC. (Note:- Cement content considered in M-25 is @ 330 kg/cum)	<i>cum</i>	54.70		
11	6.01	First class brickwork in				

		foundation and plinth in :				
	(c)	in cement mortar 1:6 (1 cement : 6 coarse sand)	<i>cum</i>	2.28		
12	6.06	Half brick masonry with first class brick in superstructure above plinth level upto floor V level.				
	(b)	in cement mortar 1 : 4 (1 cement : 4 coarse sand)	<i>sqm</i>	268.72		
13	9.06	Providing 1st class local wood dressed in frames of chaukat for doors, windows, clerestory windows fixed in position.	<i>cum</i>	0.36		
14	9.11	Providing and fixing 1st class local wood panelled shutters for doors etc. including M.S. butt hinges with necessary screws, etc. complete.				
	(b)	35 mm thick.	<i>sqm</i>	19.32		
15	9.55	Providing and fixing factory made PVC door frame made of PVC extruded section (Chaukhat) having overall dimension of 48x40 mm (tolerance + 1 mm) with wall thickness 2.0 mm + 0.2 mm, corners of the door frame to be mitred and joined by means of plastic/M.S. galvanized brackets and stainless steel screws. The hinge side vertical of the frames reinforced by galvanized M.S. tube of size 19x19 mm and 1 mm + 0.1 mm wall thickness and 3 Nos. stainless steel hinges fixed to the frame complete as per manufacturers specification and direction of Engineer-in-charge. (Sintex, Plasopan or equivalent) :	<i>Rmt</i>	62.30		

16	15/9.56	<p>Factory made PVC door shutters made of styles and rails of a uPVC hollow section of size 59x24 mm and wall thickness 2 mm (± 0.2 mm) with inbuilt edging on both sides. The styles and rails mitred and joint at the corners by means of M.S. galvanised/ plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 20x20 mm and 1 mm (± 0.1 mm) wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x24 mm and 2 mm (± 0.2 mm) wall thickness, fixed to the shutter styles by means of plastic/galvanised M.S. 'U' cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm (± 0.1 mm) wall thickness. The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in-charge. (For W.C. and bathroom door shutter) (Sintex, Plasopan or equivalent).</p>				
	(b)	30 mm thick shutter	<i>sqm</i>	19.85		
17	14.37	<p>Providing and fixing 150 mm bright finished brass floor door stopper with rubber cushion, screws, etc. to suite shutter thickness complete.</p>	<i>no</i>	5.00		

18	14.47	Providing and fixing CP brass tower bolts (socket bolts) bright finished with necessary screws etc. complete.				
	(a)	250 mm	<i>no</i>	5.00		
19	14.48	Providing and fixing CP brass handles with necessary screws, etc. complete				
	(a)	250 mm	<i>no</i>	5.00		
20	10.07	Structural steel work rivetted, bolted welded in built up sections, trusses and framed works, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete. (In Tees, R.S. Joists, Angles, Flats and Channels.)	<i>kg</i>	1677.94		
21	10.20	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of 80cm high in staircase, etc consisting of 75mm for rail and post, 63mm for longitudinal intermediate rail and 25mm of vertical section, spacing 125mm interval and as per approval of Engineer-in-charge.	<i>sqm</i>	29.30		

22	21/11.03	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular and other sections of approved make conforming to IS: 733 and IS : 1285, anodised transparent or dyed to required shade according to IS : 1868. (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips, or with expansion hold fastners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and paneling to be paid for separately). For fixed portion.				
	(b)	Anodised	<i>sqm</i>	36.03		
23	11.04	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required. (Glazing to be paid for separately)				
	(b)	Anodised	<i>sqm</i>	35.53		

24	11.05	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge .				
	(a)	With glass panes of 4.0 mm thickness.	<i>sqm</i>	34.52		
	(d)	Frosted glass of 4.00 mm thickness.	<i>sqm</i>	1.33		
25	11.06	Providing and fixing 12mm thick prelaminated three layer medium density (exterior grade) particle board Grade I, Type II conforming to IS : 12823 bonded with phenol formaldehyde synthetic resin, of approved brand and manufacture in paneling fixed in aluminium doors, windows shutters and partition frames with C.P. brass/ stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.				
	(a)	Pre-laminated particle board with decorative lamination on one side and balancing lamination on other side.	<i>sqm</i>	91.30		
26	14.50	Providing and fixing alluminium sliding door bolts (aldrops) anodised transparent or dyed to required colour or shade with nuts and screws etc. complete.				
	(b)	250 x 16 mm	<i>no</i>	15.00		
27	14.51	Providing and fixing Aluminium Tower Bolts (Socket B olts) anodised				

		transparent or dyed to required colour or shade with necessary screws etc. complete.				
	(c)	150 mm	<i>No</i>	24.00		
28	14.52	Providing and fixing alluminium handles anodised transparent or dyed to required colour or shade with necessary screws, etc. complete				
	(a)	125 mm	<i>No</i>	24.00		
29	12.01	Cement concrete flooring 1:2:4 (1 cement : 2 sand : 4 well graded stone aggregate 20mm size) finished with a floating coat neat cement including cement slurry etc. complete but excluding the cost of nosing of steps etc.				
		40 mm thick with 20 mm nominal size stone aggregate	<i>sqm</i>	139.25		
30	12.09	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).				
	(c)	Dark shade using ordinary cement	<i>Sqm</i>	397.69		
31	12.12	Providing & laying vitrified floor tiles in different sizes (thickness to be specified by the manufacture) with water absorption less than 0.08% and conforming to IS:15622,of approved make, in all colours and shades, laid on bed of 20mm thick cement mortar 1 : 4 (1cement:4course sand),				

		including the joints with white cement and matching pigments etc.complete.as per design collours.				
	(c)	Double charge	<i>Sqm</i>	523.60		
32	12.14	Providing & laying vitrified floor tiles in different sizes (thickness to be specified by the manufacture) with water absorption less than 0.08% and conforming to IS:15622,of approved make, in all colours and shades, in skirting/dado, riser of steps, over 12mm thick bed of cement mortar 1:3 (1cement:3course sand), including the joints with white cement and matching pigments etc.complete.				
	(c)	Double charge	<i>Sqm</i>	159.13		
33	12.17	Grouting the jounts of flooring tiles having joints of 3 mm width using epoxy grout mix of 0.70 kg of organic coated filler of desired shade(0.10kg of hardener and 0.20 kg of resin per kg) grouting and finishing complete as per direction of Engineer-in-charge.	<i>sqm</i>	183.24		
34	33/12.19	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to e specified by the manufacaturer),of approved make, in all colours, shades wxcept burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12mm thick bed of cemunt mortar 1:3 (1cemeny :3 coarse sand) and jointing with cement slurry @ 3.3kg per sqm,	<i>sqm</i>	102.32		

		including pointing in white cement mixed with pigment of matching shade complete.				
35	16.01	Providing corrugated G.S. sheet roofing fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead and including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (upto a pitch of 60 degrees) excluding the cost of purlins, rafters and trusses. .				
	(a)	0.80 mm thick with zinc coating not less than 275gm/m ²	<i>sqm</i>	188.50		
36	16.07	Providing and fixing 15 cm wide 45 cm over all semi circular plain G.S. sheet gutter with iron brackets 40x3mm size, bolts, nuts and washers etc. including making necessary connections with rain water pipes complete.				
	(a)	0.80 mm thick with zinc coating not less than 275gm/m ²	<i>rm</i>	54.50		
37	17.01	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm uPVC P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:				
	(a)	Orrisa pan with integral type				

		foot rests				
	(i)	White	<i>no</i>	3.00		
38	17.04	Providing and fixing vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :				
	(i)	White	<i>no</i>	3.00		
39	17.10	Providing and fixing solid plastic Seat Cover and lid for pedestal type W.C. pan with C.P. brass hinges, rubber buffers, etc. complete.				
	(i)	White	<i>no</i>	8.00		
40	17.15	Providing and fixing Health faucet with flexible tube upto 1 metre long and holder of quality and make as approved by Engineer - in - charge..	<i>no</i>	8.00		
41	40/17.16	Providing and fixing White vitreous china wash basin Standard of Parryware/ Hindware/ Cera and equivalent make with R.S. or C.I. brackets, 15mm C.P. brass pillar taps, C.P. brass chain with rubber plugs, 32mm C.P. brass waste of standard pattern, 32mm C.P. brass traps and union complete including painting of fittings and brackets, cutting and making good the walls wherever required.				

	(a)	Vitreous China Wash basin size 630x450 mm with single 15 mm C.P. brass pillar taps				
	(i)	White	<i>no</i>	15.00		
	(b)	Vitreous China Wash basin Compact 450 x 300 mm with single 15 mm C.P. brass pillar taps				
	(i)	White	<i>no</i>	1.00		
42	17.18	Providing and fixing CP Brass 32mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.	<i>no</i>	7.00		
43	17.22	Providing and fixing white vitreous china laboratory sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P brass waste and 40mm C.P.brass trap with necessary C.P. brass unions complete, including painting of fittings and brackets, cutting and making good the wall wherever required :				
	(b)	Size 600x450x200mm	<i>no</i>	12.00		
44	17.24	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :	<i>no</i>	6.00		
45	17.28	Providing and fixing C.P. brass towel rail with two C.P. brass brackets to wooden cleats with C.P. brass screws.				
	(b)	600x20mm size.	<i>no</i>	6.00		

46	17.33	Providing and fixing on wall face SWRPVC soil, waste and vent pipes including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia.	<i>rm</i>	22.50		
	(b)	75mm dia.	<i>rm</i>	30.00		
47	17.34	Providing and fixing SWRPVC plain bend of required degree (87.50°) including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia.	<i>no</i>	12.00		
	(b)	75mm dia.	<i>no</i>	13.00		
48	17.35	Providing and fixing SWRPVC plain bend of required degree (45°) including jointing with rubber lubricant/cement solvent complete.				
	(a)	110mm dia.	<i>no</i>	7.00		
	(b)	75mm dia.	<i>no</i>	6.00		
49	17.36	Providing and fixing SWRPVC bend with access door of required degree including jointing with rubber lubricant/cement solvent complete.				
	(b)	75mm dia SWRPVC bend with access door.	<i>no</i>	5.00		
50	17.37	Providing and fixing single equal SWRPVC plain junction of required degree (T-junction) .				
	(a)	110x110x110mm.	<i>no</i>	5.00		
	(b)	75x75x75mm.	<i>no</i>	3.00		

51	17.41	Providing and fixing SWRPVC socket including jointing with rubber lubricant/cement solvent.				
	(a)	110mm dia. Socket	<i>no</i>	19.00		
	(b)	75 mm dia socket.	<i>no</i>	3.00		
52	17.45	Providing and fixing uPVC multi floor trap with floor trap grating including jointing with rubber lubricant/ solvent cement complete.	<i>no</i>	3.00		
53	18.07	Providing and fixing brass bib cock of approved quality.				
	(a)	15mm nominal bore	<i>no</i>	11.00		
54	18.14	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :				
	(a)	15mm nominal bore	<i>no</i>	27.00		
55	18.16	Providing and fixing 15 mm nominal bore C.P. brass angle stop cock for basin mixer and geyser points of approved quality conforming to IS:8931 .				
	(b)	Class-II	<i>no</i>	27.00		
56	18.29	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				

	(a)	15mm dia nominal bore.	<i>rm</i>	224.00		
	(b)	20mm dia nominal bore.	<i>rm</i>	360.60		
57	18.32	Making connection of CPVC pipes distribution branch by providing and fixing equal Tee with jointing , testing complete including cutting and making good etc.				
	(a)	15mm dia nominal bore.	<i>no</i>	101.00		
	(b)	20mm dia nominal bore.	<i>no</i>	116.00		
58	18.36	Making connection of Astral CPVC pipes distribution branch by providing and fixing Elbow 90o with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	<i>no</i>	96.00		
	(b)	20mm dia.	<i>no</i>	109.00		
59	18.37	Making connection of Astral CPVC pipes distribution branch by providing and fixing Elbow 45o with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	<i>no</i>	96.00		
	(b)	20mm dia.	<i>no</i>	109.00		
60	18.43	Making connection of Astral CPVC pipes distribution branch by providing and fixing Female Adaptor (Brass) with jointing, testing complete including cutting and making good etc.				
	(a)	15mm dia.	<i>no</i>	56.00		
61	18.44	Making connection of Astral CPVC pipes distribution branch by providing and fixing				

		Socket/Coupling with jointing, testing complete including cutting and making good etc.				
	(b)	20mm dia.	<i>no</i>	47.00		
62	18.45	Making connection of Astral CPVC pipes distribution branch by providing and fixing Reducer Coupling with jointing, testing complete including cutting and making good etc.				
	(b)	20 x 15mm	<i>no</i>	49.00		
63	19.02	Applying double coated cement slurry with water proofing chemical (SUPER latex chemical) in proportion 1 : 4 : 7 (1 latex : 4 water : 7 cement) including cleaning the treated surfaces with brushes etc.@ 0.158kg/sqm .	<i>sqm</i>	549.60		
64	19.04	Providing and mixing water proofing chemical (PIDIPROOF POWDER chemical) in plain and reinforced cement concrete work 1 : 2 : 4 , @1.0% by weight of cement.	<i>cum</i>	41.22		
65	19.19	Extra for providing and mixing water proofing chemical (latex or equivalent chemical) @ 2kg per bag of cement in -				
	(d)	15mm cement plaster 1 : 4 (1 cement : 4 sand).	<i>sqm</i>	479.60		
66	20.08	12mm cement plaster 1 : 4 (1 cement : 4 fine sand).	<i>sqm</i>	509.01		
67	20.12	15mm cement plaster 1 : 4 (1 cement : 4 fine sand).	<i>sqm</i>	388.46		
68	20.25	6mm cement plaster to ceiling 1 : 3 (1 cement : 3 fine sand)	<i>sqm</i>	198.47		

69	20.47	White washing with lime to give an even shade : New work (three or more coats)	<i>Sqm</i>	63.60		
70	20.66	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade: New work (one or more coats)	<i>sqm</i>	187.43		
71	20.73	Wall painting with interior emulsion paint of approved brand and manufacture on new work (two or more coats) to give an even shade.				
	(b)	Premium interior emulsion like Velvet touch Luxol silk etc.	<i>sqm</i>	276.93		
72	20.75	Finishing walls with exterior emulsion of required shade on new work (three or more coats) to give an even shade.				
	(b)	Premium exterior emulsion like weather shield, weathercote etc.	<i>sqm</i>	403.23		
73	23.01	Removing white or colour wash by scrapping and sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	<i>sqm</i>	4972.02		
74	23.02	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	<i>sqm</i>	1102.42		

75	23.03	Repairs to plaster of thickness 12mm to 20mm in patches of area 2.5 sq. metres and under including cutting the patch in proper shape and preparing and plastering the surface of the walls complete including disposal of rubbish to the dumping ground within 50 metres lead :				
	(a)	With cement mortar 1:3 (1 cement : 3 fine sand)	<i>sqm</i>	455.82		
76	23.04	Fixing chowkhats in existing opening including embedding chowkhats in floors or walls cutting masonry for holdfasts embedding hold fasts in cement concrete blocks with cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) painting two coats of coal tar to sides of chowkhats and making good the damages to walls and floors as required complete including disposal of rubbish to the dumping ground within 50 metres lead :				
	(a)	Door chowkhats	<i>no</i>	3.00		
77	23.08	Renewing glass panes and refixing existing wooden fillets:				
	(a)	Glass panes of thickness 4mm	<i>sqm</i>	8.30		
78	23.43	Distempering with dry distemper of approved brand and manufacture (one or more coats) and of required shade on old work to give an even shade.	<i>sqm</i>	1302.56		
79	23.44	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade :	<i>sqm</i>	1580.65		

		Old work (one or more coats)				
80	80/23.52	Wall painting with interior emulsion paint of approved brand and manufacture on old work (one or more coats) to give an even shade.				
	(b)	Premium interior emulsion like Velvet touch luxol silk etc.	<i>sqm</i>	6167.58		
81	23.53	Finishing walls with regular exterior emulsion of required shade on old work (three or more coats) to give an even shade.				
	(b)	Premium exterior emulsion like weathercote, weather shield etc.	<i>sqm</i>	762.84		
82	23.54	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade : One or more coats on old work.				
	(a)	General quality	<i>Sqm</i>	202.02		
83	24.01	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.				
	(a)	Nominal concrete 1:3:6 Or richer mix .	<i>cum</i>	2.05		
84	24.06	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead:				
	(a)	In cement mortar	<i>cum</i>	2.43		
85	24.11	Dismantling doors, windows and clerestory windows (steel or wood) shutter including				

		chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead :				
	(a)	Of area 3 sq. metres and below	<i>no</i>	7.00		
86	24.12	Taking out doors, windows and clerestory window shutters (steel or wood) including stacking within 50 metres lead:				
	(a)	Of area 3 sq. metres and below	<i>no</i>	3.00		
87	24.13	Dismantling wood work in frames, trusses, purlins and rafters upto 10 metres span and 5 metres height including stacking the material within 50 metres lead:				
	(a)	Of sectional area 40 square centimetres and above.	<i>cum</i>	176.80		
88	24.22	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
	(a)	For thickness of tiles 10 mm to 25 mm	<i>sqm</i>	175.47		
89	24.26	Dismantling roofing including ridges, hips valleys and gutters etc., and stacking the material within 50 metres lead of:				
	(a)	G.S. Sheet	<i>sqm</i>	65.91		
90	24.36	Dismantling wooden boardings in lining of walls and partitions, excluding supporting members but including stacking within 50 metres lead :				
	(b)	Thickness above 10 mm upto 25 mm	<i>sqm</i>	48.00		
91	24.43	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to	<i>sqm</i>	455.82		

		the dumping ground within 50 metres lead.				
92	24.46	Hacking of CC flooring including cleaning for surface etc. complete as per direction of the Engineer-in-Charge.	<i>sqm</i>	479.60		
93	N.S.R	Semi-Hermetic sealed Lead line door with lead view glass 800X2100mm excluding delivery charges	<i>no</i>	1.00		
94	N.S.R	Semi-Hermetic sealed Lead line door with lead view glass 1200X2100mm (Double Leaf) excluding delivery charges	<i>no</i>	1.00		
95	N.S.R	Note :- Transport charges (carriage) for dumping the building waste at near by dumping yard/zone. Disposal of approx 3000 cft (building waste generated) around 5 Km from DH Siaha in 15 trip i.e. 200 cft /Trip	<i>No</i>	15.00		
96	N.S.R	Providing & Inserting 12mm dia galvanised steel injection nipple in honeycomb area and along the crackline including drilling of holes required diameter (20mm to 30mm) upto a depth of 30mm to 80mm at required spacing and making the holes and cracks dust free by blowing compressed air , sealing the distance between injection nipple with the adhesive chemical of approved make and allow it to cure completely.	<i>Nos.</i>	604.56		

97	N.S.R	Injection approved grout (SIKADUR- 55LP)or equivalent in proportion recommended by the manufacturer into cracks/hony-comb area of concrete/masonry by suitable gun/pump at requird pressure including cutting of nippales	<i>Kg</i>	161.22		
98	N.S.R	Providing and fixing factory made solid Wood Polymer Composite (WPC) single extruded Door Frame section of size with encapsulation of 8MM rigid layer on all the six surfaces. The door frame will have a rebat of 32MM. Door Frame section of 63.5x100 MM .The two Vertical members are to be joined together with the horizontal member using 8x75 MM long MS Star full thread screws to be used with reverse forward speed control hand drilling machine. The ready/assembled door frame is fixed to the wall using hold fast or bolt fasteners. A minimum of 4 No.s of screws to be provided for each vertical member & minimum 2no.s for horizontal member	<i>Rmt</i>	46.20		
99	N.S.R	Providing and fixing 28 -30 MM thick solid Wood Polymer Composite(WPC) single extruded door shutter with 3MM top and bottom rigid layer with an overall density of 750kg/Cum. It will be fixed to the frame using 3 inch /4 inch hinges. A minimum of 4 hinges will be required for fixing the door with the frame	<i>sqm</i>	17.64		

100	N.S.R	Providing Diluting and injecting chemical emulsion for existing windows and doors post construction Anti-Termite Treatment Chlorpyriphos 20% EC. (Note: Spray Treatment: Spray will be applied on all windows and doors. Chemical will be injected inside the cracks of windows and doors at the wall junction.)				
	(a)	Doors / Windows	<i>NO</i>	40.00		
	(b)	Providing and supply Service cost for Diluting and injecting chemical emulsion for Effected Floor areas	<i>Sqm</i>	400.00		
101	N.S.R	Diluting and injecting chemical emulsion for Pre-construction Anti-Termite Treatment with Chlorpyriphos/Lindane emulsifiable chemical 20% with 1% concentration.	<i>Sqm</i>	94.72		

ELECTRICAL

(AS PER MPWD 2016)

S. N O	MPWD 2016	DESCRIPTION	UNIT	QT Y	RAT E	AMOU NT

1	C:02:06	Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per IS:694 (1990) and Flame retardant low smoke & Halogen (FR-LSH) 1100 voltage graded copper flexible wire stranded copper running inside PVC Casing & capping (Grade-II) of all available sizes diameter fixed, surface on the wall/ceiling/floor as per convenience including junction box having required numbers of ways from Main to Sub-Main/DB/Sub-Main/DB to SDB/SDB/Switch boards/SDB to switch boards as required				
	C:02:06(A)	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	RM	50		
2	E:01:00	Rewiring for light point/fan point/exhaust fan point/calling bell point with 1.5 Sqmm of PVC insulated standard copper conductor 1.5 sqmm as per IS:694 (1977) and Life shields Halogen Free Flame Retardant (HFFR) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as required				
	E:01:01	VERY SHORT POINT	POINT	285		
2	F:11:00	Supplying and drawing the following sizes of PVC insulated standard copper conductor 1.5 sqmm as per IS:694 (1977) and Flame Retardant Low smoke & Halogen (FRLS&H) in the existing surface/recess, PVC/steel conduit/PVC casing & capping as required				
i.	F:11:01	1 x 1.5 sq. mm	METRE	300		
ii.	F:11:02	2 x 1.5 sq. mm	METRE	350		
3	H:05:00	Providing and fixing of the following sizes of PVC casing & capping double lock on surface with necessary accessories as required				
i.	H:05:02	20mm X12mm PVC casing & capping double locked	METRE	350		
ii.	H:05:03	25mm X12mm PVC casing & capping double locked	METRE	400		

4	MPWD	Modular fan regulator 4/5 step humming free EME 1M One Modular Pressfit/Equivalent	EACH	50		
5	MPWD	Modular blanking plate 2 modules	EACH	20		
6	1:05:00	Supplying and fixing of PVC boards of the following sizes on surface including necessary switches, plug/socket and fan regulators etc. with necessary painting if necessary				
i.	I:05:02	2 S	EACH	50		
ii.	I:05:06	4 S	EACH	20		
iii.	I:05:09	3 S + 1 SOC	EACH	10		
7	N:01:53	16-25 Amps MCB protected SocketSP in a plastic enclosure for surfacemounting	EACH	12		
8	N:03:00	Supplying, fitting, & fixing of 4-Ways MCB DB single door in sheet steel, Phosphatised powderpainted MCB DBs with Bus Bar, Neutral link, earth bar and din rail conforms to IS:13032, IS:8623, BS:5486240 Volts 50 Hz, on surface/recess including inter-connection, painting etc, as required				
i.	O:03:02	8-ways MCB DB SP&N SD metallic door	EACH	6		
ii.	O:03:03	12-ways MCB DB SP&N SD metallic door	EACH	2		
9	N:01:00	Supplying and fixing of all types and rating MCBs, RCCBs, ELCBs etc, 240/415 Volts 50Hz AC supply in the existing MCB DB complete with connections, testing & commissioning etc in completed				
i.	N:01:01	5 to 32 Amps ,SP, MCB B- series	EACH	50		
15	N:01:35	40 Amps' FP, MCB Isolator	EACH	10		
16	C:04:02	Wiring in looping system with PVC wire sheathed standard copper conductor/wires as per IS:694 (1990) and Flame retardant (FR) 1100 voltage graded copper flexible wire stranded copper running inside PVC casing & capping (Gr-II) 20x12mm fixed, surface on the wall/ceiling /floor as per convenience including junction box having required numbers of ways from DB to the light plug/socket 5/6A point etc. as required				
	C:04:02(A)	Light plug Point Very Short Point (ordinary	per point	185		

17	T:04:12	Laying of one number PVC insulated and PVC sheathed/XLPE Power cables of 1.1KV grade of size exceeding 25 Sqmm but not exceeding 120 Sqmm on surface	EACH	14		
	J:02:00	Installation of all kind of Electrical appliances				
18	J:01:04	Supplying,fitting and fixing Batten Holder fancy including connection etc, as required	per point	242		
ii	J:02:05	Installation of Air Conditioner Split Type 1.5/2.0 in the existing wall including fixing the Hook in the wall by standard size of sleeve Nuts and bolts or Stnadard Screw for the above Air Conditioner Split type 1.5/2.0 TR, and making good the damage, connection, testing and commissioning etc, as required	EACH	5		
iii.	J:01:36	Installation, testing & commissioning of ceiling fan and regulator, including wiring the downrod of standard length (upto 30cm) with 2X1.5 sqmm PVC insulated copper conductor single core cable etc, as required	EACH	15		
iv	J:01:39	Installation of Exhaust fan up-to 450 mm Sweeps in the existing opening, includingmaking holes to suit the size of the above Exhaust fan, and making good the damage,Connection,testing and commissioning etc, as required.	EACH	15		
v	J:01:42	Extra for fixing of the gravity louvers/shutters complete with frame for Exhaust fan of allsizes as required	EACH	15		
19	MPWD	Supply of Ceiling fan 5 star rated Fusion 5* (Metallic beige-brown/pearl ivory-Gold) 1200mm sweeps (Havells/Usha/Polar/Gromton/Bajaj)	EACH	15		
20	MPWD	Supply of Exhaust fan 300mm sweeps ISI marked (Usha/Havells/Polar/Gromton/Bajaj)	EACH	15		
21	MPWD	4KVA Automatic Stabilizer with built-in high cut, Buzzer & Timer :Input:50VA-280V & Output:210V-240V (Venus/Indo/V-Guard/CARE)	EACH	5		
	MPWD	5/6 A switch	EACH	213		
	MPWD	2 way 5/6 A switch	EACH	20		
	MPWD	Modular Switch 16Amps On-Off	EACH	40		
	MPWD	3 pin 5/6 A socket outlet	EACH	115		

	MPWD	Modular Socket 16/6Amp 3+3	EACH	40		
	MPWD	Bell push	EACH	15		
22	MPWD	two module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	EACH	84		
23	MPWD	modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	EACH	25		
	NSR (B)					
24	NSR1	Supply of 23W LED Lamp, Surface Mount. (Cat. No. LHLDDBA212R023 Base Cap - B22 Havells & equivalent)	EACH	242		
25	NSR2	Supplying of 1.5 Ton split Airconditioners suitable or operation on AC supply single phase 50 Hz 230V with hermetically sealed conformer with air cooled condenser motor capacitor start run capacitors relay and over load protector internal unit with one indoor and one outdoor unit the condenser unit will be placed outside the room on the terrace to avoid noise (Make :- Carrier/ Volta/LG/Samsung/Hitachi & equivalent)	EACH	5		
26	NSR3	Supply, installation, testing and commissioning of 5.5KVA - 192V Online UPS, Transformer Based Rating in VA, Watts 5.5KVA, 4.4 Kilo Watts Battery Module External Battery Module No's of Battery Required Sixteen Batteries - 16 No's Battery Type SMF - VRLA DC Voltage 192V (Make:- Microtek i-MAXX & equivalent)	EACH	3		

CCTV

S.No	Reference	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
A.		CCTV (ANALOG VIDEO SURVEILLANCE) SYSTEM				

1	NS	Supply, installation, testing and commissioning of 2.4 Mega Pixel (HD Quality), Bullet Camera, IR Impulse/Hikvision/Tyco/Pelco/Honeywell/ CP Plus	No.	13		
2	NS	Supply, installation, testing and commissioning of 2.4 Mega Pixel (HD Quality), Dome Camera, IR Impulse/Hikvision/Tyco/Pelco/Honeywell/CP Plus	No.	41		
3	NS	Supply, installation, testing and commissioning of 32 channel DVR. with Hard Disck, for 30 days recording Impulse/Hikvision/Tyco/Pelco/Honeywell	No.	2		
4	NS	Supply, installation, testing and commissioning two video outputs & 32" totally flat colour LCD monitor Panasonic/LG/Samsung	No.	2		
6	NS	Supply installation commissioning and testing of 1 TB Hard Disck, for 30 days recording	No.	5		
7	NS	Supply installation testing and commissioning of 10 Channel power supply Reputed Make	No.	8		
8	NS	Supply installation testing and commissioning of BNC Connectors/Power Connectors etc. Consumable itesms Reputed Make	Lot	54		
B	MPWD 2016					
9	H:02:00	Supplying and fixing of the following size of FRLS PVC conduit along with the accessories in surface/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recess, conduit as required				
	H:02:02	25mm dia FRLS PVC conduit pipe	RM	1350		

FIRE FIGHTING

A. SITC OF ADDRESSABLE FIRE ALARM SYSTEM						
S.No.	Reference	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
1	NSR	Supply & Installation /testing / commisioning Analogue Addressable Intelligent Fire alarm control panel, 4 Loop, provision to make with a minimum capacity of 250Nos per loop, with battery back up for 6 Hrs during normal operation and 15 minutes alarm operation, with minimum 160 Character LCD display, necessary interface card to connect a repeater panel and all hardware & software as per specification.	No	1		
2	NSR	Supply & Installation /testing / commisioning Analog Addressable Smoke Detector(below) with programmable for timed automatic sensitivity selection with Standard base and other accessories as required.	No	120		
3	NSR	Supply & Installation /testing / commisioning Analog Addressable Mutli Sensor Detector (Above) with programmable for timed automatic sensitivity selection with Standard base and other accessories as required.	No	120		
4	NSR	Supply Installation of heat detector with base, Junction box and other accessories as required,	No	120		
5	NSR	SITC of Response indicator	No	60		
6	NSR	Supply & Installation /testing / commisioning Analogue Addressable Fault isolator module capable of monitoring shorted loop circuit and automatically restore communications when shorted	No	30		

		conditions are corrected. (FIM's are used for every 20 detectors/devices)				
7	NSR	Supply & Installation /testing / commisioning Analogue Addressable Monitor module operating at 24V DC, 2A, rated at 230V, provided with DPDT contact.	No	2		
8	NSR	Supply & Installation /testing / commisioning Addressable Electronic Hooter cum Strobe ceiling mounted. The hooters shall be made of ABS plastic, and have a DB level of 65dbA and a multi tone facility. Addressable Control Module shall be fitted in a junction box.	No	14		
9	NSR	Addressable Manual call point having an integrally mounted addressable module that monitors and reports contact status. (PULL TYPE)	No	4		
10	NSR	Supply & Installation /testing / commisioning Supply and Laying of 2C X 1.5Sq.mm FRLS CU. Ar Cable	Rmt	700		
B.FIRE EXTINGUISHER						

1	NSR	<p>Supply & Fixing of 4.5Kg, CO2 Type Fire Extinguisher, Trolley Mounted, Easy Weight Management, Used Unused Mechanism, Squeeze Grip, Gross Weight 19.1 Kg, Empty Weight 14.6 Kg, Can Height 860MM, Diameter 140MM, Discharge time minimum 13 Secs, Controllable discharge mechanism, Range minimum 2 Meters, Applicable on Class B,C & electrically started Fire, B Rating 13B, Can construction : Hot Spinning / Forging, Valve Construction : Forging & Machining, Internal Coating of Can : Not Applicable, External Coating of Can : Spray Painting, Sheet metal thickness : 4.5MM, ISI & CE Approved, 2 Year Warranty Including transportation, all taxes and all labour charges etc complete. Makes : Safex / Kenex / Bharat / Reliance</p>	Nos	14		
2	NSR	<p>Supply and fixing of ABC Powder MAP 4 Kg Fire extinguisher Mono ammonium phosphate power 90, stored pressure type, IS 15683 : 2006, pressure gauge gross wt. 6.9 kg, empty wt.2.9 kg, can Ht.440mm, Diameter 140mm, Discharge time less than 13 sec, controllable discharge mechanism, range min. 4 mts applicable on classes A,B, C & electrically started fires, A- rating 3A, B-rating 34B, can construction: Deep drawn Co2 mig welding, wall construction: Forging & Machining, internal coating of can: Epoxy power coating, External coating of Can:Epoxy polyster powder</p>	Nos	14		

		coating, sheet metal thickness:1.60mm, Helium leakage detection tested, ISI & CE approved with 5 years warranty (Cease Fire / Minimax make) Including transportation,all taxes and all labour charges etc complete. Makes : Safex / Kenex / Bharat / Reliance				
3	NSR	Supply and fixing of 4Nos of 9 Ltrs capacity round bottom bucket with sand, duly painted with enamel white inside & red outside and letter FIRE with black colour.	Nos	14		
4	NSR	Supply anmd fixing of Fire bucket stand fabricated by M.S. angles to install for two numbers of buckets as per local fire officers standards.	Nos	14		

PA and EPABX (MPWD 2016)

S. NO	SSR NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	NSR					
A	PA SYSTEM					
1	NSR	Supply of 250 watt ,AC 220-240 V, amplifier with all necessary cable as required (Ahuja SSA-160 or equivalent)	EA CH	3		
2	NSR	Supply of Paging Microphone (Corded)	EA CH	3		
3	NSR	Supply of Microphone (Corded Mic) (Ahuja/Sony/or Equivalent)	EA CH	3		
4	NSR	Supply of Microphone (Cordless Mic) (Ahuja/Sony/or Equivalent)	EA CH	3		
5	NSR	Supply of Speaker (Box)32 watt (Ahuja/Sony/or Equivalent)	EA CH	12		
6	NSR	Horn speaker 40 watt (Ahuja/Sony/or Equivalent)	EA CH	3		
7	NSR	2.5 sq. mm connecting wire (double core copper	RM	180		

		conductor)				
B	EPBAX SYSTEM					
8	NSR	Supply installation testing and commissioning of Star model, 100 lines, EPABX Compact 832 Technology Microcontroller based stored programme control techniques CMOS cross point switching Longitudinal balance 60db Extn. Loop resistance 600 ohms Insertion Loss a) Extn. to Extn. Less than 2 db at 1 KHz b) Extn. to P&T line Less than 1 db at 1 KHz Dial Speed 10 +/- 0.5 PPS Cross talk attenuation Not less than -70 db Break ratio 33:66 Input Power 230 VC +/- 10% 50 Hz Cabling Single pair Ambient conditions 0 to 45° C, 95% RH (Non condensing) UPS Inbuilt (without batteries)	EA CH	1		
9	NSR	Operator Console	EA CH	1		
10	NSR	Land line telephone corded complete all as per BEETAL M59/ or equivalent white/black	EA CH	100		
	MPWD 2016					
11	C:04:08	Wiring in Parallel system with PVC Insulated Telephone cables for indoor applications confirming to TEC specification G/WIR06/02 running inside PVC Casing & Capping pipe Grade-II 20mm dia' fixed, surface in the wall/ceiling/floor as per convenience including junction box having required numbers of ways Main to Sub-Main/DB, Sub-main/DB to SDB/Switch boards/SDB to switch boards as required:-				
	C:04:08(D)	0.5mm Four pairs un armoured Telephone cable Indoor type	RM	275		
	C:04:08(E)	0.5mm Five pairs un armoured Telephone cable Indoor type	RM	280		
	C:04:08(F)	0.5mm ten pairs un armoured Telephone cable Indoor type	RM	150		

C:04:08(G)	0.5mm Twenty pairs un armoured Telephone cable Indoor type	RM	285		
O:08:04	Telephone & EPABX Junction Boxes 20 Pairs with Krone connector	EA CH	1		
O:08:03	Telephone & EPABX Junction Boxes 20 Pairs with connector	EA CH	1		
O:08:07	Telephone & EPABX Junction Boxes 50 Pair with connector	EA CH	1		
O:08:08	Telephone & EPABX Junction Boxes 50 Pairs with Krone connector	EA CH	1		
O:08:10	Telephone & EPABX Junction Boxes 100 Pairs with Krone connector	EA CH	1		

Form of Bid Security - Bank Guarantee
[Guarantor letterhead or SWIFT identifier code]

Bank Guarantee No.....*[insert guarantee reference number]*
Date.....*[insert date of issue of the guarantee]*

WHEREAS, _____ *[name of Bidder]*¹ (hereinafter called "the Applicant") has submitted his Bid dated _____ *[date]* or will submit his Bid for the construction of _____ *[name of Contract]* (hereinafter called "the Bid") under Request for Bids No.....*[insert number]* (hereinafter called "the RFB")

KNOW ALL PEOPLE by these presents that We _____ *[name of bank]* of _____ *[name of country]* having our registered office at _____ (hereinafter called "the Bank") are bound unto _____ *[name of Employer]* (hereinafter called "the Employer") in the sum of _____² for which payment well and truly to be made to the said Employer the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ 20____.

THE CONDITIONS of this obligation are:

- (1) If after Bid opening the Applicant (a) withdraws his bid during the period of Bid validity specified in the Letter of Bid, or any extended date provided by the Applicant ("the Bid Validity Period"); or (b) does not accept the correction of the Bid Price pursuant to ITB 31;

or

- (2) If the Applicant having been notified of the acceptance of his bid by the Employer during the period of Bid validity:
 - (a) fails or refuses to execute the Contract Agreement in accordance with the Instructions to Bidders, if required; or

¹ Insert name of the Bidder, which in the case of a joint venture shall be (a) the name of the joint venture that submits the bid if the JV has been constituted into a legally enforceable JV, or (b) the names of all future members of the JV as named in the letter of intent to execute the JV Agreement submitted by the bidder along with its bid.

² The Applicant should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Clause 19.1 of the Instructions to Bidders.

-
- (b) fails or refuses to furnish the Performance Security and if required, the Environmental and Social (ES) Performance Security, in accordance with the Instruction to Bidders.

we undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the four conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date _____³ days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE _____ SIGNATURE OF THE BANK _____

WITNESS _____ SEAL _____

[signature, name, and address]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

³ 45 days after the end of the validity period of the Bid.

Technical Proposal Forms

- Key Personnel Schedule
 - Equipment
 - Site Organization
 - Method Statement
 - Mobilization Schedule
 - Construction Schedule
 - ES Management Strategies and Implementation Plans
 - Code of Conduct for Contractor's Personnel (ES)
 - Sub-contracting elements or works which in aggregate adds to more than 10% of Bid price (*for each the qualifications and experiences on the identified subcontractor in the relevant field should be given*)
- Note: Work should not be split into small parts and sub-contracted; but sub-contracting specialized elements of works is acceptable.*
- Others
 - Bidder's Qualification

Forms for Personnel

Form PER – 1: Key Personnel Schedule

Bidders should provide the names and details of the suitably qualified Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.

Key Personnel

1.	Title of position:	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
2.	Title of position: <i>[Environmental Specialist]</i>	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
3.	Title of position: <i>[Health and Safety Specialist]</i>	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
4.	Title of position: <i>[Social Specialist]</i>	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>

	Time commitment for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
5.	Title of position: Sexual Exploitation, Abuse and Harassment Expert	
	<i>[Where a Project SEA risks are assessed to be substantial or high, Key Personnel shall include an expert with relevant experience in addressing sexual exploitation, sexual abuse and sexual harassment cases]</i>	
	Name of candidate:	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>
6.	Title of position:	
	Name of candidate	
	Duration of appointment:	<i>[insert the whole period (start and end dates) for which this position will be engaged]</i>
	Time commitment for this position:	<i>[insert the number of days/week/months/ that has been scheduled for this position]</i>
	Expected time schedule for this position:	<i>[insert the expected time schedule for this position (e.g. attach high level Gantt chart)]</i>

**Form PER-2:
Resume and Declaration**

Key Personnel

(To be filled for all Key Personnel)

Name of Bidder

Position [#1]: <i>[title of position from Form PER-1]</i>											
Personnel information	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%; padding: 5px;">Name:</td> <td style="padding: 5px;">Date of birth:</td> </tr> <tr> <td style="padding: 5px;">Address:</td> <td style="padding: 5px;">E-mail:</td> </tr> <tr> <td colspan="2" style="padding: 5px;">Professional qualifications:</td> </tr> <tr> <td colspan="2" style="padding: 5px;">Academic qualifications:</td> </tr> <tr> <td colspan="2" style="padding: 5px;">Language proficiency:<i>[language and levels of speaking, reading and writing skills]</i></td> </tr> </table>	Name:	Date of birth:	Address:	E-mail:	Professional qualifications:		Academic qualifications:		Language proficiency: <i>[language and levels of speaking, reading and writing skills]</i>	
Name:	Date of birth:										
Address:	E-mail:										
Professional qualifications:											
Academic qualifications:											
Language proficiency: <i>[language and levels of speaking, reading and writing skills]</i>											
details	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="padding: 5px;">Address of employer:</td> </tr> <tr> <td style="width: 40%; padding: 5px;">Telephone:</td> <td style="padding: 5px;">Contact (manager / personnel officer):</td> </tr> <tr> <td style="padding: 5px;">Fax:</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">Job title:</td> <td style="padding: 5px;">Years with present employer:</td> </tr> </table>	Address of employer:		Telephone:	Contact (manager / personnel officer):	Fax:		Job title:	Years with present employer:		
Address of employer:											
Telephone:	Contact (manager / personnel officer):										
Fax:											
Job title:	Years with present employer:										

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

Project	Role	Duration of involvement [From - To]	Relevant experience
---------	------	--	---------------------

<i>[main project details]</i>	<i>[role and responsibilities on the project]</i>	<i>[time in role]</i>	<i>[describe the experience relevant to this position]</i>

Declaration

I, the undersigned Key Personnel, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Bid:

Commitment	Details
Commitment to duration of contract:	<i>[insert period (start and end dates) for which this Key Personnel is available to work on this contract]</i>
Time commitment:	<i>[insert the number of days/week/months/ that this Key Personnel will be engaged]</i>

I understand that any misrepresentation or omission in this Form may:

- (a) be taken into consideration during Bid evaluation;
- (b) result in my disqualification from participating in the Bid;
- (c) result in my dismissal from the contract.

Name of Key Personnel: *[insert name]*

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Bidder:

Signature: _____

Date: (day month year): _____

Forms for Equipment

The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III (Evaluation and Qualification Criteria). The Bidder shall provide all the information requested below:

S. N o.	Item of Equipment	Description	Make	Capacity	Age (years)	Condition	No. available and present location	Owned	Leased	Purchased

Site Organization

[insert Site Organization information]

Method Statement

[insert method Statement – A detailed note should be submitted outlining bidders proposed methodology and program of construction including Contractor’s Environmental and Social, Health Management Strategies and Implementation Plans (ES-MSIP), backed with equipment, materials and manpower planning and deployment, duly supported with broad calculations and quality control system/assurance procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones]

Mobilization Schedule

[insert Mobilization Schedule]

In accordance with the Particular Conditions, Sub-Clause 16.2, the Contractor shall not carry out mobilization to Site unless the Project manager gives consent that appropriate measures are in place to address environmental and social risks and impacts, which as a minimum shall include applying the Management Strategies and Implementation Plans (MSIPs) and Code of Conduct for Contractor's Personnel, submitted as part of the Bid and agreed as part of the Contract.

Construction Schedule

[insert Construction Schedule]

The construction schedule shall include the following key milestone - No-objection to the Code of Conduct for Contractor's Personnel and Contractor's MSIPs, which collectively form the C-ESMP, in accordance with the Particular Conditions of Contract Sub-Clause 16.2.

Sub Contracting

[Insert proposal of sub-contracting elements of works amounting to more than 10% of the bid price for each element and indicate the name of the sub-contractor, its qualifications and experiences to execute that element satisfactorily]

Environmental and Social, Health Management Strategies and Implementation Plans

(ES-MSIP)

The Bidder shall submit comprehensive and concise Environmental and Social Management Strategies and Implementation Plans (ES-MSIP) as required by ITB 11.1 (k) of the Bid Data Sheet. These strategies and plans shall describe in detail the actions, materials, equipment, management processes etc. that will be implemented by the Contractor, and its subcontractors.

In developing these strategies and plans, the Bidder shall have regard to the ES provisions of the contract including those as may be more fully described in the Works Requirements in Section VII.

Code of Conduct for Contractor’s Personnel (ES) Form

Note to the Employer:

The following minimum requirements shall not be modified. The Employer may add additional requirements to address identified issues, informed by relevant environmental and social assessment.

The types of issues identified could include risks associated with: labour influx, spread of communicable diseases, and Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH) etc.

Delete this Box prior to issuance of the bidding document.

CODE OF CONDUCT FOR CONTRACTOR’S PERSONNEL

We are the Contractor, [enter name of Contractor]. We have signed a contract with [enter name of Employer] for [enter description of the Works]. These Works will be carried out at [enter the Site and other locations where the Works will be carried out]. Our contract requires us to implement measures to address environmental and social risks related to the Works, including the risks of sexual exploitation, sexual abuse and sexual harassment.

This Code of Conduct is part of our measures to deal with environmental and social risks related to the Works. It applies to all our staff, laborers and other employees at the Works Site or other

Note to the Bidder:

The minimum content of the Code of Conduct form as set out by the Employer shall not be substantially modified. However, the Bidder may add requirements as appropriate, including to take into account Contract-specific issues/risks.

The Bidder shall initial and submit the Code of Conduct form as part of its bid.

places where the Works are being carried out. It also applies to the personnel of each subcontractor and any other personnel assisting us in the execution of the Works. All such persons are referred to as “**Contractor’s Personnel**” and are subject to this Code of Conduct.

This Code of Conduct identifies the behavior that we require from all Contractor’s Personnel.

Our workplace is an environment where unsafe, offensive, abusive or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

REQUIRED CONDUCT

Contractor's Personnel shall:

1. carry out his/her duties competently and diligently;
2. comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor's Personnel and any other person;
3. maintain a safe working environment including by:
 - a. ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
 - b. wearing required personal protective equipment;
 - c. using appropriate measures relating to chemical, physical and biological substances and agents; and
 - d. following applicable emergency operating procedures.
4. report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;
5. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;
6. not engage in Sexual Harassment, which means unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with other Contractor's or Employer's Personnel;
7. not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another;
8. not engage in Sexual Abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;
9. not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
10. complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters, and Sexual Exploitation, and Abuse (SEA) and Sexual Harassment (SH);
11. report violations of this Code of Conduct;
12. not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of the grievance mechanism for Contractor's Personnel or the project's Grievance Redress Mechanism; and
13. Any scrap arise due to demolition/renovation activities at site, will be safely deposited at a place identified by the contractor which should be prior verified and approved by the Concerned Authority.
14. Following key actions will be in C&D W management in the scope of Contractor:

-
- i. Earmarking & Geotagging of location for disposal of C&D Waste,
 - ii. 35-40% of the waste will be reused at site,
 - iii. Approvals for Location (from Civic authority & State PCB as per C&D Waste rules 2016) to dump the C&D waste, in case
 - iv. Collection of C&D waste (workers wearing Mask & gloves)
 - v. Handling of C&D waste in a tarpaulin covered vehicle.
 - vi. At site periodic water sprinkling where demolition activity is in progress.
 - vii. Preferably disposal of C&D Waste will be (from site) after SUNSET.

RAISING CONCERNS

If any person observes behavior that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done in either of the following ways:

1. Contact [*enter name of the Contractor's Social Expert with relevant experience in handling gender-based violence, or if such person is not required under the Contract, another individual designated by the Contractor to handle these matters*] in writing at this address [] or by telephone at [] or in person at []; or
2. Call [] to reach the Contractor's hotline (*if any*) and leave a message.

The person's identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.

There will be no retaliation against any person who raises a concern in good faith about any behavior prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct by Contractor's Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

FOR CONTRACTOR'S PERSONNEL:

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [*enter name of Contractor's contact person with relevant experience*] requesting an explanation.

Name of Contractor's Personnel: [insert name]

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Contractor:

Signature: _____

Date: (day month year): _____

ATTACHMENT 1: Behaviors constituting Sexual Exploitation and Abuse (SEA) and behaviors constituting Sexual Harassment (SH)

ATTACHMENT 1 TO THE CODE OF CONDUCT FORM
BEHAVIORS CONSTITUTING SEXUAL EXPLOITATION AND ABUSE (SEA) AND
BEHAVIORS CONSTITUTING SEXUAL HARASSMENT (SH)

The following non-exhaustive list is intended to illustrate types of prohibited behaviors:

- (1) **Examples of sexual exploitation and abuse** include, but are not limited to:
- A Contractor's Personnel tells a member of the community that he/she can get them jobs related to the work site (e.g. cooking and cleaning) in exchange for sex.
 - A Contractor's Personnel that is connecting electricity input to households says that he can connect women headed households to the grid in exchange for sex.
 - A Contractor's Personnel rapes, or otherwise sexually assaults a member of the community.
 - A Contractor's Personnel denies a person access to the Site unless he/she performs a sexual favor.
 - A Contractor's Personnel tells a person applying for employment under the Contract that he/she will only hire him/her if he/she has sex with him/her.
- (2) **Examples of sexual harassment in a work context**
- Contractor's Personnel comment on the appearance of another Contractor's Personnel (either positive or negative) and sexual desirability.
 - When a Contractor's Personnel complains about comments made by another Contractor's Personnel on his/her appearance, the other Contractor's Personnel comment that he/she is "asking for it" because of how he/she dresses.
 - Unwelcome touching of a Contractor's or Employer's Personnel by another Contractor's Personnel.
 - A Contractor's Personnel tells another Contractor's Personnel that he/she will get him/her a salary raise, or promotion if he/she sends him/her naked photographs of himself/herself.

Others

Sub-Contracting

SCHEDULE OF SUBCONTRACTORS

Item	Element of work	Approximate value of sub-contract	% of bid price	Name and address of sub-contractor	Qualification and experience of sub-contractor on similar works of the elements executed

The Bidder shall enter in this schedule a list of the major sections and appropriate value of the work for which he proposed to use subcontractors [*for those costing more than 10% of the bid price for each element*], together with the names, addresses and experiences of the proposed subcontractors.

The capability of the sub-contractor will also be assessed (on the same lines as for the main Contractor) before according approval to him.

(Work should not be split into small parts and sub-contracted; but sub-contracting specialized elements of works is acceptable).

Others

Bidder's Qualification

To establish its qualifications to perform the contract in accordance with Section III (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder

Form ELI -1.1: Bidder Information Form

Date: _____
RFB No. and title: _____
Page _____ of _____ pages

Bidder's legal name

In case of Joint Venture (JV), legal name of each member:

Bidder's actual or intended country of registration:

[indicate country of Constitution]

Bidder's actual or intended year of incorporation:

Bidder's legal address [in country of registration]:

Bidder's authorized representative information

Name: _____

Address: _____

Telephone/Fax numbers: _____

E-mail address: _____

1. Attached are copies of original documents of

- Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITB 4.4.
- Authorization to represent the firm or JV named in above, in accordance with ITB 20.
- In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1.
- In case of state-owned enterprise or institution, in accordance with ITB 4.6 documents establishing:
 - Legal and financial autonomy
 - Operation under commercial law
 - Establishing that the Bidder is not under the supervision of the Employer

2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

Form ELI -1.2: Information Form for JV Bidders (Not Applicable)

(Where permitted as per BDS ITB 4.1)
(to be completed for each member of Joint Venture)

Date: _____
RFB No. and title: _____
Page _____ of _____ pages

JV Information
Bidder's Joint Venture legal name:
JV member's legal name:
JV member's country of registration:
JV member's year of constitution:
JV member's legal address in country of constitution:
JV member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of <input type="checkbox"/> Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB 4.4. <input type="checkbox"/> Authorization to represent the firm or JV named in above, in accordance with ITB 20. <input type="checkbox"/> In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and is not under the supervision of the Employer, in accordance with ITB 4.6.
2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

Form ELI -1.2 A

Subcontractor's Information Form (to be completed for each Subcontractor)

Date: _____
RFB No. and title: _____
Page _____ of _____ pages

Bidder's legal name:

Subcontractor's legal name:
Subcontractor's country of registration:
Subcontractor's year of constitution:
Subcontractor's legal address in country of constitution:
Subcontractor's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
Attached are copies of original documents of <input type="checkbox"/> Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB 4.4. <input type="checkbox"/> Authorization to represent the Subcontractor.

DETAILS OF PARTICIPATION IN THE JOINT VENTURE (Not Applicable)

PARTICIPATION DETAILS	FIRM 'A' (Lead Member)	FIRM 'B'	FIRM 'C'
Financial			
Name of the Banker(s)			
Planning			
Construction Equipment			
Key Personnel			
Execution of Work (Give details on proposed contribution of each)			

The Joint Venture should indicate the details of participation as above.

Form CON – 2: Historical Contract Non-Performance, Pending Litigation and Litigation History

[to be completed for the Bidder and for each member of a Joint Venture]

Bidder's Name: _____
 Date: _____
 Joint Venture Member's Name _____
 RFB No. and title: _____
 Page _____ of _____ pages

Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
<input type="checkbox"/> Contract non-performance did not occur since 1 st January <i>[insert year]</i> specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1.			
<input type="checkbox"/> Contract(s) not performed since 1 st January <i>[insert year]</i> specified in Section III, Evaluation and Qualification Criteria, requirement 2.1			
Year	Non-performed portion of contract	Contract Identification	Total Contract Amount (Rs.)
<i>[insert year]</i>	<i>[insert amount and percentage]</i>	Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for non-performance: <i>[indicate main reason(s)]</i>	<i>[insert amount]</i>
Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria			
<input type="checkbox"/> No pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3.			
<input type="checkbox"/> Pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3 as indicated below.			

Year of dispute	Amount in dispute (Rs.)	Contract Identification	Total Contract Amount (Rs.)
<i>[insert year]</i>	<i>[insert amount]</i>	<p>Contract Identification: [indicate complete contract name, number, and any other identification] Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Matter in dispute: <i>[indicate main issues in dispute]</i> Party who initiated the dispute: <i>[indicate "Employer" or "Contractor"]</i></p> <p>Status of dispute: <i>[Indicate if it is being treated by the Adjudicator, under Arbitration or being dealt with by the Judiciary]</i></p>	<i>[insert amount]</i>
<i>[insert year]</i>	<i>[insert amount]</i>	<p>Contract Identification: [indicate complete contract name, number, and any other identification] Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Matter in dispute: <i>[indicate main issues in dispute]</i> Party who initiated the dispute: <i>[indicate "Employer" or "Contractor"]</i></p> <p>Status of dispute: <i>[Indicate if it is being treated by the Adjudicator, under Arbitration or being dealt with by the Judiciary]</i></p>	<i>[insert amount]</i>
Litigation History in accordance with Section III, Evaluation and Qualification Criteria			
<input type="checkbox"/> No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4.			

Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below.

Year of award	Outcome as percentage of Net Worth	Contract Identification	Total Contract Amount (Rs.)
<i>[insert year]</i>	<i>[insert percentage]</i>	Contract Identification: <i>[indicate complete contract name, number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Matter in dispute: <i>[indicate main issues in dispute]</i> Party who initiated the dispute: <i>[indicate "Employer" or "Contractor"]</i> Reason(s) for Litigation and award decision <i>[indicate main reason(s)]</i>	<i>[insert amount]</i>

Form CON – 3: Environmental and Social (ES) Performance Declaration

[The following table shall be filled in for the Bidder, each member of a Joint Venture and each Specialized Subcontractor]

Bidder's Name: _____ *[insert full name]*
 Date: _____ *[insert day, month, year]*
 Joint Venture Member's or Specialized Subcontractor's Name: _____ *[insert full name]*
 RFB No. and title: _____ *[insert RFB number and title]*
 Page _____ *[insert page number]* of _____ *[insert page number]* pages

Environmental and Social Performance Declaration in accordance with Section III, Qualification Criteria, and Requirements			
<input type="checkbox"/> No suspension or termination of contract: An employer has not suspended or terminated a contract and/or called the performance security for a contract for reasons related to Environmental or Social (ES) performance since the date specified in Section III, Qualification Criteria, and Requirements, Sub-Factor 2.5.			
<input type="checkbox"/> Declaration of suspension or termination of contract: The following contract(s) has/have been suspended or terminated and/or Performance Security called by an employer(s) for reasons related to Environmental or Social (ES) performance since the date specified in Section III, Qualification Criteria, and Requirements, Sub-Factor 2.5. Details are described below:			
Year	Suspended or terminated portion of contract	Contract Identification	Total Contract Amount (Rs.)
<i>[insert year]</i>	<i>[insert amount and percentage]</i>	Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for suspension or termination: <i>[indicate main reason(s) e.g. for gender-based violence; sexual exploitation or sexual abuse breaches]</i>	<i>[insert amount]</i>
<i>[insert year]</i>	<i>[insert amount and percentage]</i>	Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for suspension or termination: <i>[indicate</i>	<i>[insert amount]</i>

		<i>main reason(s)</i>	
...	...	<i>[list all applicable contracts]</i>	...
Performance Security called by an employer(s) for reasons related to ES performance			
Year	Contract Identification		Total Contract Amount (Rs.)
<i>[insert year]</i>	Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for calling of performance security: <i>[indicate main reason(s) e.g. for gender-based violence; sexual exploitation or sexual abuse breaches]</i>		<i>[insert amount]</i>

Form CCC: Current Contract Commitments / Works in Progress

Bidders should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

(A) Existing commitments and on-going works:

Description of Work	Place & State	Contract No. & Date	Name and Address of Employer	Value of Contract (Rs. equivalent in million)	Stipulated period of completion	Value of works ¹ remaining to be completed (Rs. equivalent in million)	Anticipated date of completion	Average Monthly Invoicing Over Last Six Months (Rs./month) Equivalent in millions)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

¹ Attach certificate(s) from the Engineer(s)-in-Charge.

(B) Works for which bids already submitted and likely to be awarded – expected additional commitment.

Description of Work	Place & State	Name and Address of Employer	Estimated value of Works (Rs. equivalent in million)	Stipulated period of completion	Date when decision is expected	Remarks, if any
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Form FIN – 3.1: Financial Situation and Performance

[To be completed by the Bidder and by each member of a Joint Venture]

Bidder's Legal Name: _____

Date: _____

Joint Venture Member's Legal Name _____

RFB No. and title: _____

Page _____ of _____ pages

1. Financial data

SUMMARY OF FINANCIAL STATEMENTS							
Name of bidder/JV Member:							
(Equivalent Rs. Million)							
S.No.	Financial Information in Rupee equivalent with exchange rate at the end of concerned year	Actuals for Previous five years excluding the current financial year					Ref. of Page Nos. of Balance Sheets
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Total Assets						
2.	Total Turnover						
3.	Current Assets						
4.	Current Assets + Loan &						
5.	Advances						
6.	Total Liabilities						
7.	Current Liabilities						
8.	Current liabilities & provision						
9.	Profit before Interest and Tax						
10.	Profit before Tax						
11.	Profit after Tax						
12.	Shareholder's Funds (Net						
13.	Worth)=(Paid up equity						
14.	+Reserves)-(revaluation						
15.	reserves + Miscellaneous						
16.	expenditure not written off)						
17.	Depreciation						
18.	Current Ration (2)/(5)						
19.	Net cash accruals= Profit after						
20.	Tax + depreciation						

This information should be extracted from the Annual Financial Statements/ Balance sheets, which should be enclosed. Year 1 will be the latest year for which audited financial statements are available. Year 2 shall be the year immediately preceding year 1 and year 3 shall be the year immediately preceding Year 2.

2. Sources of Finance

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

No.	Source of finance	Amount (Rs.)
1		
2		
3		

3. Financial documents

The Bidder and its parties shall provide copies of financial statements for _____ years pursuant Section III, Evaluation and Qualifications Criteria, Sub-factor 3.2. The financial statements shall:

- (a) reflect the financial situation of the Bidder or in case of JV member, and not an affiliated entity (such as parent company or group member).
 - (b) be independently audited or certified in accordance with local legislation. In case of Indian bidders, the financial statements shall be audited by a certified chartered accountant.
 - (c) be complete, including all notes to the financial statements.
 - (d) correspond to accounting periods already completed and audited.
- Attached are copies of financial statements¹ (balance sheets, including all related notes, and income statements) for the _____ years required above; and complying with the requirements

¹ If the most recent set of financial statements is for a period earlier than 12 months from the date of bid, the reason for this should be justified.

Form FIN - 3.2: Average Annual Construction Turnover

[To be completed by the Bidder and by each member of a Joint Venture]

Bidder's Legal Name: _____

Date: _____

Joint Venture Member's Legal Name _____

RFB No. and title: _____

Page _____ of _____ pages

Annual turnover data (construction only)	
Year	Amount in Rs.
<i>[indicate year]</i>	<i>[insert amount]</i>
2015-16	
2016-17	
2017-18	
2018-19	
2019-20	
Average Annual Construction Turnover *	

* See Section III, Evaluation and Qualification Criteria, Sub-Factor 3.2. Annual construction turnover calculated as total certified payments received for work in progress or completed, for 5 years. This should be certified by a Chartered Accountant.

JOINT VENTURE (Not Applicable)

Names of all members of a joint venture
1. Member in charge
2. Member
3. Member

Total value of annual construction turnover, in terms of work billed to clients, in Rupees

Annual Turnover Data (construction only; in Rs. *)							
Member	Form 3.2 page no.	Year 1	Year 2	Year 3	Year 4	Year 5	Average
1. Member in charge							
2. Member							
3. Member							
TOTALS							

*** To be certified by a chartered accountant**

Name and address of Bankers to the Joint Venture

Provide details regarding financial responsibility and participation (percentage share in the total) of each firm in the Joint Venture. Attach a Memorandum of Understanding for the Proposed Agreement of joint Venture which should lay down responsibility regarding work and financial arrangements in respect of each of the firm in the Joint Venture (Refer also ITB Clause 4.1).

Form FIN - 3.3: Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as specified in Section III, Evaluation and Qualification Criteria.

Source of financing	Amount (Rs.)
1.	
2.	
3.	
4.	

FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CASH FLOW
[To be given from a Nationalized or Scheduled Bank in India- No substitute other than this will be acceptable]

Clause 3.1(ii) of Section III – Qualification Criteria

(1) AVAILABILITY OF CASH FLOW (WORKING CAPITAL)

This is to certify that M/s. _____ is a reputed company with a good financial standing.

If the contract for the works, namely _____ [funded by the World Bank] is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs. equivalent _____ to meet their capital requirements for executing the above contract.

-- Sd. --

Name of Bank Manager

Senior Bank Manager

Address of the Bank

*** Change the text as follows for Joint venture:**

This is to certify that M/s. who has formed a JV with M/s. and M/s. for participating in this bid, is a reputed company with a good financial standing.

If the contract for the work, namely [funded by the World Bank] is awarded to the above Joint Venture, we shall be able to provide overdraft/credit facilities to the extent of Rs. to meet the working capital requirements for executing the above contract.

[This should be given by the JV members in proportion to their financial participation.]

Form EXP - 4.1: General Construction Experience

[The following table shall be filled in for the Bidder and for each member of a Joint Venture]

Bidder's Legal Name: _____
 Date: _____
 Joint Venture Member's Legal Name _____
 RFB No. and title: _____
 Page _____ of _____ pages

[Identify contracts that demonstrate continuous construction work over the past [5] years pursuant to Section III, Qualification Criteria and Requirements, Sub-Factor 4.1. List contracts chronologically, according to their commencement (starting) dates.]

Starting Month/Year	Ending Month/Year	Contract Identification	Role of Bidder <i>["Contractor" or "JV Member" or "Subcontractor" or "Contract"]</i>
		Contract name: _____ Brief Description of the Works performed by the Bidder: _____ Amount of contract: _____ Name of Employer: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Bidder: _____ Amount of contract: _____ Name of Employer: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Bidder: _____ Amount of contract: _____ Name of Employer: _____ Address: _____	

Form EXP - 4.2(a): Specific Construction and Contract Management Experience

[The following table shall be filled in for contracts performed by the Bidder, each member of a Joint Venture, and specialist sub-contractors]

Bidder's Legal Name: _____
Date: _____

Joint Venture Member's Legal Name _____
RFB No. and title: _____
Page _____ of _____ pages

Work performed as prime Contractor or JV Member or Sub-Contractor or Management Contractor (in the same name and style) on construction works of a similar nature and volume over the last five years². *[Attach certificate from the Engineer-in-charge.]*

Similar Contract No.	Information			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor <input type="checkbox"/>	Member in JV <input type="checkbox"/>	Management Contractor <input type="checkbox"/>	Sub-contractor <input type="checkbox"/>
Total Contract Amount	Rs. *			
If member in a JV or subcontractor, specify participation in total Contract amount			*	
Employer's Name:				
Address:				
Telephone/fax number				
E-mail:				

² Immediately preceding the financial year in which bids are received.

Form EXP - 4.2(a) (cont.)
Specific Construction and Contract Management Experience (cont.)

Similar Contract No.	Information
Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III:	
1. Amount	
2. Physical size of required works items	
3. Complexity	
4. Methods/Technology	
5. Construction rate for key activities	
6. Other Characteristics	

Form.....

(Name of the Project)

(Declaration regarding tax/duty exemption for materials/construction equipment bought for the work)

(Bidder's Name and Address)

To:
(Name of the Employer & address)

Dear Sir:

Re: [Name of Work].....

Certificate for Import/Procurement of Goods/Construction Equipment

Government Order/Circular Number under which tax/duty Exemption is being sought:

1. We confirm that we are solely responsible for obtaining tax/duty waivers which we have considered in our bid and in case of failure to receive such waivers for reasons whatsoever, the employer will not compensate us.
2. We are furnishing below the information required by the Employer for issue of the necessary certificates in terms of the Government of India's relevant Notifications.
3. The goods/construction equipment for which certificates are required are as under:

Items (modify the list suitably for each specific work)*	Make/ Brand Name	Capacity [where applicable]	Quantity	Value	State whether it will be procured locally or imported [if so from which country]	Remarks regarding justification for the quantity and their usage in works.
Goods						
[a] Bitumen						
[b] Cement						
[c] Steel						
Construction Equipment						

4. We agree that no modification to the above list is permitted after bids are opened.

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5. We agree that the certificate will be issued only to the extent considered reasonable by the Employer for the work, based on the Bill of Quantities and the construction program and methodology as furnished by us along with the bid.
6. We confirm that the above goods and construction equipment will be exclusively used for the construction of the above work and the construction equipment will not be sold or otherwise disposed of in any manner for a period of five years from the date of acquisition.

Date: _____

Place: _____

(Signature) _____

(Printed Name) _____

(Designation) _____

(Common Seal) _____

[This certificate will be issued within 60 days of signing of contract and no subsequent changes will be permitted.]

*** Modify the above to suit the requirements given in Government of India's Notifications as current of date of bidding.**

Section V - Eligible Countries

Eligibility for the Provision of Goods, Works and Non-consulting Services in Bank-Financed Procurement

In reference to ITB 4.8, and 5.1, for the information of the Bidders, at the present time firms, goods and services from the following countries are excluded from this Bidding process:

Under ITB 4.8 (a) and 5.1 : *None*

Under ITB 4.8 (b) and 5.1 : *None*

[Note: as and when some country/ countries become ineligible insert the list of such countries following approval by the Bank to apply the restriction]

Section VI - Fraud and Corruption

(Section VI shall not be modified)

1. Purpose

1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders, (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

a. Defines, for the purposes of this provision, the terms set forth below as follows:

- i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
- iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- v. "obstructive practice" is:
 - (a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

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- (b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.
- b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- d. Pursuant to the Bank's Anti- Corruption Guidelines and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;³ (ii) to be a nominated⁴ sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;
- e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect⁵ all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

³ For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

⁴ A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

⁵ Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

PART 2 – Works’ Requirements

Section VII - Works' Requirements

Specifications

TECHNICAL SPECIFICATIONS

SECTION-1.0

CIVIL WORKS

1. CEMENT:

- 1.1. The cement used shall be one of the following types:
 - i) Ordinary Portland cement conforming to IS:269 – 1976
 - ii) Portland Pozzolana cement conforming to IS: 1489
- 1.2. Whenever possible all cements of each type shall be obtained from one constant source throughout the contract. Cement of different types shall not be mixed one with the other. Different brands of cements, or the same brand of cement from different sources, shall not be used without prior notification and approval.
- 1.3. The cement shall be supplied either packed in bags or in silos installed for the purpose of supply. Packed cement shall be delivered to the site in original sealed bags which shall be labelled with the weight, date of manufacture, name of manufacturer, brand and type. A Cement received in torn bags shall not be used.
- 1.4. All cement shall be fresh when delivered and at ambient atmospheric temperature.
- 1.5. In fair faced elements, the cement used in the concrete for any complete element shall be from a single consignment. All cement for exposed concrete shall be from the same approved source and uniform in colour.

2. AGGREGATES:

A Aggregates from natural sources shall be in accordance with IS: 383. The contractor shall test aggregate at site in accordance with IS 2386. The contractor shall allow for and provide all necessary apparatus for carrying out such tests and for supplying test records to the consultant agency.

B. The contractor shall ensure that aggregates are free from iron pyrites and impurities which may cause discoloration.

C. FINE AGGRAGATE:

- i) All aggregate shall comply to IS: 2386 Part-II. The fine aggregate shall be pit sand stone dust or other approved sand. It shall be free from clay, loam, harmful chemical impurities. It shall be clean, sharp, strong, and angular and composed of hard siliceous materials.
- ii) Fine sand shall be within the limits of Grading Zone IV of relevant IS code, as given in Table I. When the grading falls outside the percentage limits given for sieves other than 600 micron, 300 micron and 150 micron (I.S.) sieves but not more than 5 percent, it shall be regarded as falling within this zone. The 5 percent shall be summation of excess on all other services

TABLE – I : FINE AGGREGATE

IS SIEVE	PERCENTAGE PASSING FOR GRADING			
	Zone - I	Zone - II	Zone - III	Zone - IV
10mm	100	100	100	100
4.75mm	90-100	90-100	90-100	95-100
2.36mm	60-95	75-100	85-100	95-100
1.18mm	30-70	55-90	75-100	90-100
600 micron	15-34	35-59	35-60	80-100
300 micron	5-20	8-30	8-30	20-65

150 micron	0-10	0-10	0-10	0-15
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- iii) The maximum quantity of silt as determined by the method prescribed in I.S.2386 Part II shall not exceed 8 percent. Stone dust shall be obtained by crushing hard stone and the grading as determined by the method prescribed in IS:2386 Part-II. It shall be within the limits above for the sieves other than 600 micron (I.S.) Sieves should not be more than 5 percent and for 150 micron sieve should not be more than 20 percent.

D. COARSE AGGREGATE:

- i) For reinforced concrete work coarse aggregate shall be crushed stone, river shingle or approved pit gravel having nominal maximum size of 20 mm and down as approved by Engineer-in-charge.
- ii) Coarse aggregate obtained from crushed or broken stone shall be angular, hard, strong, dense, durable, clean and free from soft, friable, thin flat, elongated or flaky pieces.
- iii) River shingle or pit gravel shall be rounded sound, hard, clean, nonporous, suitably graded in size with or without broken fragments and free from flat particles of shale, clay silt, loam and other impurities.
- iv) Except where it can be shown to the satisfaction of the Engineer-in-charge, supply of properly graded aggregate of uniform quality can be maintained over the period of the works, the grading of aggregate shall be controlled by obtaining the coarse aggregate in different sizes and blending them in correct proportions as and when required.

3. STEEL:

3.1. STEEL REINFORCEMENT:

- i) Steel reinforcing bars shall be TMT conforming to IS :14786-1979 or IS : 1139-1966 (Grade Fe 415) or mild steel bars conforming to Grade I of IS : 432 (Part I) – 1966
- ii) For checking nominal mass, tensile strength, band test, re-band- test etc. specimen of sufficient length shall be cut from each size of the bar at random at frequency not less than that specified below:-

Size of Bar	For consignment below 100 tonnes	For consignment over 100 tonnes
Under 10mm dia	One sample for each 25 tonnes or part there of	One sample for each 40 tonnes or part there of.
10mm-16mm dia.	One sample for each 35 tonnes or part there of	One sample for each 45 tonnes or part there of.
Over 16mm dia	One sample for each 45 tonnes or part there of	One sample for each 50 tonnes or part there of.

- iii) Steel brought to site and steel remaining unused shall not be moved from site without the written permission of the Engineer-in-charge.
- iv) The use of cold twisted bars is not permitted.

3.2 BINDING WIRE:

Reinforcement binding wire shall be best black annealed mild steel wire, approximately 1.6 mm in diameter.

3.3 BAR SIZES:

Bar size of various components of building shall be as the following or as conformed by the engineer-in-charge.

- i) Column footing - 20mm diameter.
- ii) Plinth Beams - 16mm diameter.

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- iii) Main Beams - 16mm diameter.
 - iv) Columns - 20mm diameter.
 - v) Lintel Beams - 12mm diameter.
 - vi) Chajjas - 8mm diameter.
 - vii) Staircase slab - 16mm diameter.
 - viii) Slabs - 10mm diameter.
 - ix) Stirrups&Ties - 8mm diameter.

3.4 STRUCTURAL STEEL:

All finished rolled steel sections shall be of weldable quality in accordance with latest edition of IS 226 and shall be approved by the Engineer-in-charge.

4. WATER:

A. Water used in the works shall be potable water and free from deleterious materials. water used for mixing and curing concrete as well as for cooling and/or washing aggregate shall be fresh and clean, free from injurious amounts of oil, salts, acids, alkali, other chemicals and organic matter.

B. Water shall be from the source approved by the Engineer-in-charge and shall be in accordance with clause 4.3 of IS: 456.

C. Before starting any concreting work and wherever the source of water changes, the water shall be tested for its chemical and other impurities to ascertain its suitability for use in concrete for approval of the Engineer-in-charge. No water shall be used until tested and found satisfactory. Cost of all such tests shall be borne by the contractor.

5. STORAGE:

All goods and products covered by these specifications shall be procured well in advance and stored as specified below:

A. CEMENT:

- i) Cement shall be stored on raised floor in dry weather proof and draught free but well ventilated shed.
- ii) Cement bags shall be stacked at least 60 cm away from external walls and in stacks of not more than ten bags to avoid lumping under pressure.
- iii) Cement stored during monsoons or cement expected to be in store for more than eight weeks shall be completely enclosed in 500 gauge polythene sheet so arranged that the flap closes on the top stack. The contractor shall ensure that protective polythene sheet is not damaged at any time during use.
- iv) Cement of different types shall be stored in separate sheds or separate compartment of a shed. If different types of cement are mixed, the Engineer-in-charge will have the discretion to reject all the cement/concrete concerned.
- v) Consignment of cement shall be used in order of delivery. A record shall be kept of the batch numbers of cement deliveries in such a form that the part of the works in which the cement is used can be readily identified.
- vi) The contractor shall be responsible for the storage of cement at the site and no claim will be entertained in the event of any damage occurring to cement due to faulty storage by the contractors or on account of his negligence.
- vii) If cement is stored on site for a period longer than eight weeks it shall be tested to the satisfaction of the Engineer-in-charge before it is used in the works.
- viii) Cement which has so deteriorated in quality that it no longer conforms in all respects to the requirements of this specification will be condemned by the Engineer-

in-charge - and shall not be used in the works. The contractor shall immediately remove from the site all cement which has been so condemned.

B. AGGREGATE:

- i) Aggregates shall be stored as per 18:4082: 1977 on a suitable well drained raft of concrete, timber, metal or other approved material. The storage of aggregate on the ground will not be permitted.
- ii) Each size of aggregate shall be stored separately in such a manner as to prevent spillage and mixing of one aggregate with an adjacent aggregate. The dividing walls of any bins shall be of sufficient height and the aggregate shall be so deposited that a distance of 300mm shall be left between the top of the division wall and any part of the aggregate stack
- iii) When stack piling, the aggregate shall not form pyramids resulting in segregation of different size particles. The stacks shall be regular and of a height not exceeding two meters.

C. STEEL:

- i) Reinforcement for structures shall be handled and stored in a manner that will prevent bending out of the desired shape and any accumulation of dirt, oil and paint. When placed in the works it shall be free from dirt, oil, grease, paint, mill scale and loose or thick rust.
- ii) It shall be stored in such a way as to avoid distortion and to prevent deterioration and corrosion. Steel reinforcement, shall be stored clear of the ground, on rack or otherwise supported, covered in bundles indicating the type, number, size, length, diameter and date of delivery to the site of the bars or fabric reinforcement as per relevant I.S. 226 and as Directed by the Engineer-in-charge.

6. CONCRETE MIX PROPORTIONS:

Cement concrete used in the works shall be either of the two categories given below.

A. All cement concrete not designated by strength shall be treated as ordinary concrete of nominal mix as specified. The aggregates and cement shall be as specified. The aggregates and cement shall be measured by volume. Mixing water shall be measured in graduated litre cans.

B. Controlled Concrete

- i) All cement concrete designated by strength shall be treated as controlled concrete. The aggregates and cement shall be measured by weight in approved weight batching equipment. Mixing water shall be measured in graduated litre cans. In case cement is supplied packed in bags one or more complete bags of cement shall be used for each batch of concrete where concrete mixers are allowed to be used.
- ii) The controlled concrete shall meet with the strength requirement laid down IS : 516 – 1959.
- iii) The contractor shall be responsible for designing mixes of the specified performance to suit the degree of workability and strength. Required for the various parts of the works.
- iv) Alternative mixes may be designed by the contractor for use in both thin and narrow section and thick sections. Special mixes using finer aggregates may be designed by him for infilling pockets and narrow spaces and for regions of congested reinforcement.
- v) The maximum water cement ratio for all grade of ordinary concrete shall not be more than 0.5.

7. STRENGTH OF CONCRETE:

The compressive strength on work tests for different nominal mixes is given in following Table:-

Concrete Mix	Compressive strength	
	7 days	28 days
1:1:5:3	140	210
1:2:4	106	158
1:1:2	175	265

8. WATER CEMENT RATIO:

- i) The quantity of water added to the cement and aggregate during mixing shall be such as to produce a concrete having sufficient workability to enable it to be properly compacted to be worked into the corners of the shuttering and around reinforcement.
- ii) Due amount shall be taken of the variation of moisture content, within any consignment of aggregate and any variations due to watering, exposure to rain or drying weather. The contractor shall carry out regular moisture content tests in accordance the Engineer-in-charge and results submitted to him.
- iii) In case of ordinary concrete the maximum value of water cement ratio shall be 0.50 and in the case of controlled concrete the water cement ratio is determined by the mix design.
- iv) The contractor shall exercise particularly tight control on the water content for fairfaced concrete the colour of which is sensitive to small variations of water in the mix.
- v) When a suitable water cement ratio has been determined and agreed by the Engineer-in-charge, it shall be maintained throughout the corresponding part of works. Approved tests shall be undertaken periodically by the contractor to satisfy the Engineer-in-charge of the maintenance of the consistency. However the amount of water added to a mix other than for fair faced concrete may be reduced below the agreed design amount with the consent of the Engineer-in-charge if the contractor is able to demonstrate that such a reduction is consistent with producing concrete of the required workability and characteristic strength.
- vi) The contractor shall frequently test the concrete for slump cone test. The slump at the actual location of placing as measured in accordance with the methods laid down in IS:1199 shall be as per IS.456.2000.

9. CONCRETE MIXING:

- i) All concrete in the correct proportion of ingredients approved by the CONSULTANT whether ordinary or controlled, shall be mixed in an approved mixer for the minimum time necessary to ensure adequate quality and uniform distribution of the materials. The cement and aggregates shall normally be first mixed dry until all particles of aggregate are coated with cement after which the water shall be added.
- ii) Allowance shall be made for the moisture content of the aggregate when calculating the amount of water to be added for each mix.
- iii) The temperature of the aggregate, water and cement when added to the mixer shall be such that the temperature of the concrete at the time of placement is less than 40o C.

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- iv) Materials for concrete shall be deposited into the drum while it is in rotation. Mixers shall not be loaded beyond their rated capacity and each batch shall be completely discharged from the drum before recharging takes place.
 - v) Facilities shall be provided to spray the mixer drum with cool water between batches and on the completion of concreting the drum shall be washed down. The surface of the mixer drum shall be maintained in a clean condition at all times
 - vi) Re-tampering and/or mixing of concrete which has partially hardened and set will not be permitted under any circumstances.

10. CONCRETE TRANSPORTING:

- i) The period between mixing the concrete and placing it in the final position shall be kept to a minimum and the delivery of concrete shall be co-ordinate with the rate of placement to avoid delays in delivery and placement.
- ii) Concrete shall be handled from the place of mixing to the place of final deposit by methods, which prevent segregation, loss of ingredients and contamination and maintain the required workability
- iii) Should any segregation have occurred in any batches arriving at the place of deposition, such batches shall be rejected and shall not be allowed to use
- iv) Where concrete is conveyed by chutes, the chutes shall be made of metal or fitted with metal linings. The approval of the Engineer-in-charge shall be obtained for the use of chutes more than 3 meters long.
- v) All plant and equipment used in the transportation of concrete shall be thoroughly cleaned before and after each working period and at all changes of concrete mixes.
- vi) All major concreting shall be done by concrete pump. A concrete pump of capacity 38- 40m³/hr. shall be installed for the purpose and necessary approval for the concrete pump delivery system with adequate boom length, pipe line and associated items shall be obtained before installation of the concrete pump. There shall also have the provision of an approved standby system in case of any eventualities for transporting the concrete.

11. PREPARATION BEFORE CONCRETING

- i) The inside surface of the forms against which concrete is to be placed shall be clean and free from dried or hardened spattering or coatings of concrete. The forms shall be well wetted before placing concrete.
- ii) When the work has to be resumed on a surface which has hardened, such surface shall be roughened. It shall then be swept clean, thoroughly wetted and covered with 12mm layer of freshly mixed mortar composed of cement and sand (in the same ratio as the cement and sand in the concrete mix) immediately before placing of concrete
- iii) Concrete shall be handled from the place of mixing to the place of final deposit by methods which prevent segregation, loss of ingredients and contamination and maintain the required workability.

12. PLACING:

- i) Concreting of any portion of the works shall be done only in the presence of the representatives of the Engineer-in-charge.
- ii) Concreting shall be carried out continuously between construction, contraction or expansion joints as agreed with Engineer-in-charge. The contractor shall closely follow the sequence of concreting where such is specified in the drawings. If

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- concreting is interrupted before reaching the predetermined joint an approved construction joint shall be provided after obtaining necessary approval from Engineer-in-charge.
- iii) Immediately before placing of concrete for columns and walls, the reinforcement within and the old concrete at the bottom of the formwork shall be given a coating of cement sand mortar of the identical materials and proportions to be used in the subsequent concrete, to prevent the loss of fine material from the initial concrete pour.
 - iv) Concrete shall be deposited as nearly as is practicable to its final position and shall not be dumped in a large quantity at any point to be run or worked along the formwork manually or with vibrators. Concrete shall not be deposited at a faster rate than it can be placed and compacted.
 - v) Concrete shall be thoroughly worked into the forms so that they are entirely filled; reinforcing bars adequately and tightly surrounded and entrained air released from the mass of concrete. Placing shall be carried out with the use of vibrators in a manner directed by the Engineer-in-charge.
 - vi) For members having thickness more than 300 mm, the concrete shall be placed in layers not greater than 300 mm thickness and thoroughly compacted before succeeding layers are placed. Concrete of thickness less than 300mm shall be placed in single operation to the full thickness of slabs, beams and similar members. No concrete shall be placed on concrete which has set sufficiently to cause the formation of planes of weakness and where there is likely to occur due to unforeseen circumstances.

13. COMPACTION:

- i) Each layer of concrete whilst being deposited shall be compacted by approved methods to form a dense material with all surface free from honey combing, air holes or other blemishes. The contractor shall use mechanical vibration for all concrete and shall take care that internal vibrators shall not be brought into contact with the reinforcement or their formwork. An adequate number of vibrators shall be used to ensure that compaction of concrete is achieved within 10 minutes of placing. Particular attention shall be given to the compaction of concrete around the water bars to ensure that no voids or p areas are left.
- ii) Compacting shall cease as soon as excess water appears on the face of concrete. Any water accumulating on the surface of newly placed concrete shall be removed by approved methods and no further concrete shall be placed thereon until such water has been removed.
- iii) Notwithstanding the requirements regarding mix design, should it be found that the proportion of water in the mix is such the laitance forms before compaction (i.e. completion of expulsion of that air) is complete; the quantity of water in the mix shall be reduced. If required, approved admixture / plasticizer could be used to achieve necessary workability. Whenever either of the aforesaid procedures are to be adopted, an additional set of 6 cubes for testing at 7 or 28 days shall be made from the changed mix. The time elapsed between the discharge of the concrete from the mixer and the completion of compaction shall not exceed 30 minutes. A sufficient number of spare vibrators shall be kept readily accessible to the place of deposition of concrete to assure adequate vibration in case of breakdown of those in use.

14. FINISHES:

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- i) All concrete surfaces shall have a good, dense finish. Except for slabs the face of concrete for which formwork is not provided shall be smoothed with a steel or wooden trowel to provide a finish equal to that face where formwork is provided.
 - ii) The top surfaces of all floor and roof slabs specified as smooth shall be levelled and trowled before the concrete sets to a smooth finish at the levels of falls shown on the drawings. The trowling shall be done at such a time and in such a manner that an excess of mortar is not brought to the surface of concrete nor the aggregate displaced. The top surfaces of concrete slabs specified to receive an integral finish shall be uniformly roughened by deep hacking before the finish is laid.
 - iii) Immediately after striking the formwork and removing any superficial water, honeycombed areas in normal unfinished concrete shall be inspected by the Engineer-in-charge and where directed the contractor shall immediately make good at his own expense such honeycombing in accordance to the instruction and guide line of Engineer-in-charge whilst the concrete is still green. All air holes shall be similarly filled in.
 - iv) The contractor shall be responsible for providing an adequate key in concrete where plastering or rendering is specified to be applied. Hacking of the concrete surface immediately after striking the formwork will be permitted.
 - v) The faces of all fair faced concrete shall be of even colour throughout, free from air bubbles, cracks, honeycombing or other blemishes and will be inspected by the Engineer-in-charge immediately after the formwork has been struck. Such faces shall not be rubbed down after striking the formwork to remove fins, excrescences or any similar imperfections without the prior permission of the Engineer-in-charge.
 - vi) Concrete surface finishes shall be according to the requirements and all instructions by the Engineer-in-charge with regard to the method of achieving such finishes shall be implemented.

15. CURING AND PROTECTION:

- i) Walking on concrete shall not be permitted for at least 24 hours after it has been placed in position or for such additional length of time as the Engineer-in-charge may direct.
- ii) Immediately after compaction and completion of any surface finishes, the concrete shall be protected from the evaporation of moisture by means of polythene sheeting, wet Hessian or other similar material kept soaked by spraying. As soon as the concrete has attained a degree of hardening sufficient to withstand surface damage, moist curing shall be implemented and maintained for a period of at least 15 days after casting.
- iii) Method of curing and their duration shall be such that the concrete will have satisfactory durability and strength and members will suffer a minimum distortion, be free from excessive efflorescence and will not cause, by its shrinkage, undue cracking in the works.
- iv) The top surfaces of slabs and other horizontal surfaces shall be cured by impounding water in cement mortar bunds. Steeply sloping and vertical formed surfaces shall be kept completely and continuously moist prior to and during the striking of formwork by applying water to the top surfaces and allowing it to pass down between the formwork and the concrete.
- v) The Contractor shall give careful consideration to the curing methods and conditions for fair faced concrete. Components which are specified to have exposed concrete

finish shall receive the same curing treatment. Moreover water used for curing shall be clean so as not to discolour the concrete.

- vi) All fair-faced concrete shall be protected from damage from the time of striking the formwork. All edges and surfaces of such concrete shall be protected from chipping using notched timber or aluminium corner pieces or other suitable covers which shall be maintained in place until the completion of the works.

16. CRACKS:

- i) If any cracks develop in the reinforced cement concrete construction which in the opinion of the Engineer-in-charge may be detrimental to the strength of the construction, the contractor at his own expense shall test the structural element in question. If under these test loads the cracks shall develop further the contractor at his own expense shall dismantle the construction, cart away the debris, replace the construction and carryout all consequential work there to at no extra cost. If the cracks are not detrimental to the stability of the construction in the opinion of the Engineer-in-charge the contractor at his own expense shall grout the cracks with pneumatically applied mortar or epoxy grout or by other specified treatment as directed by the Engineer-in-charge at his own expense and risk he shall also made good al other building work such as plaster, moulding, surface finish of floors, roofs, ceiling etc. which in the opinion of the Engineer-in-charge have suffered damage either in appearance or stability owing to such cracks.
- ii) The repair work shall be carried out to the satisfaction of the Engineer-in-charge. The decision of the Engineer-in-Charge as to the extent of the liability of the contractor in the above matter shall be final and binding on the contractor.

17. LOAD TESTING ON COMPLETED STRUCTURES:

- i) During the period of construction or within the defect liability period the Engineer-in-Charge may at his discretion order the load testing of any completed structure or any part thereof if he has reasonable doubts about the adequacy of the strength of such structure for any the following reasons:
 - a) Results of compressive strength on concrete test cubs.
 - b) Premature removal of formwork.
 - c) Inadequate curing of concrete.
 - d) Over loading during the construction of the structure or part thereof.
 - e) Carrying out concreting of any portion without prior approval of the Engineer-in-Charge.
 - f) Honey combed or damaged concrete which in the opinion of the Engineer-in-Charge is particularly weak and will affect the stability of the structure to carry the design load, more so in important or critical areas of the structure.
 - g) Any other circumstances attributable to alleged negligence of the contractor which in the opinion of the Engineer-in-Charge result in the structure or any part thereof being of less than the expected strength.
- ii) All the loading tests shall be carried out by the contractor strictly in accordance with the instructions of the Engineer-in-Charge. Such tests should be carried out only after expiry of minimum 28 days or such longer period as directed by the Engineer-in-Charge.
- iii) The structure should be subjected to a super imposed load equal to 1.25 times the specified superimposed load assumed in the design. This load shall be maintained for

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- a period of 24 hours before removal. During the test, struts strong enough to take the whole load shall be placed in position leaving a gap under the members as directed.
- iv) The deflection due to the superimposed load shall be recorded by sufficient number of approved deflect meters capable of reading up to 1/500 of a cm and located suitably under the structure as directed by the Engineer-in-Charge. If within 24 hours of the removal of the superimposed load, the structures do not recover at least 75% of the deflection under the superimposed load, the test loading shall be repeated after a lapse of 72 hours. If the recovery after the second test is less than 80% of the maximum deflection shown during the second test, the structure shall be considered to have failed to pass the test and shall be deemed to be unacceptable.
 - v) In such cases the part of the work concerned shall be taken down or cut out and reconstructed to comply with the specifications. Other remedial measures may be taken to make the structure secure at the discretion of the Engineer-in-Charge. Moreover, such remedial measures shall be carried out to the complete satisfaction of the Engineer-in-Charge.
 - vi) All costs involved in carrying out the tests and other incidental expense thereto shall be borne by the contractor regardless of the result of the tests. The Contractor shall take down or cut out and reconstruct the defective work or shall make the remedial measures instructed at his own cost.
 - vii) In addition to the above load tests, non destructive test methods such as core test and ultrasonic pulse velocity test shall be carried out by the Contractor at his own expense if so desired by the Engineer-in-Charge. Such tests shall be carried out by an agency approved by the Engineer-in-Charge and shall be done under expert's guidance using only recommended testing equipment. The acceptance criteria for these tests shall be in accordance to IS:1959 and IS:456-1978.

18. MASONRY WORK – BRICK WORK:

- i) Bricks shall be sound, hard, well-burnt, uniform in size, shape and colour, homogeneous in texture, giving a metallic ringing sound, free from flaws, cracks, holes, lumps or grit and arises should be square, straight and sharply defined. They shall not break when struck against each other and dropped flat from a height of 1 m to the ground. They shall conform to IS 1077 giving classes of common burnt clay bricks.
- ii) Bricks shall be as specified and detailed in BOQ. It shall have to be approved prior to procurement. Bricks shall be obtained from an approved source and shall be of uniform colour, size, shape. Bricks shall have smooth rectangular faces with sharp straight right angle edges. Maximum absorption shall not be more than 20% of its dry weight on immersion in water for 24 hours. Minimum crushing strength shall be 35 kg/sq. cm.
- iii) Bricks of approved quality and quantity shall have to be procured by the contractor at the desired time. No delay or extra cost due to nonavailability shall be accepted. The contractor is obliged to carry out the work as specified. It shall be the responsibility of the contractor to procure sufficient quantities of bricks and stack them at site or elsewhere to avoid delays.
- iv) Mortars : Cement for masonry shall be prepared in accordance with IS 2250 code of practice for preparation and use of masonry mortars.
- v) Cement : Cement used shall be :-

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- a) Ordinary Portland cement conforming to IS:269 – 1976
 - b) Portland Pozzolana cement conforming to IS: 1489

It shall be received in bags of 50 kg (or in bulk carriers in case of storage in silos) and each batch shall be accompanied with test certificate of the factory. Also it shall be tested before use to ascertain its strength, setting time, etc. In case cement has been stored for over 6 months from date of manufacturer or for any reasons the stored cement shows signs of deterioration or contamination, it shall be tested as per the direction of the Engineer-in-charge prior to use in the works.

- vi) Water : Water used for masonry shall be potable conforming to IS, clean and free from injurious amounts of deleterious materials.
- vii) Fine Aggregates : Sand shall conform to IS 2116 specification for sand for masonry mortars. Only river sand shall be used.

19. DEFECTIVE CONCRETE WORK:

If the results of load test or core test on any concrete structure found unsatisfactory or unacceptable, the concrete work and the structure shall be removed and redone by the contractor at his own risk and cost as instructed by Engineer-in-Charge.

20. SUPERVISION:

All concreting work shall be done under strict supervision of the qualified and experienced representatives of the Contractor as well as those of the Engineer-in-Charge. The contractor's supervisor who are in-charge of concreting work shall be skilled in this class of work and shall personally superintend all the concreting operations.

21. QUALITY CONTROL:

The Engineer-in-Charge reserves the right to make changes in the mix proportions including increasing the cement content or/and a change in the Contractor's control procedure, should the quality control during process of the work prove to be inadequate in CONSULTANT's opinion and the contractor shall carry out the same at no extra cost to the corporation. All the concrete work shall be true to level, plumb and square within the acceptable tolerance. The corners, edges and arises in all cases shall be unbroken and finished properly and carefully.

22. 21. WOOD WORK:

- i) All the timber members shall be well seasoned by any proper natural or artificial method of seasoning. The preparation of timber for joinery is to commence simultaneously with the construction of superstructure and should be completed well before fixing at site, and shall be stacked at site for observation against bending, warping etc. and for regular inspection. It should be stacked in a proper manner. As a special case, if the contractor agrees to do so, required fund shall be released to the contractor for procurement of material as certified by the Engineer-in-charge.
- ii) All timber member and joinery, in touch with masonry or concrete, shall be applied with wood preservative as approved by the Engineer-in-charge and the rate quoted shall be inclusive of the same. All rough frame work, framing for false ceiling and partition or panelling shall also be treated similarly.
- iii) All joinery, preferably, shall be tongue and groove joint and the thickness of each shall not be less than 6mm. All the joints shall be glued and pinned together with wooden pegs and the pegs shall engage all tongues.
- iv) In mortice and tenon joints all tenons shall not be less than 12mm. Thick and shall be the full width of the member. Tenons shall be glued into the mortices. Through tenons

shall be pinned with wooden dowels of not less than 6mm. Dia. or with non-ferrous metal dowels. Through tenons shall be wedged if the mortices are tapered.

- v) Whether mentioned or not in the B.O.Q., all exposed faces of timber shall receive a primer coat of red oxide or similar approved primer. Quoted rates shall be inclusive of the same.

23. ALUMINIUM WORK:

- i) Aluminium sections used for fixed/openable windows, ventilators, partitions, frame work & doors etc. shall be suitable for use to meet architectural designs to relevant works and shall be subject to approval of the Engineer-in-Charge for technical, structural, functional and visual considerations.
- ii) Chemical and mechanical properties of sections shall comply with requirements given in IS 733-1983, Specification for wrought aluminium and aluminium alloys bars, rods and sections, IS 737-1986, Specification for wrought aluminium and aluminium alloys sheet and strip for general engineering purposes and IS 1285-2002, Specification for wrought aluminium and aluminium alloys extruded round tube and hollow sections for general engineering purposes.
- iii) The permissible dimensional tolerances of the extruded sections shall be as per IS 6477 and shall be such as not to impair the proper and smooth functioning/operation and appearance of door and windows.
- iv) The powder used for powder coating shall be Epoxy/polyester powder of make approved by the Engineer-in-Charge. The contractor shall give detailed programme for powder coating in advance, to facilitate the inspection by Engineer-in-Charge or his authorized representative.
- v) It is mandatory that all aluminium members shall be wrapped with self adhesive non-staining PVC tape, approved by Engineer-in-Charge.

24. PAINTS SYSTEM:

- i) All paints for the protection of steelwork shall be of the best available quality and specifications suitable for the purpose and in any case shall not fall below the minimum standards laid down in IS 1477.
- ii) Where the specifications, method or extent of application of any other paint scheme approved for the work varies from those described, the recommendations and instructions of manufacturers shall be followed.
- iii) Before application of paint, it is to be ensured that the surface is dried completely and shall be cleaned with hard brush to remove all loose particles and dust etc
- iv) Priming coat to be applied wherever applicable, irrespective of whether it is mentioned in the specification of item or not.
- v) At least three coats painting (Including priming coat) shall be done, brush applied paint shall be applied at least one coat in horizontal and the other in vertical direction.
- vi) If the colour is not uniform or any mark of patch or impression of brush is visible, it shall be removed and if required, more coats shall be applied by the contractor at his own cost.

25. FORM WORK:

- i) Form work shall include all temporary or permanent forms of moulds required for forming the concrete which is cast-in-situ together with all temporary construction required for their support.

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- ii) Formwork shall be of rigid construction true to shape and dimensions. It shall be strong enough to withstand the dead and live loads and forces caused by ramming and vibrations of concrete and other incidental loads, imposed upon it during and after casting of concrete. It shall be made sufficient rigid by using adequate number of ties and braces. Screw jack or hard board wedges, were required shall be provided to make up any settlement in the form work either before or during the placing of concrete.
 - iii) Forms shall be so constructed as to be removable in sections in the designed sequence without damaging the surface of concrete or disturbing other sections. All form work should be easy to strip after concreting and form work must be erected with this consideration in mind. Care shall be taken to see that no pieces remain keyed into the concrete. Details of formwork shall be properly designed by the Contractor and relevant drawings together with calculations for strength and deflection shall be submitted to the Engineer-in-Charge. for approval before commencement of formwork erection.
 - iv) The completed formwork shall be inspected by the Engineer-in-Charge on receipt of information in this regard from the Contractor, before the reinforcement bars are placed in position. Minimum 2 complete sets of approved set of form work system for the total area in the typical floor shall always be available in usable condition.
 - v) Formwork surface in contact with concrete (sheathing) shall be hard wood section approved by the Engineer-in-Charge.
 - vi) All joints in boards for such formwork shall be carefully designed, no repair on the form finish concrete will be accepted.
 - vii) There shall not be any visible patches, strains for effloresce in the fair faced concrete.
 - viii) Use of ties shall be minimum.
 - ix) The surfaces of timber formwork that would come in contact with concrete shall be coated with soap solution, raw linseed oil, or form oil of approved material to prevent adhesion of concrete to formwork.
 - x) The formwork shall be so removed as not to cause any damage to concrete due to shock or vibration. In a slab and beam construction, sides of beam shall be stripped first, then the under sides of slab and lastly the underside of the beam.

26. BENDING SCHEDULE:

The Contractor shall be responsible for preparing, checking all bar bending schedules against the drawing and obtain approval from Engineer-in-Charge. before cutting and bending and fixing of steel commences. Contractor shall get satisfied that the steel can' be fixed according to the drawing and also can be transported to the Site. The contractor shall remove from site at his own risk and cost any steel reinforcement bar fixed in position without obtaining prior approval of bar bending schedule from Engineer-in-Charge.

26.1. Bending and Cutting of Reinforcing Steel Bars

Preferably, bars of full length shall be used, overlapping of bars, where necessary, shall be done in accordance with the drawings or as directed by Engineer-in-Charge and as specified in IS:456-1978.

Wherever facility is available, welding of bars shall be resorted to in lieu of overlap. The location and type of welding shall be as approved by the Engineer-in-Charge as shall be done in accordance to IS: 2751-1966.

26.2. Placing in Position

Reinforcement bars shall be placed in position as shown in the drawings. The bars crossing one another shall be tied together at every intersection with two strands of annealed steel wire 0.90 to 1.6 mm thickness twisted tight to make the skeleton of the steel work rigid so that the reinforcement does not get displaced during the deposition of concrete. The concrete cover shall not be less than that specified in the drawings. Tuck welding shall also be permitted in lieu of binding with steel wire if approved by Engineer-in-Charge.

26.3. Approval of Reinforcement:

The Contractor must obtain the approval of the Engineer-in-Charge to the reinforcement fixed in position, before any concrete is deposited on the shutters.

27. CONCRETING:

- i) The concrete, which will flow sluggishly into the forms and around the reinforcement without any segregation shall be determined by slump tests. The slump to be used shall be minimum required for proper concreting and compaction depending upon the concentration of reinforcement structural member to be connected.
- ii) Concreting shall be commenced only after the Engineer-in-Charge has inspected the centering, shuttering and reinforcement as placed and passed the same. Shuttering shall be clean and free from all dirt, saw dust, pieces of wood, or other foreign material, and shall be treated as described hereinbefore.
- iii) The concrete shall be deposited in its final position in a manner to preclude segregation of ingredients. In deep trenches and footings, concrete shall be laced through chutes as directed by the Engineer-in-Charge. In case of columns and walls, the shuttering shall be so adjusted that the vertical drop of concrete is not more than 1.5 meters at a time.
- iv) During cold weather, concreting shall not be done when the temperature falls below 4.5 0C. The concrete placed shall be protected against frost by suitable covering. Concrete damaged by frost shall be removed and work redone at contractor's risk & cost. During hot weather, precaution shall be taken to see that the temperature of wet concrete does not exceed 38 0C. No concrete shall be laid within half an hour of the closing time of the day, unless permitted by the Engineer-in-Charge. It is necessary that the time between mixing and placing of concrete shall not exceed 30 minutes so that the initial setting process is not interfered with.
- v) Concrete shall be compacted into a dense mass immediately after placing, by means of mechanical vibrators designed for continuous operations. The layers of concrete shall be so placed that the bottom layer does not finally set before the top layer is placed.
- vi) Concreting shall be carried out continuously up to the construction joints, the position and details of which shall be as directed by the Engineer-in-Charge. Such joints shall be Page 24 of 246 kept to the minimum and shall not be located in valleys. The joints shall be kept at places where the shear force is the minimum and these shall be straight and at right angles to the direction of main reinforcement.
- vii) When stopping the concrete on a vertical plane in slabs and beams and any other R.C.C. work an approved stop-board shall be placed with necessary slots for reinforcement bars or any other obstruction to pass the bars freely without bending. The Construction joints shall be keyed by providing a triangular or trapezoidal fillet nailed on the stop-board. Inclined or feather joints shall not be permitted. Any concrete flowing through- -the joints of stop-board shall be removed soon after the

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- initial set. When concrete is stopped on a horizontal plane, the surface shall be roughened and cleaned after the initial set.
- viii) When the work has to be resumed, the joint shall be thoroughly cleaned with wire brush and loose particles removed. A coat of neat cement slurry at the rate of 2.75 kg of cement per square meter shall then be applied on the roughened surface before fresh concrete is laid.
 - ix) Expansion joints shall be provided as shown in the structural drawings or as directed by the Engineer-in-Charge. The filling of these joints with bitumen filler, bitumen felt or any such material with the provision of copper or brass plate, etc.
 - x) After the concrete has begun to harden i.e. about 1 to 2 hours after its laying, it shall be protected from quick drying with moist gunny bags, sand or any other materials approved by the Engineer-in-Charge. After 24 hours of laying of concrete, the surface shall be cured by flooding with water of minimum 25mm depth, or by covering with wet absorbent material. The curing shall be done for a minimum period of 15 days.
 - xi) For all slabs the top surface shall be furnished even and smooth with wooden trowel, before the concrete begins to set. Where so specified, the surfaces shall be given a linear deeply scratched surface by a steel broom or other approved tool while the concrete is still green to receive the specified finish on top.
 - xii) Immediately on removal of forms, the R.C.C. work shall be examined by the Engineer-in-Charge before any defects are made good.

28. CEILING SYSTEM:

- i) Aluminium frame consisting of battens 50x25mm fixed over plugs embedded in wall conforming IS 733-1983.
- ii) Plaster of Paris (Gypsum anhydrous) ceiling tiles of thickness 12mm should be used.
- iii) Gypsum plaster shall conform to IS 2547 (Part 1). By product gypsum conforming to the requirements of IS 12679 shall also be used for the preparation of plaster.

29. ROOFING

Trapezoidal Polyester Coated Galvanised Steel Sheets of 0.50 mm thick conforming IS 277: 2003 on steel work in built up trusses of steel conforming IS:226 shall be used.

30. EARTHWORK

30.1. GENERAL:

Excavation may be involved in all types of soils including rock, saturated soil, sub-soil water or running sand. It may also include pumping or bailing out of water.

The contractor shall furnish all tools, plant instruments, qualified supervisory personnel, labour, materials, any temporary works, consumables and anything else necessary, for completion of the work in accordance with the Employer's requirements, whether or not such items are specifically stated herein.

The contractor shall survey the site before excavation and set out all lines and establish levels for various works such as grading, basement, foundations, plinth filling, roads, drains etc. Such survey shall be carried out by taking accurate cross sections of the area perpendicular to established reference/grid lines at 10 m and 30 m intervals or nearer in case of buildings and roads and pipe lines works respectively.

The excavation shall be carried out to correct lines and levels. This shall also include, where required, proper shoring to maintain excavations and also the furnishing, erecting and maintaining of substantial barricades around excavated areas and warning lamps at night.

Excavated material shall be dumped in regular heaps, bunds, riprap with regular slopes and levelling the same so as to provide natural drainage. Rock/soil excavated shall be stacked properly as approved by the Engineer-in-charge. As a rule, all softer material shall be laid along the centre of heaps, the harder and more weather resisting materials forming the casing on the sides and the top.

Topsoil shall be stock piled separately for later use.

30.2. EXCAVATION

Excavation for permanent work shall be taken out to such widths, lengths, depths and profiles as are shown on the approved drawings or such other lines and grades as may be agreed with the Engineer-in-charge. Rough excavation shall be carried out to a depth of 150 mm above the final level. The balance shall be excavated with special care. Soft pockets shall be removed below the final level and extra excavation filled up with material as approved by the Engineer-in-charge. The final excavation should be carried out just prior to laying the blinding course. All excavations shall be to the minimum dimensions required for safety and ease of working. Prior approval of the Engineer-in-charge shall be obtained by the contractor in each individual case, for the method proposed for the excavation, including dimensions, side slopes, dewatering, disposal, etc. This approval, shall not in any way relieve the Bidder of his responsibility for any consequent loss or damage. The excavation must be carried out in the most expeditious and efficient manner. Side slopes shall be as steep as will stand safely for the actual soil conditions encountered. Every precaution shall be taken to prevent slips. If slips occur, the slipped material shall be removed and the slope shall be dressed to a modified stable slope.

All loose boulders, detached rocks partially and other loose material which might move there with not directly in the excavation but so close to the area to be excavated as to be liable, in the opinion of Engineer-in-charge, to fall or otherwise endanger the workmen, equipment, or the work shall be stripped off and removed from the area of the excavation. The method used shall be such as not to render unstable or unsafe the portion, which was originally sound and safe.

Any material not requiring removal in order to complete the permanent works, but which, in the opinion of Engineer-in-charge, is likely to become loose or unstable later, shall also be promptly and satisfactorily removed.

30.3. FILLING AND BACK FILLING:

All fill material shall be subject to the Engineer-in-charge's approval. If any material is rejected by Engineer-in-charge, the Bidder shall remove the same forthwith from the site. Surplus fill material shall be deposited/disposed off as directed by Engineer-in-charge after the fill work is completed.

No earth fill shall commence until surface water discharges and streams have been properly intercepted or otherwise dealt with other approval of the Engineer-in-charge.

NOTE: For any item not covered in the above list, the contractor shall get the samples approved from the authorized representative of Engineer-in-charge before the supply is made.

SECTION – 2.0

DETAILED TECHNICAL SPECIFICATION – REPAIR WORKS

TABLE OF CONTENTS

Clause No.	Description
1.0	Repairs to Buildings
2.0	Dismantling and Demolishing
3.0	Methods of Repairs & water proofing

1. REPAIRS TO BUILDINGS

LIST OF BUREAU OF INDIAN STANDARD CODES

<i>S. No.</i>	<i>BIS. No.</i>	<i>Subject</i>
1.	IS 419	Specifications for Putty for use in Window Frames
2.	IS 14900	Specifications for Transparent Float Glass

1.1. REPAIRS TO PLASTER

1.1.0 The work includes cutting the patch and preparing the wall surface. Patches of 2.50 square meters and less in area shall be measured under item of 'Repairs to Plaster' .

1.1.1 Scaffolding

Scaffolding as required for the proper execution of the work shall be erected. If work can be done safely with the ladder will be permitted in place of scaffolding.

1.1.2 Cutting

The mortar of the patch, where the existing plaster has cracked, crumbled or sounds hollow when gently tapped on the surface, shall be removed. The patch shall be cut out to a square or rectangular shape at position marked on the wall as directed by the Engineer-in-Charge or his authorized representative. The edges shall be slightly under cut to provide a neat joint.

1.1.3 Preparation of Surface

The masonry joints which become exposed after removal of old plaster shall be raked out to a minimum depth of 10 mm in the case of brick work and 20 mm in the case of stonework. The raking shall be carried out uniformly with a raking tool and not with a basuli, and loose mortar dusted off. The surface shall then be thoroughly washed with water and kept wet till plastering is commenced.

In case of concrete surfaces, the same shall be thoroughly scrubbed with wire brushes after the plaster had been cut out and pock marked as directed by engineer-in-charge. The surface shall be washed and cleaned and kept wet till plastering is commenced.

1.1.4 Application of Plaster

Mortar of specified mix with the specified sand shall be used. The method of application shall be as described for single coat plaster work of the specified mix. The surface shall be finished even and flush and matching with the old surrounding plaster. All roundings necessary at junctions of walls, ceilings etc. shall be carried out in a tidy manner as specified.

All dismantled mortar & rubbish etc. shall be disposed off within 24 hours from its dismantling promptly as directed by the Engineer-in-Charge.

1.1.5 Protective Measure

Doors, windows, floors, articles of furniture etc. and such other parts of the building shall be protected from being splashed upon. Splashing and droppings, if any, shall be removed by the contractor at his own cost and the surface cleaned. Damages, if any, to furniture or fittings and fixtures shall be recoverable from the contractor.

1.1.6 Curing

Curing shall be done as per plaster work with special reference to the particular type of plaster mix as described.

1.1.7 Finishing

After the plaster is thoroughly cured and dried the surface shall be whitewashed or colour washed to suit the existing finishing as required unless specified.

1.1.8 Measurements

Length and breadth shall be measured correct to a cm. The area shall be calculated in square meter correct to two places of decimal. Patches below 0.05 square meter in area shall not be measured for payment.

Pre- measurements of the patches to be plastered shall be recorded after the old plaster has been cut and wall surface prepared.

1.1.9 Rate

The rate includes the cost of all the materials and labour involved in all the operations described above including lead as described in the item for disposal of old dismantled plaster /material.

1.2. FIXING DOOR, WINDOW OR CLERESTORY WINDOW CHOWKHATS IN EXISTING OPENING

1.2.1 Making Holes

1.2.1.1 In case of door frames without sills, holes 40 mm deep shall be made in the floor for fixing the lower end of verticals of the frames. For doors with sills, the sill plates shall be partly fixed in the floor so that they project above the floor to the height as directed by the Engineer-in-Charge.

1.2.1.2 For embedding hold fasts of doors, windows or clerestory windows, the requisite number of holes at the correct positions shall be cut out in the masonry. The size of the holes shall be such that the chowkhats with the hold-fasts can be conveniently erected in position. Where necessary, masonry shall be chipped uniformly to facilitate easy insertion of the frame in the opening.

1.2.1.3 Special care shall be taken when holes are made in load bearing pillars or wall portions separated by openings to ensure that beams etc. supported by them are properly propped up. In such portions cutting holes shall be done on one side at a time. The sides of the holes shall be truly parallel and perpendicular to the plane of the wall. Due care shall be taken, not to disturb the adjoining masonry and the masonry under the bearings of lintels and arches etc. spanning the opening. The holes shall then be cleaned of all dust, mortar and brick bats or stone pieces and thoroughly wetted.

1.2.2 Fixing

The sides of chowkhats of door, window or clerestory window abutting against or to be embedded in masonry shall be painted with two coats of coal tar before being placed in position. The chowkhats shall then be inserted in position with their hold-fasts bolted tight. The chowkhats shall then be adjusted to proper line and plumb and secured in position by temporary bracing which shall not be disturbed or removed until the hold fasts are embedded in the masonry and the concrete block has set. The concrete to be used for embedding hold- fasts shall be cement concrete 1:3:6 mix (1 cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size).

The minimum size of concrete block in which the hold-fasts will be embedded shall be 30 x 10 x 15 cm for 35 cm long holdfasts. The concrete of the block shall completely fill the hole made in the masonry for the purpose. The chase cut in the floor shall be cut square and construction joint shall be provided filled in with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and rendered smooth at the top and finished to match the existing type of floor.

1.2.3 Finishing

After the surface surrounding the hold-fasts has sufficiently dried it shall be cleaned of dust etc. and wetted. It shall then be plastered with cement mortar 1:4 (1 cement : 4 fine sand) flush and matching with the surrounding plaster work. In case of exposed brick work, stone work, the finishing shall be done to match the surrounding. Any other portion of the wall opening, if damaged, shall be repaired in similar way.

After the cement plaster patches have been thoroughly cured and dried, they shall either be white washed or colour washed as required unless otherwise specified. All malba and debris obtained from cutting etc. shall be disposed off to the nearest dumping ground promptly as directed by Engineer- in-Charge.

1.2.4 Measurements

The chowkhats of doors, window and clerestory windows shall be enumerated separately.

1.2.5 Rate

The rate shall apply irrespective of the size of the chowkhat upto a maximum area of opening 3.75 square meters for doors, 2.5 square meters for windows and 1.2 square meters for clerestory windows. The rate is inclusive of labour and materials involved in all the operations described above, excluding (a) cost of chowkhats and (b) cost of supplying and fixing the hold-fasts including C.C. block and bolts.

1.3. **FIXING CHOWKHATS IN EXISTING OPENING IN BRICKS / RCC WALL WITH DASH FASTNERS**

1.3.1 In case of door frames without sills, holes 40 mm deep shall be made in the floor for fixing the lower end of verticals of the frames. For doors with sills, the sill plates shall be partly fixed in the floor so that they project above the floor to the height as directed by the Engineer-in-Charge.

1.3.1.1 For fixing dash fasteners /chemical fasteners of doors, windows or clerestory windows, the requisite number of holes at the correct positions shall be in the masonry/RCC wall. The size of holes shall be such that the fasteners can be conveniently placed in position. Where necessary, masonry shall be chipped uniformly to facilitate easy insertion of the frame in the opening.

1.3.1.2 Special care shall be taken when holes are made in load bearing pillars or wall portions separated by openings to ensure that beams etc. supported by them are properly propped up. In such portions cutting holes shall be done on one side at a time. The sides of the holes shall be truly parallel and perpendicular to the plane of the wall. Due care shall be taken, not to disturb the adjoining masonry and the masonry under the bearings of the lintels and arches etc. spanning the opening. The holes shall then be cleaned of all dust, mortar and brick bats or stone pieces and thoroughly wetted.

1.3.2 Fixing

The sides of chowkhats of door, window or clerestory window abutting against or to be embedded in masonry shall be painted with two coats of coal tar before being placed in position. The chowkhats shall then be inserted in position tight. The chowkhats shall then be adjusted to proper line and plumb and secured in position by temporary bracing which shall not be disturbed or removed until the fasteners are embedded in the masonry /RCC wall.

1.3.3 Finishing

After the surface surrounding the hold-fasts has sufficiently dried it shall be cleaned of dust etc. and wetted. It shall then be plastered with cement mortar 1:4 (1 cement: 4

fine sand) flush and matching with the surrounding plaster work. In case of exposed brick work, stone work, the finishing shall be done to match the surrounding. Any other portion of the wall opening, if damaged, shall be repaired in similar way. After the cement plaster patches have been thoroughly cured and have dried, they shall either be white washed or colour washed as required unless otherwise specified. All malba and debris obtained from cutting etc. shall be disposed off to the nearest dumping ground.

1.3.4 Measurements

The chowkhats of doors, window and clerestory windows shall be enumerated separately.

1.3.5 Rate

The rate shall apply irrespective of the size of the chowkhat upto a maximum area of opening 3.75 square meters for doors, 2.5 square meters for windows and 1.2 square meters for clerestory windows. The rate is inclusive of labour and materials involved in all the operations described above, including cost of dash fasteners chemical fasteners but excluding cost of chowkhat.

1.4. MAKING OPENING IN THE MASONRY CONSTRUCTION AND FIXING CHOWKHATS FOR DOORS, WINDOWS, AND CLERESTORY WINDOWS

1.4.0 Before making opening it is necessary to examine that the wall exclusive of opening is adequate to take the load coming on the structure. All the structural members supported on the walls which have direct bearing over the area in which opening is to be made, shall be properly supported with props to relieve the load from masonry wall till the lintel over the opening is strong enough to take the load. Care should also be taken not to disturb the adjoining masonry.

All precautions as explained in Chapter 2.0 (Demolition and Dismantling) should be followed in case of dismantling the external walls. The portion to be dismantled may be clearly marked on both sides of the wall. Dismantling shall be carried out from top to bottom within the marked area. The sides of the opening shall be as far as possible, parallel and perpendicular to the plane of wall.

1.4.1 Making Opening

1.4.1.1 The openings for fixing door/window frames shall be to the extent of accommodating the hold fast. The hold fasts shall be fixed in cement concrete 1:3:6 (1 cement: 3 coarse sand: 6 stone aggregate 20 mm nominal size) or in masonry as required. Where only opening is to be made in the masonry, the width of the opening shall be such that the sides of the masonry can be built true to line and plumb and such masonry built shall conform to the specifications of the particular type of masonry in which the opening is made with particular reference to size of corner stones etc. In order to get continuity with old masonry, proper key shall be provided. The height of the opening shall be such that it can accommodate the required depth of the RCC lintel also.

1.4.1.2 The sides of opening in masonry shall be cleaned of all dust, mortar, brick bats/loose stones, chips etc. and the surface left rough and thoroughly wetted.

1.4.1.3 The lintel shall be invariably cast first in the opening made for the purpose. One side of the shuttering shall be kept open in the beginning till the concrete is laid. The shuttering shall then be fixed for half of the opening and concreting completed.

1.4.1.4 Curing of lintel casted shall be done for a minimum period of 7 days.

1.4.1.5 Precast RCC lintel or R.S. Joist may also be used if directed by the Engineer-in-Charge.

1.4.2 Fixing Chowkhats

Fixing of chowkhats shall be done as specified in 1.2.2.

1.4.3 Finishing

1.4.3.1 After the surface of the sides of masonry opening and lintel are sufficiently dry and set, it shall be cleaned free of dust, loose mortar etc. and wetted thoroughly. It shall then be plastered or pointed as required flush with the surrounding masonry work. Any other portion of the wall if damaged shall be finished in similar manner.

1.4.3.2 After the cement plaster/pointing has been thoroughly cured and have dried the surface shall be either white or colour washed/painted as required. The surface of the wall which is spoiled due to splashing of mortar shall be cleaned forthwith.

1.4.4 Measurements

The openings made for doors, windows, clerestory windows shall be measured correct to cms and area shall be calculated in square meters correct to two places of decimal.

1.4.5 Rate

The rate shall apply per sqm of opening. The rate is inclusive of labour and material involved in all the operations described above.

Cost of Chowkhats, cost of CC blocks, cost of supplying the hold-fasts bolts, cost of R.C.C lintel or R.S. Joist which shall be paid for separately.

1.5. RENEWING FLOATING GLASS PANES WITH PUTTY AND NAILS

1.5.1 Removing Broken Glass Panes

Old putty shall be raked out with hack knife. The brad (small nails without head) and pieces of broken glass shall be removed from the rebates of the sash bars. The pieces of glass panes as found useful shall be handed over to the Engineer-in-Charge of the work. No glass shall be inserted in frames until they have been primed and prepared for painting so that the wood may not draw oil out of the putty.

1.5.2 Floating Glass Panes

The floating glass panes shall conform to specifications described in IS 14900.

1.5.3 Fixing

The floating glass panes shall be so cut that it fits slightly loose in the frame and as specified in A&B of IS 14900. A thin layer of Putty conforming to IS 419 shall be prepared by mixing one part of white lead with three parts of finely powdered chalk and then adding the boiled linseed oil to the mixture to form a stiff paste and adding varnish to the paste @ 1 liter of varnish to 18 kg. of paste. The putty so prepared in the form of a stiff paste shall be drawn along the inner edge of the rebate, for bedding the back of the glass panes. The glass pane shall then be put in position, pressed home against the thin layer of the putty, and secured in rebate by new brads. The brads shall not be spaced more than 7.5 cm from each corner and not more than 15 cm apart. The putty shall then be applied in the rebate uniformly, sloping from the inner edge of the rebate. In doing this care shall be taken to keep the putty a little within the inner edge of the rebate and surplus putty removed so that none of it is seen through the glass from the inside. The putty so filled in the rebates shall be leveled smooth and finished in a straight line. When dried the putty shall be covered with a coat of paint of approved quality and shade to match the existing finish of joinery work.

The floating glass panes shall be cleaned with methylated spirit. All splashing or droppings of washing and paints shall be removed. All rubbish and unserviceable materials shall be disposed of to the dumping ground promptly as per the direction of Engineer-in-Charge.

Thickness and Tolerance of Floating Glass

Thickness	Tolerance
4 mm	± 0.3 mm
5 mm	± 0.3 mm
6 mm	± 0.3 mm

Note: Frosted glass panes should be replaced with frosted glass panes. These shall be fixed with frosted face on the inside.

1.5.4 Measurements

Length and breadth of glass panes shall be measured correct to a cm. The area of the glass panes as fixed shall be calculated in square meter correct to two places of decimal.

1.5.5 Rate

The rate shall include the cost of labour and materials involved in all the operations described above.

1.6. RENEWING FLOATING GLASS PANES WITH WOODEN FILLETS

1.6.1 Removing Broken Glass Panes

The specifications shall be the same as in para 1.5.1 except that the wooden fillets including nails shall be taken out carefully.

1.6.2 Glazing

The specifications for glass panes and their fixing shall be the same as per IS 14900. The fillet shall either be fixed flush or projected uniformly to match with the existing work by means of nails (brads).

The new fillet provided shall be painted or finished otherwise to match with the existing finish of the joinery work.

The glass panes shall be cleaned with methylated spirit of all sorts of splashing and droppings of wash and paints.

All rubbish and unserviceable materials shall be disposed of in the dumping ground promptly as per the direction of Engineer-in-Charge.

1.6.3 Measurements

Length and breadth of glass panes shall be measured correct to a cm. The area of the glass panes as fixed shall be calculated in square meter correct to two places of decimal. The new wooden fillets fixed shall be measured in running meters correct to a cm.

1.6.4 Rate

The rates shall include the cost of labour and material involved in all the operations described above except that the cost of new wooden fillets used in the work and their finishing shall be paid for separately.

1.7. RENEWING FLOATING GLASS PANES AND REFIXING EXISTING WOODEN FILLETS

The specifications shall be same as described in 1.6 above.

1.8. PROVIDING NEW WOODEN FILLETS

1.8.1 The fillets shall be of wood, as specified in the item of work, these shall be cut and planed smooth to the required shape and dimensions.

1.8.2 Fixing

The specifications for glass panes and their fixing shall be the same. The fillet shall either be fixed flush or projected uniformly to match the existing work.

The fillet shall be painted or finished otherwise to match with the existing finish of the joinery work.

The glass panes shall be cleaned with methylated spirit of all sorts of splashing and dropping of wash and paints.

1.8.3 Measurements

The fillets shall be measured in running meters. The lengths shall be measured correct to a cm.

1.8.4 Rate

The rate shall include the cost of all labour and materials involved in all the operations described above. The rate shall also include the cost of removal of worn out fillets, when these are met with in old work. The rate shall vary according to the class of wood used.

1.9. RENEWAL OF OLD PUTTY OF GLASS PANES

1.9.1 The old putty shall be removed as specified in 1.5.1 and new putty fixed as specified in 1.5.3.

1.9.2 Measurements

The work shall be measured in running meters. The length along the rebate shall be measured correct to a cm.

1.9.3 Rate

The rate shall include the cost of labour and materials involved in all the operations described above.

1.10. REFIXING OLD GLASS PANES WITH PUTTY AND NAILS

1.10.1 Specification same as described in 1.5 above. Except for the glass panes, old glass panes will be used for which nothing extra will be paid.

1.11. FIXING OLD GLASS PANES WITH WOODEN FILLETS

1.11.1 Specifications same as described in para no. 1.6 above except for the glass panes. Old glass panes will be used for which nothing extra shall be paid.

1.12. FIXING FAN CLAMPS IN EXISTING R.C.C. SLABS

1.12.1 The fan clamps to be fixed in an existing R.C.C. slab. These shall be made of 16 mm dia M.S. bar.

1.12.2 Fixing

A 15 x 7.5 cm size chase shall be cut from the ceiling to expose the reinforcement and upto 2.5 cm clear round the reinforcement bar as directed. This shall be done without any damage to adjoining portion of the ceiling.

The two arms at the ends of the clamps shall be passed through the space over the reinforcement bar from the bottom of the slab. Then the two arms shall be bent down about 1.5 cm by means of a crow bar. The clamp shall be held in position and chase in the ceiling filled with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size). The ceiling shall then be finished to match the existing surface and properly cured.

The exposed portion of the clamp shall be given two or more coats of paint including one priming coat of shade as directed by the Engineer-in-Charge.

1.12.3 Measurements and Rate

Clamps shall be counted in numbers. The rate per fan clamp shall include the cost of labour and materials involved in all the operations described above. The rate shall apply irrespective of the thickness of the slab.

1.13. RENEWING WOODEN BATTENS /BEAMS IN ROOFS

1.13.1 Dismantling Wooden Battens / Beams

Dismantling shall be done as described in para 2.1 of dismantling and demolishing.

Proper scaffolding shall be erected and got inspected by Engineer-in -Charge.

Propping and bracing as directed should be done adequately and members required to be dismantled should be removed carefully including nails/bolts etc. and dismantling of masonry wall. The dismantled members should not be thrown or dropped but lowered with ropes carefully and stacked properly.

1.13.2 Relaying of Wooden Battens

The wooden battens/beams of required section and size should be placed at proper interval and surface of the wooden batten/beams shall be painted with oil type wood preservative of approved brand and manufacture and as per the direction of Engineer-in-Charge.

1.13.3 All serviceable material shall be stacked properly and all the unserviceable material shall be deposited with the Engineer-in-Charge.

1.13.4 Measurement

The work shall be measured in cubic meters. The length, breadth and depth shall be measured correct to a cm.

1.13.5 Rate

The rate shall include the cost of materials and labour involved in the operations described above.

1.14. PANELLED GLAZED OR PANELLED AND GLAZED SHUTTERS

1.14.0 Pannelled or glazed shutters for doors, windows, ventilators and cupboards shall be constructed in the form of timber frame work of stiles and rails with panel inserts of timber, plywood, block board, veneered particle board, fibre board wire gauze or sheet glass. The shutters may be single or multipanelled, as shown in the drawings or as directed by the Engineer-in-Charge. Timber for frame work, material for panel inserts and thickness of shutters shall be as specified. All members of the shutters shall be straight without any warp or bow and shall have smooth well planed face at right angles to each other.

Any warp or bow shall not exceed 1.5 mm. The right angle for the shutter shall be checked by measuring the diagonals and the difference between the two diagonals should not be more than ± 3 mm.

1.14.1 Frame Work

1.14.1.1 Timber for stiles and rails shall be of the same species and shall be sawn in the directions of grains. Sawing shall be truly straight and square. The timber shall be planed smooth and accurate to the required dimensions. The stiles and rails shall be joined to each other by plain or haunched mortise and tenon joints and the rails shall be inserted 25 mm short of the width of the stiles. The bottom rails shall have double tenon joints and for other rails single tenon joints shall be provided. The lock rails of

door shutter shall have its center line at a height of 800 mm from the bottom of the shutters unless otherwise specified. The thickness of each tenon shall be approximately one- third the finished thickness of the members and the width of each tenon shall not exceed three times its thickness.

1.14.1.2 Gluing of Joints : The contact surfaces of tenon and mortise shall be treated, before putting together, with bulk type synthetic resin adhesive conforming to IS 851 suitable for construction in wood or synthetic resin adhesive (Phenolic and amino plastic) conforming to IS 848 or polyvinyl acetate dispersion based adhesive conforming to IS 4835 and pinned with 10 mm dia hardwood dowels or bamboo pins or star shaped metal pins; after the frames are put together and pressed in position by means of press.

1.14.1.3 Stiles and bottom rail shall be made out of one piece of timber only. Intermediate rail exceeding 200 mm in width may be out of one or more pieces of timber. The width of each piece shall be not less than 75 mm. Where more than one piece of timber is used for rails, they shall be joined with a continuous tongued and grooved joint glued together and reinforced with metal dowels at regular intervals not exceeding 200 mm.

TABLE 1.1
Dimensions of Components of Frame Work

Sl. No.	Description	Width	Thickness
		Mm	mm
A. DOOR SHUTTERS			
(a)	Stile, top and	100	35 or 40
(b)	Lock rail	150	35 or 40
(c)	Bottom rail	200	35 or 40
(d)	Muntin	100	35 or 40
(e)	Glazing bar	40	35 or 40
B. WINDOW, VENTILATOR & CUPBOARD SHUTTERS			
(a)	Stile, top and	80	20, 25 or 30
(b)	Bottom rail	80	20, 25 or 30
(c)	Muntin	60	20, 25 or 30
(d)	Glazing bar	40	20, 25 or 30

1.14.2 Muntin and glazing bars where required shall be stubtenoned to the maximum depth which the size of the member would permit or to a depth of 25 mm whichever is less. Unless otherwise specified the finished dimensions of the components of frame work of shutters shall be as given in Table 1.1. The tolerance on width of styles and rail shall be ± 3 mm. The tolerance in thickness will be ± 1 mm. The thickness of all components of frame work shall be the same as the thickness of the shutter. Tolerance on over all dimensions of the shutter shall be ± 3 mm.

1.14.3 Rebating

The shutters shall be single-leaf or double leaved as shown in the drawings or as directed by the Engineer-in-Charge. In case of double leaved shutters, the meeting of the stiles

shall be rebated by one-third the thickness of the shutter. The rebating shall be either splayed or square type.

1.14.4 Panelling

The panel inserts shall be either framed into the grooves or housed in the rebate of stiles and rails. Timber, plywood, hard board and particle board panels shall be fixed only with grooves. The depth of the groove shall be 12 mm and its width shall accommodate the panel inserts such that the faces are closely fitted to the sides of the groove. Panel inserts shall be framed into the grooves of stiles and rails to the full depth of the groove leaving on space of 1.5 mm. Width and depth of the rebate shall be equal to half the thickness of stiles and rails. Glass panels, asbestos panels wire gauze panels and panel inserts of cupboard shutters shall be housed in the rebates of stiles and rails.

1.14.4.1 Timber Panels : Timber panels shall be preferably made of timber of large width; the minimum width and thickness of the panel shall be 150 mm, and 15 mm respectively. When made from more than one piece, the pieces shall be jointed with a continuous tongued and grooved joint glued together and reinforced with headless nails at regular intervals not exceeding 100 mm. Depth and thickness of such joint shall be equal to one- third of thickness of panel. The panels shall be designed such that no single panel exceeds 0.5 square meter in area. The grains of timber panels shall run along the longer dimensions of the panels. All panels shall be of the same species of timber unless otherwise specified.

1.14.4.2 Plywood Panels : Plywood boards used for panelling of shutters shall be BWP type or grade as specified in IS Code 303. Each panels shall be a single piece of thickness, 9 mm for two or more panel construction and 12 mm for single panel construction unless otherwise specified.

1.14.4.3 Block Board Panels : Block board used for panelling of shutters shall be Grade I (Exterior Grade) bonded with BWP Type Synthetic resin adhesives as specified in IS 710. Each panel shall be a single piece of thickness 12 mm unless otherwise specified.

1.14.4.4 Veneered Particle Board Panels: Veneered Particle board used for panelling of shutters shall be Exterior Grade bonded with BWP type synthetic resin adhesive as specified in IS 848. Each panel shall be a single piece of thickness 12 mm unless otherwise specified.

1.14.4.5 Fibre Board Panels : Fibre board used for panelling of shutters shall be Exterior Grade bonded with BWP type synthetic resin adhesive as specified in IS 848. Each fibre board panel shall be a single piece of thickness 10 mm unless otherwise specified.

1.14.4.6 Glass Panels : Glass panelling (Glazing) shall be done with float sheet glass as per IS 14900. Glazing in the shutters of doors, windows and ventilators of bath, WC and Lavatories shall be provided with frosted glass the weight of which shall be not less than 10 kg/sqm. Frosted glass panes shall be fixed with frosted face on the inside. Glass panels shall be fixed by providing a thin layer of putty conforming to IS 419 applied between glass pane and all along the length of the rebate and also between glass panes and wooden beading.

1.14.4.7 Putty can be prepared by mixing one part of white lead with three parts of finely powdered chalk and then adding boiled linseed oil to the mixture to form a stiff paste and adding varnish to the paste at the rate of 1 liter of varnish to 18 kg of paste.

Fixing of glass panes without beading shall not be permitted. Glazing shall be done after the shutters have been primed and prepared for painting, so that wood may not draw oil out of putty.

1.14.4.8 Finish : Panels of shutters shall be flat and well sanded to a smooth and level surface.

1.14.5 Beading

Beadings in panelled shutter shall be provided where specified in architectural drawings or directed by the Engineer-in -Charge. Each length of beading shall be single piece. Joints at the corners shall be mitred and exposed edges shall be rounded. Beading shall be fixed with headless nails at 75 mm intervals. For external shutters, the beading shall be fixed on the outside face.

1.14.6 Machine/Factory made Shutters

Machine made shutters, where specified, shall be procured from an approved factory. For machine made shutters, operations like sawing, planning, making tongue and tenons, cutting grooves, mortises and rebates, drilling holes and pressing of joints shall be done by suitable machines. Machines made shutters shall be brought to the site fully assembled but without any priming coat. Panel inserts of sheet glass and wire gauze may, however, be fixed at site.

1.14.7 Fixing of Shutters

For side hung shutters of height upto 1.2 m, each leaf shall be hung on two hinges at quarter points and for shutter of height more than 1.2 m, each leaf shall be hung on three hinges one at the centre and the other two at 200 mm from the top and bottom of the shutters. Top hung and bottom hung shutters shall be hung on two hinges fixed at quarter points of top rail or bottom rail. Centre hung shutter shall be suspended on a suitable pivot in the centre of the frame. Size and type of hinges and pivots be as specified. Flap of hinges shall be neatly counter sunk into the recesses cut to the exact dimensions of flap. Screws for fixing the hinges shall be screwed in with screw driver and not hammered in. Unless otherwise specified, shutters of height more than 1.2 m shall be hung on butt hinges of size 100 mm and for all other shutters of lesser height butt hinges of size 75 mm shall be used. For shutter of more than 40 mm thickness butt hinges of size 125 × 90 × 4 mm shall be used. Continuous (piano) hinges shall be used for fixing cup-board shutters where specified.

1.14.8 Fittings

Fittings shall be provided as per schedule of fittings decided by Engineer-in- Charge.

Cost of providing and fixing shutter shall include cost of hinges and necessary screws for fixing the same. All other fittings shall be paid for separately. The fittings shall conform to specifications as per the relevant IS Code. Where the fittings are stipulated to be supplied by the department free of cost, screws for fixing these fittings shall be provided by contractor and nothing extra shall be paid for the same.

1.14.9 Wooden Cleats and Blocks

Wooden cleats and blocks shall be fixed to doors and windows as directed by Engineer-in-Charge, as per size and shape approved by him. These are included in the cost of providing and fixing the shutters.

1.14.10 Measurements

Framework and panelling shall be measured separately.

1.14.10.1 Frame Work of Shutters : The overall length and width of the framework of the shutters shall be measured nearest to a cm in fixed position (overlaps not to be measured in case of double leaved shutters) and the area calculated in square meters correct to two places of decimeter. No deduction shall be made to form panel openings or louvers. No extra payments shall be made for shape, joints and labour involved in all operations described above.

1.14.10.2. For panelling of each type or for glazed panel length and width of opening for panels inserts or glazed panels shall be measured correct to a cm before fixing the beading and the area shall be calculated to the nearest 0.01 sq.m. The portions of the panel insert or glazed panel inside the grooves or rebates shall not be measured for payment.

1.14.11 Rate

Rate includes the cost of materials and labour involved in all the operations described above. The frame work and panelling of each type or glazed panels shall be paid separately. The rate for frame work includes the cost of butt hinges and necessary screws as specified in 1.14.7. However, extra shall be paid for providing moulded beading where specified. Nothing extra shall be paid for plain beading as stated in 1.14.5 when specified in drawing.

1.15. FITTINGS

1.15.0 Fitting shall be of mild steel brass, aluminium or as specified. Some mild steel fittings may have components of cast iron. These shall be well made, reasonably smooth, and free from sharp edges and corners, flaws and other defects. Screw holes shall be counter sunk to suit the head of specified wood screws. These shall be of the following types according to the material used.

Mild Steel Fittings These shall be bright satin finish black stone enamelled or copper oxidised (black finish), nickel chromium plated or as specified.

Brass Fittings These shall be finished bright satin finish or nickel chromium plated or copper oxidised or as specified.

Aluminium Fittings These shall be anodised to natural matt finish or dyed anodic coating not less than grade AC 10 of IS 1868.

The fittings generally used for different type of doors and windows. The fittings to be actually provided in a particular work shall, however, be decided by the Engineer-in-Charge.

Screws used for fittings shall be of the same metal, and finish as the fittings. However, chromium plated brass screws or stainless steel screws shall be used for fixing aluminium fittings. These shall be of the size as indicated in respective figures.

Fittings shall be fixed in proper position as shown in the drawings or as directed by the Engineer-in-Charge. These shall be truly vertical or horizontal as the case may be.

Screws shall be driven home with screw driver and not hammered in. Recesses shall be cut to the exact size and depth for the counter sinking of hinges.

1.15.1 Butt Hinges

(a) Cast brass butt hinges light/ordinary or heavy.

1.15.1.1 Cast Brass Butt Hinges : These shall be light/ordinary or heavy as specified.

These shall be well made and shall be free from flaws and defects of all kinds. These shall be finished bright or chromium plated or oxidised or as specified. These shall generally conform to IS 205.

Hinge Pin : Hinge pin shall be made of brass or of phosphor bronze. The hinge pins shall be firmly rivetted and shall be properly finished. The movement of the hinge pin shall be free, easy and square and shall not have any play or shake.

Knuckles : The number of knuckles in each hinge shall not be less than five. The number of knuckles in case of sizes less than 40 mm shall be three. The sides of the knuckles shall be straight and at right angle to the flap. The movement of the hinge pin shall be free and easy and working shall not have any play or shake.

Screw Holes : The screw holes shall be clean and counter sunk and of the specified size for different types and size of hinges. The size of the holes shall be such that when it is counter sunk it shall be able to accommodate the full depth of counter sunk head of wood screw specified.

1.15.1.2 Sampling and Criteria for Conformity: The number of butt hinges to be selected from a lot shall depend on the size of lot. Butt hinges for testing shall be taken at random from at least 10 per cent of the package subject to a minimum of three, equal number of hinges being selected from each package. All butt hinges selected from the lot shall be checked for dimensional and tolerance requirements. Defects in manufacture and finish shall also be checked. A lot shall be considered conforming to the requirements of this specification if the number of defective hinges among those tested does not exceed the corresponding number given in Table 1.2.

TABLE 1.2

Lot size	Sample size	Permissible No. of defective hinges
Upto 200	15	0
201 to 300	20	1
301 to 500	30	2
501 to 800	40	2
801 and above	55	3

Note: Any hinge which fails to satisfy the requirements of any one or more of the characteristics shall be considered as defective hinge.

1.15.2 Spring hinges: (Single or double acting)

1.15.2.1 These shall be single acting when the shutter is to open on one side only or double acting when the shutter opens on both sides. These shall be made of M.S. or brass as specified, and shall generally conform to IS 453.

Hinges shall work smoothly and shall hold the door shutter truly vertical in closed position. Each double-acting spring hinge shall withstand the following tests which shall be carried out after fixing it to a swing door in the normal manner.

When the door is pushed through 90° and released 2000 times on each side in quick succession the hinge shall show no sign of damage or any appreciable deterioration of the components during or on completion of the test.

The door shall require a force of 2.0 ± 0.5 kg for 100 mm hinges and 3.0 ± 0.5 kg for 125 mm and 150 mm hinges at a distance of 4.5 cm from the hinge pin to move the door through 90°.

The size of spring hinge shall be taken as the length of the plate.

1.15.2.2 These shall be of the following type :

Mild Steel : The cylindrical casing shall be made either from M.S. sheet of 1.60 mm thickness, lap jointed and brazed, welded and riveted, or from solid drawn tube of thickness, pressed to form the two casing. It shall be stove enameled black or copper oxidized or as specified.

Cast Brass: The cylindrical casing shall be made either from brass sheet of 1.60 mm thickness, lap jointed and brazed, or from solid drawn brass tube of not less than 1.60 mm thickness. It shall be satin, bright nickle — plated or copper oxidized or as specified.

1.15.2.3 Sampling: The number of spring hinges shall be selected from the lot and this number shall depend on the size of the lot and shall be in accordance with Table 1.3.

TABLE 1.3

Lot size	Sample size	Permissible No. of defective spring
1 to 25	3	0
26 to 50	6	0
51 to 100	12	0
101 to 200	15	0
201 to 300	20	1
301 to 500	30	2
501 to 800	40	2
801 and above	55	3

1.15.3 Flush Bolts

1.15.3.1 These should generally conform to IS 5187. These shall be of cast brass, cast aluminium alloy or extruded aluminium alloy as specified. Only one material shall be used in the manufacture of all the components of flush bolts except spring which shall be of phosphor bronze or steel strip.

When the rod is completely in its maximum bolting position it shall be retained in that position by the spring. The length of the bolt shall be such that, when the bolt is pulled down, the top of the bolt shall be flush with the top of the lip face. The top of the bolt shall be given a taper of 45° to enable easy pull or push.

1.15.3.2 Brass flush bolts shall be satin or bright polished. Alternatively they may be nickel or chromium plated as specified in IS 4827 or copper oxidised in accordance with IS 1378. Aluminium flush bolts shall be anodised and the quality of the anodised finish shall not be less than grade AC 15 of IS 1868.

Note : The working of flush bolts is found satisfactory only in case of shutters made of high quality timber like teakwood properly seasoned and when there is no warping due to changes in weather Brass flush bolts which give a more satisfactory performance are costly and uses scarce materials. Hence use of flush bolts is to be discouraged.

1.15.4 Floor Door Stopper

1.15.4.1 The floor door stopper shall conform to IS 1823. This shall be made of cast brass of overall size as specified and shall have rubber cushion. The shape and pattern of stopper shall be approved by the Engineer-in-Charge. It shall be of brass finished bright, chromium plated or oxidised or as specified. The size of floor stopper shall be determined by the length of its plate. It shall be well made and shall have four counter

sunk holes for fixing the door stoppers to the floor by means of wood screws. The body or housing of the door stopper shall be cast in one piece and it shall be fixed to the cover plate by means of brass or mild steel screws and cover plate shall be of casting or of sheet metal. The spring shall be fixed firmly to the pin. Tongue which would be pressed while closing or opening of the door shall be connected to the lower part by means of copper pin. On the extreme end a rubber piece shall be attached to absorb shock. All parts of the door stopper shall be of good workmanship and finish, burrs and sharp edges removed. It shall be free from surface and casting defects. Aluminium stopper shall be anodised and anodic film shall not be less than grade AC-10 of IS 1868.

1.15.4.2 Sampling and Criteria for Conformity: It shall be same as specified in Table 1.4.

TABLE 1.4 Requirements for Rubber

Particulars	Requirements	Testing procedure
Relative density Max	1.3	IS 3400 (Part IX)
Hardness	60 ± 5	IS 3400 (Part II)
Change in initial hardness ageing for 24	+5	IS 3400 (Part II)

1.15.5 Hanging Rubber Door Stopper

1.15.5.1 These shall be of cast brass, finished bright, chromium plated or as specified.

Aluminium stopper shall be anodised and the anodic coating shall not be less than grade AC-10 of IS:1868. The size and pattern of the door stopper shall be approved by the Engineer-in-Charge. The size shall be determined by its length.

1.15.6 Casement Brass Stays (Straight Peg Type)

1.15.6.1 These shall be made of mild steel, cast brass, aluminium (extruded section) or plastic (Polypropylene) as specified. Mild steel casement stays shall be a copper oxidised (black finish) or as specified. Cast brass stays shall be finished bright or chromium plated or as specified. Aluminium stays shall be anodised and the anodic coating shall not be less than grade AC-10 of IS 1868. Aluminium and M.S. stays shall be made from channel section. The stays shall not weigh less than that indicated below:

200 mm	0.24 kg each
250 mm	0.28 kg each
300 mm	0.33 kg each

1.15.6.2 The shape and pattern of the stays shall be approved by the Engineer-in-Charge.

The size of stays shall be determined by its length as shown in the plate. The plastic (Polypropylene) stays shall conform to IS 6318.

1.15.7 Fan Light Pivots

1.15.7.1 These shall generally conform to IS 1837. These shall be of mild steel or cast brass or Aluminium or as specified. The brass, fan light pivots shall be finished bright, chromium plated or as specified. M.S. fan light pivot shall be copper oxidized (black finish) or as specified. The base and socket plate of M.S. fan light pivots shall be made from minimum 3.0 mm M.S. sheet and the pivot shall be of round M.S. bar of minimum 10 mm diameter projecting out by minimum 12 mm length and firmly rivetted to the base plate.

1.15.7.2. The base and socket plate of cast brass fan light pivots shall be made from minimum 3.0 mm thick brass plate and the projected pivot shall not be less than 12 mm diameter and 12 mm length, cast in single piece with the base plate.

1.16. PAINTING READY MIXED PAINT OVER G.S. SHEETS

1.16.0 Ready mixed paint, suitable for painting over G.S. sheets, of approved brand and manufacture and of the required shade shall be used. New or weathered G.S. sheets shall be painted with a priming coat of one coat of redoxide zinc chromate paint. Primer shall be applied before fixing sheets in place.

1.16.1 Preparation of Surface

1.16.1.1 Painting New Surface: The painting of new G.S. sheets shall not usually be done till the sheets have weathered for about a year. When new sheets are to be painted before they have weathered they shall be treated with a mordant solution prepared by mixing 38 gm of copper acetate in a liter of soft water or 13 gm hydrochloric acid in a solution of 13 gm each of copper chloride, copper nitrate and ammonium chloride dissolved in a liter of soft water. This quantity of solution is sufficient for about 235 sqm. to 280 sqm of area and is applied for ensuring proper adhesion of paint. The painting with the mordant solution will be paid for separately.

Before painting on new or weathered G.S. sheets, rust patches shall be completely cleaned with coarse emery paper and brush. All grease marks shall also be removed and the surface washed and dried and rusted surface shall be touched with ready mixed paint of red lead.

1.16.1.2 Painting Old Surface : If the old paint is firm and sound, it shall be cleaned of grease, smoke etc. The surface shall then be rubbed down with sand paper and dusted. Rusty patches shall be cleaned up and touched with red lead.

1.16.2 Application

The number of coats to be applied shall be as in the description of item. In the case of C.G.S. sheets, the crowns of the corrugations shall be painted first and when these get dried the general coat shall be given to ensure uniform finish over the entire surface without the crowns showing signs of thinning.

The second or additional coats shall be applied when the previous coat has dried.

1.17. PAINTING WITH ENAMEL PAINT

1.17.1 Enamel Paint (conforming to IS 2933) of approved brand and manufacture and of the required colour shall be used.

For the under coat, the paint of same quality but of shade to suit that of the top coat shall be used.

1.17.2 Preparation of surface and application shall be as specified fewer than as (conforming to IS 2933) for painting on new surfaces or old surfaces, as the case may be.

1.18. REPAIR TO PLASTER IN PATCHES.

The repair to plaster of thickness 12mm to 20mm in patches of area upto 2.5 sqm shall be done with white cement polymer modified self-curing mortar. Before applying the mortar cutting the patch in proper regular (square/ rectangle) shape, racking out joints and preparing the wall to receive the plaster shall be done. The payment shall be made in area of patches measured in sqm.

1.18.1 Measurements

Patch repair shall be measured in sqm.

1.18.2 Rate: The rate shall include the cost of all materials and labour involved in all the operations described above.

1.19. REPLACEMENT OF OLD DAMAGED W.C. SEATS

The execution/operation of the item is as under:

Dismantling and taking out the old WC seat and “S” or “P” trap at site complete with all operations including all necessary materials, labour and disposal of dismantled material i/c malba, debris etc. including lead upto dumping ground.

Providing “S” or “P” trap and water closet squatting pan (Indian type) of approved brand of good quality.

Fixing the W.C. with trap in position along with trap by making all arrangement of connecting it to the flushing cistern. Thereafter the gap left in the filled up portion is to be leveled by cement concrete 1:5:10 and floor tiles of same shade are also to be provided over it to match the floor of the toilet.

1.19.1 Measurement & Rate

The measurements and payment of replaced W.C Seats shall be made on each basis

1.20. CUTTING HOLES OF REQUIRED SIZE IN BRICK MASONRY WALL

Cutting holes of required size in brick masonry wall for fixing of exhaust fan including providing and fixing 300mm dia PVC pipe conforming BIS-12818 and making good the same etc.

complete. The hole shall be cut with cutting tool by marking hole all-round the circle with the help of power drill machine so that the adjoining wall should not get damaged.

1.20.1 Measurement & Rate

The measurements and payment of cutting holes and finishing etc. shall be made on each basis

1.21. DISMANTLING W.C. PAN OF ALL SIZES

Dismantling W.C. Pan of all sizes including disposal of dismantled materials i/c malba all complete as per directions of Engineer-in-Charge. The W.C. seat is taken out along with trap and the area is to be cleaned off all dust and rubbish etc. Thereafter the hole left in the flooring is to be leveled by cement concrete 1:5:10 and floor tiles of same shade are also to be provided over it to match the floor of the toilet room.

1.21.1 Measurement & Rate

The measurements and payment of dismantling W.C. Pan of all sizes shall be made on each basis.

1.22. HACKING OF CC FLOORING

Hacking the CC flooring including cleaning the surface etc. complete as per direction of the Engineer-in- Charge. The hacking of CC flooring is done with chisel and hammer to make the top surface of flooring rough before laying tile/ marble/granite flooring etc. The hacking should be at least 10 nos. in 30x30cm area of the floor.

1.22.1 Measurement & Rate

The measurements and payment of hacking of CC flooring shall be made on sqm.

1.23. DISMANTLING 15 TO 40MM DIA G.I. PIPE

Dismantling 15 to 40mm dia G.I. pipe including stacking of dismantled pipes (within 50 meters lead) as per direction of Engineer-in-Charge. The pipe dismantling is done from tap point to main line. The 15mm dia is to be dismantled first and thereafter the dismantling/taking out the pipe shall proceed towards bigger dia pipe at the last. The pipe is removed from its joints/sockets/T-section gently with pipe wrench/tool so that the old pipe is not getting damaged and the same can be reused where required. The old dismantle pipe will be stacked dia wise and connected fittings are also to be stored properly for reuse.

1.23.1 Measurement & Rate

The measurements and payment of Dismantling G.I. pipe shall be made on meter.

1.24. TAKING OUT EXISTING WOODEN DOOR SHUTTER AND RE-FIXING THE SAME AFTER REPAIRS

Taking out existing wooden door shutter, repair by de-screwing hinges etc. and re-fixing the repaired door shutters to existing door frames, including replacement of hinges with screws etc. as required, all complete as per the direction of the Engineer-in-charge. The old shutter is to be taken out by removing the screws from the hinges by screw driver/screw fixing equipment (electric driven). Thereafter, the damaged part of the shutters such as styles/ panels/veneering etc. is replaced with new one and the door shutter is prepared for re-fixing to the door frame. During re-fixing the position of hinges if required may be shifted for proper anchorage with 50mm stainless steel screw with cross head. The re-fixing with butt hinges by means of screws is done with the help of electric driven screw driving equipment. The whole door including chokhat is to be re-painted with required colour to match the door and shutter with the same shade.

1.24.1 Measurement & Rate

The measurements and payment shall be made on each basis.

OIL EMULSION (OIL BOUND) WASHABLE DISTEMPERING (ON OLD SURFACE)

Materials

Oil emulsion (Oil Bound) washable distemper (IS 428) of approved brand and manufacture shall be used. The primers where used as on old work (surface) shall be cement primer or distemper primer as described in the item. These shall be of the same manufacture as distemper. The distemper shall be diluted with water or any other prescribed thinner in a manner recommended by the manufacturer. Only sufficient quantity of distemper required for day's work shall be prepared.

The distemper and primer shall be brought by the contractor in sealed tins in sufficient quantities at a time to suffice for a fortnight's work, and the same shall be kept in the joint custody of the contractor and the Engineer-in-Charge. The empty tins shall not be removed from the site of work, till this item of work has been completed and passed by the Engineer-in-Charge.

Preparation of the Surface

For work on the old surface shall be thoroughly cleaned of dust, old white or colour wash by washing and scrubbing. The surface shall then be allowed to dry for at least 48 hours. It shall then be sand papered to give a smooth and even surface. Any unevenness shall be made good by applying putty, made of plaster of paris mixed with water on the entire surface including filling up the undulations and then sand papering the same after it is dry.

In the case of old work, all loose pieces and scales shall be removed by sand papering.

The surface shall be cleaned of all grease, dirt etc.

Pitting in plaster shall be made good with plaster of paris/wall putty mixed with the colour to be used. The surface shall then be rubbed down again with a fine grade sand paper and made smooth. A coat of the distemper shall be applied over the patches. The patched surface shall be allowed to dry thoroughly before the regular coat of distemper is applied.

Application

Priming Coat: The priming coat shall be with distemper primer or cement primer, as required in the description of the item.

Oil bound distemper is not recommended to be applied, within six months of the completion of wall plaster. However, newly plastered surfaces if required to be distempered before a period of six months shall be given a coat of alkali resistant priming Paint conforming to IS 109 and allowed to dry for at least 48 hours before distempering is commenced.

Distemper Coat: For old work, after the primer coat has dried for at least 48 hours, the surface shall be lightly sand papered to make it smooth for receiving the distemper, taking care not to rub out the priming coat. All loose particles shall be dusted off after rubbing. One coat of distemper properly diluted with thinner (water or other liquid as stipulated by the manufacturer) shall be applied with brushes in horizontal strokes followed immediately by vertical ones which together constitute one coat. The subsequent coats shall be applied in the same way. Two or more coats of distemper as are found necessary shall be applied over the primer coat to obtain an even shade. A time interval of at least 24 hours shall be allowed between successive coats to permit proper drying of the preceding coat.

15 cm double bristled distemper brushes shall be used. After each days work, brushes shall be thoroughly washed in hot water with soap solution and hung down to dry. Old brushes which are dirty and caked with distemper shall not be used on the work.

Measurement: Length and breadth shall be measured correct to a cm. and area shall be calculated in sqm correct to two places of decimals.

Rate

The rate shall include the cost of all labour and materials involved in all the above operations (including priming coat) described above.

EXTERIOR PAINTING ON WALL (ON OLD SURFACE)

Material

The paint shall be (Textured exterior paint/Acrylic smooth exterior paint/premium acrylic smooth exterior paint) of approved brand and manufacture.

This paint shall be brought to the site of work by the contractor in its original containers in sealed condition. The material shall be brought in at a time in adequate quantities to suffice for the whole work or at least a fortnight's work. The materials shall be kept in the joint custody of the contractor and the Engineer-in-Charge. The empty containers shall not be removed from the site of work till the relevant item of work has been completed and permission obtained from the Engineer-in-Charge.

Preparation of Surface

For old work, the surface shall be thoroughly cleaned off all mortar dropping, dirt dust, algae, fungus or moth, grease and other foreign matter of brushing and washing, pitting in plaster shall make good, surface imperfections such as cracks, holes etc. should be repaired using white cement. The prepared surface shall have received the approval of the Engineer in charge after inspection before painting is commenced.

Application

Base coat of water proofing cement paint

Before pouring into smaller containers for use, the paint shall be stirred thoroughly in its container, when applying also the paint shall be continuously stirred in the smaller containers so that its consistency is kept uniform. Dilution ratio of paint with potable water can be altered taking into consideration the nature of surface climate and as per recommended dilution given by manufacturer. In all cases, the manufacturer's instructions & directions of the Engineer-in-charge shall be followed meticulously.

The lids of paint drums shall be kept tightly closed when not in use as by exposure to atmosphere the paint may thicken and also be kept safe from dust.

Paint shall be applied with a brush on the cleaned and smooth surface. Horizontal strokes shall be given, First and vertical strokes shall be applied immediately afterwards. This entire operation will constitute one coat. The surface shall be finished as uniformly as possible leaving no brush marks.

Measurement: Length and breadth shall be measured correct to a cm. and area shall be calculated in sqm correct to two places of decimals.

Rate

The rate shall include the cost of all labour and materials involved in all the above operations (including priming coat) described above.

PAINTING SYNTHETIC ENAMEL PAINT OVER STEEL WORK (ON OLD SURFACE)

Synthetic enamel

Paint, suitable for painting over Steel work, of approved brand and manufacture and of the required shade shall be used. Old or weathered steel work shall be painted with a priming coat of one coat of red oxide zinc chromate Paint. Primer shall be applied before fixing sheets in place. Two or more coat of paint has to be applied as per requirement.

Preparation of Surface

Painting Old Surface: The painting of old steel work shall not usually be done till they have weathered for about a year. When old surface are to be painted before they have weathered they shall be treated with a mordant solution prepared by mixing 38 gm of copper acetate in a liter of soft water or 13 gm hydrochloric acid in a solution of 13 gm each of copper chloride, copper nitrate and ammonium chloride dissolved in a liter of soft water. This quantity of solution is sufficient for about 235 sqm. to 280 sqm of area and is applied for ensuring proper adhesion of Paint.

Before painting on old or weathered steel surface, rust patches shall be completely cleaned with coarse emery paper and brush. All grease marks shall also be removed and the surface washed and dried and rusted surface shall be touched with synthetic enamel paint of approved brand, manufacturer and shade.

Measurement:

Measurement of surface shall be taken in sqm.

Rate

Rates shall include cost of all labour and materials involved in all the operations described above.

2. DISMANTLING AND DEMOLISHING

LIST OF BUREAU OF INDIAN STANDARD CODES

<i>S. No.</i>	<i>BIS. No.</i>	<i>Subject</i>
1.	IS 1200 (Pt - XVIII)	Method of Measurements of Building and Civil Engineering Works (Part -XVIII) Demolition and Dismantling
2.	IS 4130	Demolition of Buildings

TERMINOLOGY

Deconstruction – Means a selective demolition in which salvage, reuse and recycling of demolished structure is maximized. The term ‘Dismantling’ implies carefully separating the parts

without damage and removing. This may consist of dismantling one or more parts of the building as specified or shown on the drawings.

Demolition: The term 'Demolition' implies breaking up. This shall consist of demolishing whole or part of work either manually or using mechanical force (various equipment) or by implosion using explosion, including all relevant items as specified or shown on the drawings.

2.1. GENERAL

This chapter relates to buildings only.

2.1.1 Precautions

2.1.1.1 All materials obtained from dismantling or demolition shall be the property of the Government unless otherwise specified and shall be kept in safe custody until they are handed over to the Engineer-in-Charge/ authorized representative.

2.1.1.2 The demolition shall always be well planned before hand and shall generally be done in reverse order of the one in which the structure was constructed. The operations shall be got approved from the Engineer-in-Charge before starting the work.

Due care shall be taken to maintain the safety measures prescribed in IS 4130 and construction and demolition waste management rules 2016 shall be followed.

2.1.1.3 Necessary propping, shoring and or under pinning shall be provided to ensure the safety of the adjoining work or property before dismantling and demolishing is taken up and the work shall be carried out in such a way that no damage is caused to the adjoining work or property. Wherever specified, temporary enclosures or partitions and necessary scaffolding with suitable double scaffolding and proper cloth covering shall also be provided, as directed by the Engineer-in-Charge. It shall be ensured that no dust is generated while demolishing. Demolition Rules – 2016 shall be followed.

2.1.1.4 Necessary steps shall be taken to keep noise and dust nuisance to the minimum. All work needs to be done under the direction of Engineer-in-Charge. Helmets, goggle, safety belts etc., should be used whenever required and as directed by the Engineer-in-Charge. The demolition work shall be proceeded with in such a way that it causes the least damage and nuisance to the adjoining building and the public. Barricading shall be provided as per NGT guidelines.

2.1.1.5 Dismantling shall be done in a systematic manner. All materials which are likely to be damaged by dropping from a height or by demolishing roofs, masonry etc. shall be carefully removed first. Chisels and cutters may be used carefully as directed. The dismantled articles shall be removed manually or otherwise, lowered to the ground (and not thrown) and then properly stacked as directed by the Engineer-in-Charge.

2.1.1.6 Where existing fixing is done by nails, screws, bolts, rivets, etc., dismantling shall be done by taking out the fixing with proper tools and not by tearing or ripping off.

2.1.1.7 Any serviceable material, obtained during dismantling or demolition, shall be separated out and stacked properly as directed by the Engineer-in-Charge within a lead of 50 meters. All unserviceable materials, rubbish etc. shall be disposed off at authorized locations by urban local bodies as directed by the Engineer-in-Charge.

2.1.1.8 The contractor shall maintain/disconnect existing services, whether temporary or permanent, wherever required by the Engineer-in-Charge

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- 2.1.1.9 No demolition work should be carried out at night especially when the building or structure to be demolished is in an inhabited area.
 - 2.1.1.10 Appropriate screens shall be placed where necessary to prevent injuries due to falling pieces.
 - 2.1.1.11 Water spray shall be used to reduce dust while tearing down plaster from brick work.
 - 2.1.1.12 Safety belts shall be used by labourers while working at higher level to prevent falling from the structure. Wherever, possible mechanized working platform shall be used.
 - 2.1.1.13 First-aid equipment shall be made available at all demolition works of any magnitude.

2.2. RECOMMENDATIONS FOR DEMOLITION OF CERTAIN SPECIAL TYPES AND ELEMENTS OF STRUCTURES

- 2.2.1 Roof Trusses If a building has a pitched roof, the roof structure should be removed to wall plate level by hand method. Sufficient purlins and bracing should be retained to ensure stability of the remaining roof trusses while each individual truss is removed progressively.
 - 2.2.1.1 Temporary bracing should be added, where necessary, to maintain stability. The end frame opposite to the end where dismantling is commenced, or a convenient intermediate frame should be independently and securely guyed in both directions before work starts.
 - 2.2.1.2 On no account should the bottom tie of roof trusses be cut until the principal rafters are prevented from making outward movement.
- 2.2.3 Heavy Floor Beams Heavy bulks of timber and steel beams should be supported before cutting at the extremities and should then be lowered to a safe working place.
- 2.2.6 Cantilevers (Not part of a Framed Structure)
A cantilever type of construction depends for its stability on the super imposed structure. Canopies, cornices, staircases and balconies should be demolished or supported before the tailing down load is removed.
- 2.2.7 In-situ Reinforced Concrete
 - 2.2.7.1 Before commencing demolition, the nature and condition of the concrete, the condition and position of reinforcement, and the possibility of lack of continuity of reinforcement should be ascertained.
 - 2.2.7.2 Attention should be paid to the principles of the structural design to determine which parts of the structure depend on each other to maintain overall stability.
 - 2.2.7.3 Demolition should be commenced by removing partitions and external non-load bearing cladding. It should be noted that in some buildings the frame may rely on the panel walls for stability.
 - 2.2.7.4 Where hard demolition methods are to be used, the following procedures should be used.
Reinforced Concrete Beams: For beams, a supporting rope should be attached of preferably at two or three locations to the beam. Then the concrete should be removed from both ends by pneumatic drill and the reinforcement exposed. The reinforcement should then be cut in such a way as to allow the beam to be lowered under control to the floor.

Reinforced Concrete Columns: For columns, the reinforcement should be exposed at the base after restraining wire guy ropes have been placed round the member at the top. The reinforcement should then be cut in such a way as to allow the column to be pulled down to the floor under control.

Reinforced Concrete Walls Reinforced concrete walls should be cut into strips and demolished as for columns

2.3. MEASUREMENTS

2.3.1 All work shall be measured net in the decimal system, as fixed in its place, subject to the following limits, unless otherwise stated hereinafter.

- (a) Dimensions shall be measured correct to a cm.
- (b) Areas shall be worked out in sqm correct to two places of decimal.
- (c) Cubical contents shall be worked out to the nearest 0.01 cum.

2.3.2 Parts of work required to be dismantled and those required to be demolished shall be measured separately.

2.3.3 Measurements of all work except hidden work shall be taken before demolition or dismantling and no allowance for increase in bulk shall be allowed.

2.3.4 Specifications for deduction for voids, openings etc. shall be on the same basis as that adopted for new construction of the work.

2.3.5 Roofs

Roof coverings generally including battens boarding, mats, bamboo jaffari or other subsidiary supports shall be measured in square meters

Ridges, hips and valleys shall be girthed and included with the roof area. Corrugated or semi corrugated surfaces shall be measured flat and not girthed.

R.B. or R.C.C. roofs shall be measured in cum.

Supporting members, such as rafters, purlins, beams joists, trusses etc. of wood shall be measured in cubic meters and steel or iron sections, in kilograms.

2.3.6 Ceiling

The stripping of ceilings shall be measured in square meters.

Dismantling of supporting joists, beams, etc. shall be measured in cubic meters.

2.3.7 Flooring and Paving's

Dismantling of floors (except concrete and brick floors) shall be measured in square meters. Supports such as joints, beams etc. if any shall be measured cubic meters.

Concrete and bricks paving shall be measured in cubic meters.

2.3.8 Concrete and Brick Roofs and Suspended Floors

Demolition of floors and roofs of concrete or brick shall be measured in cubic meters.

Beams cantilevers or other subsidiary supports of similar materials, shall be included in the item. In measuring thickness of roofs provided with water proofing treatments with bitumen felts, the thickness of water proofing treatment shall be ignored

2.3.9 Walls and Piers

Taking down walls and independent piers or columns of brick, stone or concrete shall be measured, in cubic meters. All copings, corbels, cornices and other projections shall be included with the wall measurements.

In measuring thickness of plastered walls, the thickness of plaster shall be ignored.

Ashlar face stones, dressed stone work, pre-cast concrete articles, etc. if required to be taken down intact shall be so stated and measured separately in cubic meters.

Cleaning bricks stacking for measurements including all extra handling and removal and disposing off the rubbish as stated shall be enumerated in thousands of cleaned bricks.

Cleaning stone obtained from demolished/dismantling stone masonry of any description including ashlar facing dressed stone work, stone slabs or flagging and pre-cast concrete blocks including all extra handling and disposing off the rubbish as stated shall be measured in cubic meters of cleaned stone.

Honeycomb works or cavity walls of bricks stone or concrete shall be measured as solid.

2.3.10 Reinforced Concrete and Brick Work

Reinforced concrete structures and reinforced brick roofs and walls shall be measured in cubic meters and if reinforcement is required to be salvaged, it shall be so stated.

Where reinforcement is required to be separated, scraped and cleaned, the work shall be measured separately in quintal of salvaged steel.

2.3.11 Partitions, Trellis Work etc.

Partitions or light walls, of lath and plaster, trellis work, expanded metal, thin concrete or terracotta slabs and other similar materials including frame work if any shall be measured in square meters stating the overall thickness.

2.3.12 Wood Work

All wood work including karries average 40 sq cm or over in section, shall be measured in cubic meters, while that under 40 sq cm in section, in running meters. Ballies shall be measured in running meters.

Boarding including wooden chajjas and sun shades along with supports shall be measured in square meters in its plane.

2.3.13 Steel and Iron Work

All steel and iron work shall be measured in kilograms. The weight shall be computed from standard tables unless the actual weight can readily be determined.

Riveted work, where rivets are required to be cut, shall be measured separately.

Marking of structural steel required to be re-erected shall be measured separately.

In framed steel items, the weight or any covering material or filling such as iron sheets and expanded metal shall be included in the weight of the main article unless such covering is not ordered to be taken out separately.

2.3.14 Doors and Windows

Dismantling of doors, windows, clerestory windows, ventilators etc. (wood or metal) whether done separately or along with removal of wall by making recess in the wall shall be enumerated. Those exceeding 3 sqm each in area shall be measured separately. The item shall include removal of chowkhats architraves, holdfasts and other attachments.

If only shutters are to be taken out it shall be measured separately.

2.3.15 Pipes and Sewer Lines

Water pipe lines including rain water pipes with clamps and specials, sewer lines (salt glazed ware or concrete) etc. shall be described by their diameter and length measured in running meters inclusive of joints.

If the joints, special and fittings etc. are required to be separated, it shall be so stated and enumerated.

Manholes and inspection chambers shall be enumerated stating the size and depth of manhole/inspection chamber. They shall be classified into different groups depending

upon the depth, in unit of half and one meter depth. The depth of the manhole shall be the distance between the top of manhole cover and invert level of the drain.
Ventilating shafts, gully traps, flushing cisterns and other appurtenant items of work shall be enumerated.

2.3.16 Posts or Struts

Posts or struts (wood, steel or RCC) section including taking out embedded portion shall be measured in running meters.

2.3.17 Fencing Wire Mesh

Wire mesh fencing of any type with frame shall be measured in square meters.

2.3.18 Glazing

Taking out any portion of serviceable glass except polished plate, from old sashes, skylights, etc. (any thickness, weight or size) raking out old putty, etc. shall be measured in square meters. Irregular circular panes shall be measured as rectangle or square enveloping the same. The width and height being measured correct to the nearest 0.5 cm.

2.4. Rates

The rate shall include the cost of all labour involved and tools used in demolishing and dismantling including scaffolding. The rate shall also include the charges for separating out and stacking the serviceable material properly and disposing off unserviceable material within a distance of 50 meters. The rate shall also include for temporary shoring for the safety of portions not required to be pulled down, or of adjoining property, and providing temporary enclosures or partitions, where considered necessary

3. Methods of Repairs and Waterproofing

extent possible while adhering to the recommendations above.

3.1. Dampness on interior walls above the floor and skirting Levels

3.1(A) MODERATE DAMPNESS

- a) Start by removing loose plaster from damaged areas and re-plaster using an integral waterproofing compound.
- b) On damp patches without efflorescence, apply waterproofing coating directly on the repaired plaster level.
- c) Allow to cure.
- d) Start painting based on recommended painting procedure.

3.1(B) EFFLORESCENCE

Where interior walls are severely affected by efflorescence it is important to first stop its effect.

- a) Remove all loose plaster up to the brick level from the affected area.
- b) Remove all loose material with the help of a wire brush.
- c) Apply waterproofing coating directly on the bricks.
- d) Re-plaster this area using integral waterproofing compound.
- f) Finish with painting.

3.2. LEAKS FROM ADJOINING WET AREAS KITCHEN / BATHROOM:

Leaks from adjoining wet areas like kitchens and bathrooms. Leaks from wet areas like kitchens and bathrooms arise from faults in plumbing pipes, AC pipes, sanitary fittings or the wearing away of joints between tiles.

3.2(A) MODERATE DAMPNESS

- a) Identify and plug the source of the leak with the help of an experienced plumber.
- b) Refill the joints between the tiles with Epoxy Grout.

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- c) For damp patches on the walls, remove loose plaster from the damaged areas and re-plaster this area using an integral waterproofing compound.
 - d) Apply waterproofing coating directly on the repaired plaster level.
 - e) Allow to cure.
 - f) Paint as per recommended painting

3.2(B) EFFLORESCENCE

Identify and plug the leakage as described previously. For interior walls severely affected by efflorescence:

- a) Remove all loose plaster up to the brick level from the affected area.
- b) Remove all loose material with the help of a wire brush.
- c) Apply waterproofing coating directly on the bricks.
- d) Re-plaster using integral water proofing compound.
- e) Finish with painting.

3.3. Mid-level damp patches on interior walls

Leaks from wet areas like kitchens and bathrooms arise from faults in plumbing pipes, AC pipes, sanitary fittings or the wearing a way of joints between tiles.

3.3(A) MODERATE DAMPNESS

- a) Identify and plug the source of the leak with the help of an experienced plumber.
- b) Refill the joints between the tiles with Epoxy Grout.
- c) For damp patches on the walls, remove loose plaster from the damaged areas and re-plaster this area using an integral waterproofing compound.
- d) Apply waterproofing coating directly on the repaired plaster level.
- e) Allow to cure.
- f) Paint as per recommended painting produce.

3.3(B) SEVERE EFFLORESCENCE

Identify and plug the leakage as described previously. For interior walls severely affected by efflorescence:

- a) Remove all loose plaster up to the brick level from the affected area.
- b) Remove all loose material with the help of a wire brush.
- c) Apply acrylic polymer-modified cementitious high performance waterproofing coating directly on the bricks.
- d) Re-plaster using water proofing compound material.
- e) Finish with painting

3.4. RAINWATER INGRESS FROM DEFECTS IN EXTERIOR WALLS

These waterproofing issues occur from cracks and weakened joints in the exterior walls, paint degradation, or poor maintenance, which results in rainwater seeping into the walls and causing dampness or seepage.

3.4(A) MODERATE DAMPNESS

- a) Start by identifying cracks in the exterior walls and repair them with Crack Seal/SmartCare Exterior Crack Filler.
- b) Follow this by applying any exterior emulsion coating.
- c) For damp patches on the interior walls, remove loose plaster from the damaged areas and re-plaster using an integral waterproofing compound.
- d) Apply waterproofing coating directly on the repaired plaster level.
- e) Allow to cure.
- f) Paint as per the recommended painting procedure.

3.4(B) EFFLORESCENCE

Treat exterior walls as previously described. For interior walls severely affected by efflorescence, it is important to first stop its effect:

- a) Remove all loose plaster up to the brick level from the affected area.
- b) Remove all loose material with the help of a wire brush.
- c) Apply waterproofing coating directly on the bricks.
- d) Re-plaster this area using water proofing compound.
- e) Finish with painting.

3.5. Dampness in interior walls around window frames

Gaps or joints between window frames and walls can result in rainwater travelling into the walls and causing damp patches.

3.5(A) MODERATE DAMPNESS

- a) Start by identifying cracks in the exterior walls and repair them with Crack Seal / Exterior Crack Filler.
- b) Where there are gaps between the window frames and walls, fill these with Akrylmax or Universal Sealants.
- c) Apply any exterior emulsion coating.
- d) For damp patches in the interior walls, remove loose plaster from the damaged areas and re-plaster using, an integral waterproofing compound.
- e) Apply waterproofing coating directly on the repaired plaster level.
- f) Allow to cure.
- g) Paint as per the recommended painting procedure.

3.5(B) SEVERE EFFLORESCENCE

Treat exterior walls as described previously. For interior walls severely affected by efflorescence, it is important to first stop its effect:

- a) Remove all loose plaster up to the brick level from the affected area.
- b) Remove all loose material with the help of a wire brush.
- c) Apply waterproofing coating directly on the bricks.
- d) Re-plaster using water proofing compound.
- e) Finish with painting.

3.6. RAIN WATER SEEPAGE FROM DEFECTS IN EXTERIOR WALLS

These waterproofing issues occur when there are cracks and weakened joints in the exterior walls, paint degradation, or poor maintenance, which results in rainwater seeping into the walls and causing dampness or seepage.

3.7. DAMPNESS

3.6(A) MODERATE DAMPNESS

- a) Start by identifying cracks in the exterior walls and repair them with Crack Seal/ SmartCare Exterior Crack Filler.
- b) Then apply any exterior emulsion coating.
- c) For damp patches in the interior walls, remove loose plaster from the damaged areas and re-plaster using, an integral waterproofing compound.
- d) Apply waterproofing coating directly on the repaired plaster level.
- e) Allow to cure.
- f) Paint as per the recommended painting procedure.

3.7(B) EFFLORESCENCE

Treat exterior walls as described previously. For interior walls severely affected by efflorescence, it is important to first stop its effect:

- a) Remove all loose plaster up to the brick level from the affected area.
- b) Remove all loose material with the help of a wire brush.
- c) Apply waterproofing coating directly on the bricks.
- d) Re-plaster using water proofing compound.
- e) Finish with painting.

3.8. Interior ceiling patches

LEAKS IN THE KITCHEN OR BATHROOM FROM THE FLOOR OR BUILDING ABOVE

Dampness or seepage in ceilings occur through leaks from wet areas like kitchens and bathrooms from the floor above. These failures arise from faults in plumbing pipes, AC pipes, sanitary fittings, or the wearing away of joints between tiles.

3.8(A) MODERATE DAMPNESS

- a) Identify and plug the source of the leak in the floor above with the help of an experienced plumber, as this will prevent the problem from recurring.
- b) For best results and to prevent this problem from recurring, re-waterproofing of washrooms or kitchens should be done using Waterproofing Membrane.
- c) In all wet areas like washrooms and kitchens, the tiling/flooring should be checked for soundness. If there are any open joints between the tiles, refill with Epoxy Grout.
- d) Repair or re-plaster as needed, integral waterproofing compound. Re-paint the ceilings as per the recommended painting system.

3.9. LEAKS FROM TERRACE

Leaks from terraces occur from cracks in the terrace slab, blockage in the drainage pipes, waterlogging because of improper drainage, or from active leaks in water tanks.

3.9(A) FOR CRACKS IN TERRACE SLAB

- a) Check the drainage pipes on the terrace for any blockage or clogging.
- b) Check the terrace slab for cracks and soundness. All cracks up to 3 mm width can be filled with Crack Seal; wider cracks up to 10 mm can be filled with Textured Crack Filler. In case of bigger, loose cracks, repair with cement-sand-mortar, treated with Multi-Purpose Polymer.
- c) Re-waterproof and envelop the entire terrace and parapet walls with waterproofing coating.

3.9(B) FOR CEMENTITIOUS TANKS

- a) Inspect the tank interior and exteriors for any cracks. Repair these as described earlier.
- b) Waterproof the tank interior using Epoxy waterproofing coating, meant for waterproofing cementitious water tanks.

3.10. Interior walls affected by efflorescence

HIGH SALT CONTENT IN GROUND WATER & BRICKS

Migration of salt to the walls where it forms a white powdery coating is called efflorescence. It occurs when there is high salt content in ground water or masonry bricks. Salt migrates to the surface of the walls due to the presence of active water or water vapor caused by leakages or rising ground water. When the water evaporates, it leaves behind salts which de-bond the plaster making it weak and chalky. All subsequent paint films over the plaster don't last.

3.10(A) MODERATE DAMPNESS

-
- a) For interior walls severely affected by efflorescence, remove all the loose plaster up till the brick level.
 - b) This system only works if applied on the bricks, since efflorescence originates at the brick level.
 - c) Apply 2 coats waterproofing coating directly on the bricks.
 - d) Re-plaster with integral waterproofing liquid.
 - e) Finish with painting as per the recommended painting procedure.

3.11. Dampness in exterior Walls

LEAKS FROM ADJOINING WET AREAS LIKE THE KITCHEN OR BATHROOMS (INSIDE THE BUILDING)

Dampness in exterior walls can be traced to adjoining wet areas like kitchens and bathrooms (inside the house) because of faults in plumbing pipes, AC pipes, sanitary fittings, or the wearing away of joints between tiles.

3.11(A) FOR CRACKS UPTO 3 MM

- a) Identify and plug the source of the leak in the adjoining washroom/ kitchen with the help of an experienced plumber.
- b) Refill the joints between the tiles with Epoxy Grout.
- c) For damp patches in the walls, remove loose plaster from the damaged areas and re-plaster using an integral waterproofing compound.
- d) Apply waterproofing coating directly on the repaired plaster level.
- e) Allow to cure.

3.11(B) EFFLORESCENCE

Identify and plug the leakage as previously described. For exteriors walls severely affected by efflorescence:

- a) Remove all loose plaster up to the brick level from the affected area.
- b) Remove all loose material with the help of a wire brush.
- c) Apply waterproofing coating directly on the bricks.
- d) Re-plaster using integral waterproofing compound.
- e) Finish with painting.

3.12. LEAKAGES

3.12(A) Active leaks in interior walls

LEAKS FROM WET AREAS LIKE KITCHENS OR BATHROOMS

Leaks from adjoining wet areas like kitchens and bathrooms arise from faults in plumbing pipes, AC pipes, sanitary fittings or the wearing away of joints between tiles.

3.12(B) MODERATE DAMPNES

- a) Identify and plug the actual source of the leak in the plumbing pipes. It is recommended that an experienced plumber inspect the pipes and fitting to ascertain the real cause.
- b) All existing gaps between tiles should be filled Epoxy Grout.
- c) Repair the damaged walls or re-plaster using an integral waterproofing compound.
- d) Where there are damp patches, apply waterproofing coating directly on the repaired plaster level.
- e) Allow to cure.
- f) Paint as per the recommended painting procedure.

3.12(C) EFFLORESCENCE

- a) Remove all loose plaster up to the brick level from the affected area.

-
- b) Remove all loose material with the help of a wire brush.
 - c) Apply waterproofing coating directly on the bricks.
 - d) Re-plaster using integral waterproofing compound material.
 - e) Finish with painting.

3.13. Active leaks in interior ceilings

LEAKS FROM TERRACE OR ROOF ABOVE

Leaks from cracks in the terrace slab, blockage in the drainage pipes, waterlogging due to improper drainage on the terrace floor or leaks from water tanks.

3.13(A) FOR LEAKS FROM TERRACE

- a) Check the drainage pipes on the terrace for any blockage or clogging.
- b) Check the terrace slab for cracks, holes and overall soundness. All cracks up to 3 mm width can be filled with Crack Seal; wider cracks up to 10 mm can be filled with Crack Filler.
- c) In case of bigger, loose cracks, repair with cement-sand-mortar treated with Multi-Purpose Polymer.
- d) Re-waterproof and envelop the entire terrace and parapet walls with A Damp Proof waterproofing coating.

3.13(B) FOR CEMENTITIOUS CRACKS

- a) Inspect the tank interior and exteriors for any cracks. Repair these as previously described.
- b) Waterproof the tank interior using Epoxy waterproofing coating, meant for waterproofing cementitious water tanks.

3.14. Active leaks in exterior walls

LEAKS FROM KITCHENS OR BATHROOMS

Leaks in exterior walls occur from adjoining wet areas like kitchens and bathrooms (inside the house) from faults in plumbing pipes, AC pipes, sanitary fittings, or the wearing away of joints between tiles.

ACTIVE LEAKS

- a) Identify and plug the source of the leak in the adjoining washroom/kitchen with the help of an experienced plumber.
- b) Refill the joints between the tiles with Epoxy Grout.
- c) Where there are damp patches on the walls, remove loose plaster from the damaged areas and re-plaster using an integral waterproofing compound.
- d) Apply waterproofing coating directly on the repaired plaster level.
- e) Allow to cure.

3.15. Interior Wall Cracks

CRACK IN WALLS ON MASONRY OR POP SURFACES

Cracks in interior walls are caused due to movements in the structure, changes in temperature and moisture, and because of deficiencies in the cement and sand ratio at the time of construction.

3.15(A) MODERATE DAMPNESS

- a) Check the plaster for soundness and bonding. If the plaster is damaged, re-plaster the surface using integral waterproofing compound material. Allow to cure.
- b) All existing cracks up to 3 mm width can be filled with Crack Seal. For bigger, loose cracks, repair with cement-sand-mortar treated with Multi-purpose Polymer.
- c) To prevent cracks from reappearing on the entire wall surface, use crack treatment solution, which provides edge-to-edge protection.

d) In case of any dampness- related issue, refer the section on interior dampness or leaks.

3.16. Exterior Wall Cracks

CRACKS IN WALLS ON MASONRY SURFACES

Cracks can come in all shapes and sizes. However, most fractures in your walls will allow water to slowly seep into the house and possibly cause dampness.

3.16(A) FOR TERRACE SLAB CRACKS

- a) Check the plaster for soundness and bonding. If the plaster is damaged, re-plaster the surface using integral waterproofing compound material. Allow to cure.
- b) All existing cracks up to 3 mm width can be filled with Crack Seal. For cracks greater than 3 mm width, use Crack Filler. For bigger, loose cracks, repair using cement-sand-mortar treated with Multi-Purpose Polymer.
- c) For any dampness-related issues, refer the section on exterior dampness or leaks. All above operations to be done in order and as per the manufacturer's specification to the complete satisfaction of the Engineer-In-Charge.
Approved Makes: PIDILITE/SICA/FOSROC/Asian paint smart care/BASF or equivalent.

4. Methodology for Anti -Termite Treatment:

Anti -Termite treatment shall covers measures for the total eradication and control of termites in building. The chemicals as well as procedure shall conform to Indian Standard code of practice for Anti termite measures in buildings (IS 6313 part 3).

- 4.1. **Mode of treatment:** Anti-Termite treatment shall be done for building with RCC foundations or with load bearing walled foundations. The principle of the treatment is to create a continuous chemical barrier Zone below and around the building/structure. The stages of treatment is mentioned below:-

(i) Soil Treatment: The application of chemicals (toxicant) to the soil adjacent to and under a building to form a chemical barrier which is lethal or repellent to termites.

(ii) Wood Treatment: The application of chemical termiticides to woodwork and wood-based materials to eliminate existing termite infestation and to make it resistant to termite attack for the future.

(iii) Treatment along /outside of foundations: The soil in contact with the external wall of the building shall be treated with chemical emulsion at the rate of 7.5 l/m² of the vertical surface of the substructure to a depth of 300 mm. To facilitate this treatment a shallow channel shall be excavated along and close to the wall at 1.75 liters per running metre of the channel. Rodding with 12 mm diameter mild steel rods at 150mm apart shall be done in the channel if necessary for uniform dispersal of the chemical to 300 mm depth from the ground level. The balance chemical of 0.5 litre per running metre shall then be used to treat the backfill earth as it is returned to the channel directing the spray toward the wall surface. If there is a concrete or masonry apron around the building, approximately 12 mm diameter holes shall be drilled as close as possible to the plinth wall at 300 mm apart, deep enough to reach the soil below, and the chemical emulsion pumped into these holes to sodk the soil below at a rate of 2.25 litres per linear metre.

(iv) Treatment at points of contact of woodwork: All existing woodwork in the building which is in contact with the floor or walls and which is in contact with the

floor or walls and which is infested by termites, shall be treated by spraying at the points of contacts with the adjoining masonry with the chemical emulsion of concentration by drilling 6 mm holes at a downward angle of about 45° at the junction of woodwork and masonry and squirting chemical emulsion into these holes till refusal or to a maximum of half a litre per hole. The treated holes shall than be sealed.

(v) Treatment of soil under floor: The points where the termites are likely to seek entry through the floor are the cracks at the following locations:-

- a) At the junction of the floor and walls as a result of shrinkage of the concrete.
- b) At construction joints in a concrete floor, cast in sections; and expansion joints in the floor.

Chemical treatment should be provided within the plinth area of the ground floor of the structure wherever such cracks are noticed, by drilling vertically 12 mm holes at the junction of floor and walls, constructional and expansion joints mentioned above at 300 mm interval to reach the soil below. Chemical emulsion shall be squirted into these holes using a hand operated pressure pump until refusal or to a maximum of one litre per hole. The holes shall be sealed. In general, the idea is to change the soil below the floor at the locations of cracks with toxicants so that termites in the soil are denied access through such cracks and openings in the floor.

- 4.2. **CHEMICALS:** Any one of the following chemicals conforming to relevant Indian Standard in water emulsion maybe used for the soil treatment in order to protect a building from termite attack.

Chemical	Indian Standard	Concentration by weight %
Chlorpyrifos 20 EC	IS 8944	1.0
Lindane 20 EC	IS 632	1.0

(i) Anti-Termite Treatment on wood work: - Providing, diluting & injecting chemical emulsion for POST CONSTRUCTIONAL anti-termite treatment at points of contact of wood work by chemical emulsion Chlorpyriphos/Lindane (in oil or kerosene based solution) @ 0.5 ltrs. per hole by drilling 6 mm holes at downward angle of 45 degree at 150 mm centre to centre and sealing the same.

(ii) Anti-Termite Treatment on below concrete or masonry: - Providing, diluting & injecting chemical emulsion for POST CONSTRUCTIONAL anti-termite treatment: Along external wall below concrete or masonry apron using chemical emulsion @ 2.25 ltr. Per linear meter including plugging holes etc. With Chlorpyriphos / Lindane E.C.20o/o with '1% concentration.

Precaution: The chemicals described in this tender are insecticides with a persistent action and is to be regarded as highly poisonous. These chemicals can have an adverse effect upon health when absorbed through the skin, inhaled as vapours or spray-mists, or swallowed. Persons carrying out chemical should know the precautions and exercise due care when handling the chemical whether in concentrate or in diluted form. The use of the chemical should be avoided where there is any risk of wells or other water supplies becoming contaminated.

5. Repairs of reinforced concrete members with corrosion

The procedure to be followed for repair where corrosion has taken place or where reinforcement is visible in the columns, staircase, beams and slab is discussed below:

- a) All loose concrete at location of cracks or spalling must be removed to expose the corroded steel from all sides. Depth of concrete of at least 20 mm beyond the

reinforcement in the vicinity of rusted steel must be removed by cutting to open-up and expose the rebar completely. If required, jacking of the beams and slabs must be carried out in the vicinity of the element to be repaired to remove as much load as possible from the members to be repaired.

b) The reinforcement must be cleaned of any loose matter, dust, rust or other materials that may be sticking to it using sand blasting followed by wire brushing.

c) An anti-corrosive coating must be applied to the reinforcement to slow down further corrosion. If a significant (more than 10%) reduction in the cross-section area of the steel is observed, lapping with a reinforcing bar of the same size and type must be carried out. The lap length must be at least the development length of the bar being lapped.

d) It is expected that the existing grade of reinforcement in the structure will differ depending on the age of the structure. A steel wire-mesh can also be used for the purpose. An anti-corrosive coating, preferably of the cathodic type must be used on these bars or mesh to prevent their corrosion.

e) Repair mortar must then be applied from the bottom of the concrete elements using the spray gun or hand trowel, in thin layers.

f) Wet process must be used for repair mortar to ensure proper strength.

g) In all cases the clear cover from all reinforcement must be ensured to be at least 25 mm in the case of slabs, 30 mm in the case of beams and staircases and 40 mm in case of column. Synthetic fibers may be required to reduce rebound and sagging of the sprayed concrete.

h) All repair mortar applied must be suitably cured to ensure adequate strength attainment. Curing compounds may be used for locations where wet curing is difficult. The uniformity of the curing compound layer has to be ensured. If further layers of repair mortar are to be applied after the application of curing compounds, the curing compound layer should not interfere with the bond between successive layers.

i) It must be ensured that all components of the repair mortar, including the admixtures, are free of chlorides. If set accelerators are used in the repair mortar, it should be especially ensured that they are chloride-free.

j) The jacking can be removed after sufficient strength is gained by the repair mortar, as specified by the manufacturer of the repair mortar.

*Based on assessment of the damage to the structural member, decision to use repair mortar or Micro concrete shall be taken by Engineer-in-charge

The special precautions and instructions provided by the manufacturers of the chemical products used in the jacketing process must be followed to the greatest

Drawings

The actual Drawings, including site plans, is attached to this section as a separate file.

Supplementary Information

PART 3 – Conditions of Contract and Contract Forms

Section VIII - General Conditions of Contract

These General Conditions of Contract (GCC), read in conjunction with the Particular Conditions of Contract (PCC) and other documents listed therein, should be a complete document expressing fairly the rights and obligations of both parties.

These General Conditions of Contract have been developed on the basis of considerable international experience in the drafting and management of contracts, bearing in mind a trend in the construction industry towards simpler, more straightforward language.

The GCC can be used for both smaller admeasurement contracts and lump sum contracts.

General Conditions of Contract

A. General

1. Definitions

Boldface type is used to identify defined terms.

- (a) The **Accepted Contract Amount** means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.
- (b) The **Activity Schedule** is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works in a lump-sum contract. It includes a lump-sum price for each activity, which is used for valuations and for assessing the effects of Variations and Compensation Events.
- (c) The **Adjudicator** is the person appointed jointly by the Employer and the Contractor to resolve disputes in the first instance, as provided for in GCC 23.
- (d) **Bank** means the financing institution **named in the PCC**.
- (e) **Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid.
- (f) **Compensation Events** are those defined in GCC Clause 46 hereunder.
- (g) The **Completion Date** is the date of completion of the Works as certified by the Project Manager, in accordance with GCC Sub-Clause 57.1.
- (h) The **Contract** is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC Sub-Clause 2.3 below.
- (i) The **Contractor** is the party whose Bid to carry out the Works has been accepted by the Employer.
- (j) The **Contractor's Bid** is the completed bidding document submitted by the Contractor to the Employer.
- (k) The **Contract Price** is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract.
- (l) **Days** are calendar days; months are calendar months.
- (m) **Dayworks** are varied work inputs subject to payment on a time basis for the Contractor's employees and

Equipment, in addition to payments for associated Materials and Plant.

- (n) A **Defect** is any part of the Works not completed in accordance with the Contract.
- (o) The **Defects Liability Certificate** is the certificate issued by Project Manager upon correction of defects by the Contractor.
- (p) The **Defects Liability Period** is the period **named in the PCC** pursuant to GCC Sub-Clause 38.1 and calculated from the Completion Date.
- (q) **Drawings** means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Employer in accordance with the Contract, include calculations and other information provided or approved by the Project Manager for the execution of the Contract.
- (r) The **Employer** is the party who employs the Contractor to carry out the Works, **as specified in the PCC**.
- (s) **Equipment** is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.
- (t) "**In writing**" or "**written**" means hand-written, type-written, printed or electronically made, and resulting in a permanent record;
- (u) The **Initial Contract Price** is the Contract Price listed in the Employer's Letter of Acceptance.
- (v) The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The **Intended Completion Date** is specified in the PCC. The **Intended Completion Date** may be revised only by the Project Manager by issuing an extension of time or an acceleration order.
- (w) **Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works.
- (x) **Plant** is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.
- (y) The **Project Manager** is the person named in the PCC (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and

administering the Contract.

- (z) **PCC** means Particular Conditions of Contract.
- (aa) The **Site** is the area defined as such in the PCC.
- (ab) **Site Investigation Reports** are those that were included in the bidding document and are factual and interpretative reports about the surface and subsurface conditions at the Site.
- (ac) **Specification** means the Specification of the Works included in the Contract and any modification or addition made or approved by the Project Manager.
- (ad) The **Start Date** is given in the PCC. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.
- (ae) A **Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.
- (af) **Temporary Works** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.
- (ag) A **Variation** is an instruction given by the Project Manager which varies the Works.
- (ah) The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the PCC.
- (ai) “**Contractor’s Personnel**” refers to all personnel whom the Contractor utilizes on the Site or other places where the Works are carried out, including the staff, labor and other employees of each Subcontractor.
- (aj) “**Key Personnel**” means the positions (if any) of the Contractor’s personnel that are stated in the Specification.
- (ak) “**ES**” means Environmental and Social (including Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH)).
- (al) “**Sexual Exploitation and Abuse**” “(SEA)” means the following:

Sexual Exploitation is defined as any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to,

profiting monetarily, socially or politically from the sexual exploitation of another;

Sexual Abuse is defined as the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions.

- (am) **“Sexual Harassment” “(SH)”** is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature by the Contractor’s Personnel with other Contractor’s or Employer’s Personnel; and
- (an) **“Employer’s Personnel”** refers to the Project Manager and all other staff, labor and other employees (if any) of the Project Manager and of the Employer engaged in fulfilling the Employer’s obligations under the Contract; and any other personnel identified as Employer’s Personnel, by a notice from the Employer or the Project Manager to the Contractor.

2. Interpretation

- 2.1 In interpreting these GCC, words indicating one gender include all genders. Words indicating the singular also include the plural and words indicating the plural also include the singular. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager shall provide instructions clarifying queries about these GCC.
- 2.2 If sectional completion is **specified in the PCC**, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).
- 2.3 The documents forming the Contract shall be interpreted in the following order of priority:
 - (a) Agreement,
 - (b) Letter of Acceptance,
 - (c) Contractor’s Bid,
 - (d) Particular Conditions of Contract,
 - (e) General Conditions of Contract, including Appendices,
 - (f) Specifications,
 - (g) Drawings,

-
- (h) Bill of Quantities,⁶ and
- (i) any other document **listed in the PCC** as forming part of the Contract.
- 3. Language and Law**
- 3.1 The language of the Contract and the law governing the Contract are **stated in the PCC**.
- 3.2 Throughout the execution of the Contract, the Contractor shall comply with the import of goods and services prohibitions in the Employer's country when
- (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or
- (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
- 4. Project Manager's Decisions**
- 4.1 Except where otherwise specifically stated, the Project Manager shall decide contractual matters between the Employer and the Contractor in the role representing the Employer.
- 5. Delegation**
- 5.1 Unless otherwise **specified in the PCC**, the Project Manager may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may revoke any delegation after notifying the Contractor.
- 6. Communications**
- 6.1 Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.
- 7. Subcontracting**
- 7.1 The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations. The Contractor shall require that its Subcontractors execute the Works in accordance with the Contract, including complying with the relevant ES requirements and the obligations set out in Sub-Clause 28.1.
- 8. Other Contractors**
- 8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors, **as referred to in the PCC**. The Contractor shall also provide

⁶ In lump-sum contracts, delete "Bill of Quantities" and replace with "Activity Schedule."

facilities and services for them as described in the Schedule. The Employer may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.

8.2 The Contractor shall also, as stated in the Specifications or as instructed by the Project Manager, cooperate with and allow appropriate opportunities for the Employer's or any other personnel, notified to the Contractor by the Employer or Project Manager, to conduct any environmental and social assessment.

9. Personnel and Equipment

9.1 The Contractor shall employ the Key Personnel and use the Equipment identified in its Bid, to carry out the Works or other personnel and Equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of Key Personnel and Equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.

9.2 The Project Manager may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Key Personnel (if any), who:

- (a) persists in any misconduct or lack of care;
- (b) carries out duties incompetently or negligently;
- (c) fails to comply with any provision of the Contract;
- (d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment;
- (e) based on reasonable evidence, is determined to have engaged in Fraud and Corruption during the execution of the Works;
- (f) has been recruited from the Employer's Personnel;
- (g) undertakes behavior which breaches the Code of Conduct for Contractor's Personnel (ES).

If appropriate, the Contractor shall then promptly appoint (or cause to be appointed) a suitable replacement with equivalent skills and experience.

Notwithstanding any requirement from the Project Manager to remove or cause to remove any person, the Contractor shall take immediate action as appropriate in response to any violation of (a) through (g) above. Such immediate action shall include removing (or causing to be removed) from the Site or other places where the Works are being carried out, any Contractor's Personnel who engages in (a), (b), (c), (d), (e) or (g) above or has been recruited as stated in (f) above."

9.3 The Contractor shall employ the Key Personnel and use the Equipment identified in its Bid, to carry out the Works or other

personnel and Equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of Key Personnel and Equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.

The Contractor shall take all necessary safety measures to avoid the occurrence of incidents and injuries to any third party associated with the use of, if any, Equipment on public roads or other public infrastructure. The Contractor shall monitor road safety incidents and accidents to identify negative safety issues, and establish and implement necessary measures to resolve them.

9.4 Labor

9.4.1 *Engagement of Staff and Labor.* The Contractor shall provide and employ on the Site for the execution of the Works such skilled, semi-skilled and unskilled labor as is necessary for the proper and timely execution of the Contract. The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labor with appropriate qualifications and experience from sources within the Country.

Unless otherwise provided in the Contract, the Contractor shall be responsible for the recruitment, transportation, accommodation and welfare facilities in accordance with GCC Sub-Clause 9.4.6, of the Contractor's Personnel, and for all payments in connection therewith.

The Contractor shall provide the Contractor's Personnel information and documentation that are clear and understandable regarding their terms and conditions of employment. The information and documentation shall set out their rights under relevant labor laws applicable to the Contractor's Personnel (which will include any applicable collective agreements), including their rights related to hours of work, wages, overtime, compensation and benefits, as well as those arising from any requirements in the Specifications. The Contractor's Personnel shall be informed when any material changes to their terms or conditions of employment occur.

9.4.2 *Conditions of Labor.* The Contractor shall inform the Contractor's Personnel about:

- (a) any deduction to their payment and the conditions of such deductions in accordance with the applicable laws or as stated in the Specifications; and
- (b) their liability to pay personal income taxes in the Country in respect of such of their salaries, wages, allowances and

any benefits as are subject to tax under the laws of the Country for the time being in force.

The Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such laws.

Where required by applicable laws or as stated in the Specifications, the Contractor shall provide the Contractor's Personnel written notice of termination of employment and details of severance payments in a timely manner. The Contractor shall have paid the Contractor's Personnel (either directly or where appropriate for their benefit) all due wages and entitlements including, as applicable, social security benefits and pension contributions, on or before the end of their engagement/ employment.

- 9.4.3 The Contractor may bring into the Country any foreign personnel who are necessary for the execution of the Works to the extent allowed by the applicable Laws. The Contractor shall ensure that these personnel are provided with the required residence visas and work permits. The Employer will, if requested by the Contractor, use its best endeavors in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national, or government permission required for bringing in the Contractor's personnel.
- 9.4.4 The Contractor shall at its own expense provide the means of repatriation to and the Contractor's Personnel employed on the Contract at the Site to their various home countries. It shall also provide suitable temporary maintenance of all such persons from the cessation of their employment on the Contract to the date programmed for their departure. In the event that the Contractor defaults in providing such means of transportation and temporary maintenance, the Employer may provide the same to such personnel and recover the cost of doing so from the Contractor.
- 9.4.5 *Disorderly conduct.* The Contractor shall at all times during the progress of the Contract use its best endeavors to prevent any unlawful, riotous or disorderly conduct or behavior by or amongst the Contractor's Personnel.
- 9.4.6 *Facilities for Staff and Labor.* Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities for the Contractor's Personnel. If stated in the Specification, the Contractor shall give access to or provide services that accommodate the physical, social and cultural needs of the Contractor's Personnel. The Contractor shall also provide similar facilities for the Employer's Personnel if stated in the Specifications.

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- 9.4.7 The Contractor shall, in all dealings with the Contractor's Personnel, pay due regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulations pertaining to the employment of labor. The Contractor shall provide the Contractor's Personnel annual holiday and sick, maternity and family leave, as required by applicable laws or as stated in the Specifications.
- 9.4.8 *Supply of Foodstuffs.* The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor's Personnel for the purposes of or in connection with the Contract.
- 9.4.9 *Supply of Water.* The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.
- 9.4.10 *Measures against Insect and Pest Nuisance.* The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.
- 9.4.11 *Alcoholic Liquor or Drugs.* The Contractor shall not, otherwise than in accordance with the laws of the Country, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal thereto by Contractor's Personnel.
- 9.4.12 *Arms and Ammunition.* The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor's Personnel to do so.
- 9.4.13 *Funeral Arrangements.* The Contractor shall be responsible, to the extent required by local regulations, for making any funeral arrangements for any of its local employees who may die while engaged upon the Works.
- 9.4.14 *Forced Labor.* The Contractor, including its Subcontractors, shall not employ or engage forced labor. Forced labor consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements.

No persons shall be employed or engaged who have been subject to trafficking. Trafficking in persons is defined as the recruitment, transportation, transfer, harboring or receipt of persons by means of the threat or use of force or other forms of coercion, abduction, fraud, deception, abuse of power, or of

a position of vulnerability, or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purposes of exploitation.

9.4.15 *Child Labor.* The Contractor, including its Subcontractors, shall not employ or engage a child under the age of 14 unless the national law specifies a higher age (the minimum age).

The Contractor, including its Subcontractors, shall not employ or engage a child between the minimum age and the age of 18 in a manner that is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.

The Contractor including its Subcontractors, shall only employ or engage children between the minimum age and the age of 18 after an appropriate risk assessment has been conducted by the Contractor with the Project Manager's approval. The Contractor shall be subject to regular monitoring by the Project Manager that includes monitoring of health, working conditions and hours of work.

Work considered hazardous for children is work that, by its nature or the circumstances in which it is carried out, is likely to jeopardize the health, safety, or morals of children. Such work activities prohibited for children include work:

- (a) with exposure to physical, psychological or sexual abuse;
- (b) underground, underwater, working at heights or in confined spaces;
- (c) with dangerous machinery, equipment or tools, or involving handling or
- (d) transport of heavy loads;
- (e) in unhealthy environments exposing children to hazardous substances, agents, or processes, or to temperatures, noise or vibration damaging to health; or
- (f) under difficult conditions such as work for long hours, during the night or in confinement on the premises of the employer.

9.4.16 *Employment Records of Workers.* The Contractor shall keep complete and accurate records of the employment of labor at the Site. The records shall include the names, ages, genders, hours worked, and wages paid to all workers. These records shall be summarized on a monthly basis and submitted to the project Manager.

9.4.17 *Workers' Organizations.* In countries where the relevant labor laws recognize workers' rights to form and to join workers'

organizations of their choosing and to bargain collectively without interference, the Contractor shall comply with such laws. In such circumstances, the role of legally established workers' organizations and legitimate workers' representatives will be respected, and they will be provided with information needed for meaningful negotiation in a timely manner. Where the relevant labor laws substantially restrict workers' organizations, the Contractor shall enable alternative means for the Contractor's Personnel to express their grievances and protect their rights regarding working conditions and terms of employment. The Contractor shall not seek to influence or control these alternative means. The Contractor shall not discriminate or retaliate against the Contractor's Personnel who participate, or seek to participate, in such organizations and collective bargaining or alternative mechanisms. Workers' organizations are expected to fairly represent the workers in the workforce.

9.4.18 *Non-Discrimination and Equal Opportunity.* The Contractor shall not make decisions relating to the employment or treatment of Contractor's Personnel on the basis of personal characteristics unrelated to inherent job requirements. The Contractor shall base the employment of Contractor's Personnel on the principle of equal opportunity and fair treatment, and shall not discriminate with respect to any aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices. Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job shall not be deemed discrimination. The Contractor shall provide protection and assistance as necessary to ensure non-discrimination and equal opportunity, including for specific groups such as women, people with disabilities, migrant workers and children (of working age in accordance with GCC Sub-Clause 9.4.15).

9.4.19 *Contractor's Personnel Grievance Mechanism.* The Contractor shall have a grievance mechanism for Contractor's Personnel, and where relevant the workers' organizations stated in GCC Sub-Clause 9.4.17, to raise workplace concerns. The grievance mechanism shall be proportionate to the nature, scale, risks and impacts of the Contract. The mechanism shall address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned in a language they understand,

without any retribution, and shall operate in an independent and objective manner.

The Contractor's Personnel shall be informed of the grievance mechanism at the time of engagement for the Contract, and the measures put in place to protect them against any reprisal for its use. Measures will be put in place to make the grievance mechanism easily accessible to all Contractor's Personnel.

The grievance mechanism shall not impede access to other judicial or administrative remedies that might be available, or substitute for grievance mechanisms provided through collective agreements.

The grievance mechanism may utilize existing grievance mechanisms, providing that they are properly designed and implemented, address concerns promptly, and are readily accessible to Contractor's Personnel. Existing grievance mechanisms may be supplemented as needed with Contract-specific arrangements.

9.4.20 *Training of Contractor's Personnel.* The Contractor shall provide appropriate training to relevant Contractor's Personnel on ES aspects of the Contract, including appropriate sensitization on prohibition of SEA and SH, and health and safety training referred to in GCC Sub-Clause 18.2.

As stated in the Specifications or as instructed by the Project Manager, the Contractor shall also allow appropriate opportunities for the relevant Contractor's Personnel to be trained on ES aspects of the Contract by the Employer's Personnel.

The Contractor shall provide training on SEA and SH, including its prevention, to any of its personnel who has a role to supervise other Contractor's Personnel.

10. Employer's and Contractor's Risks

10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Employer's Risks

11.1 From the Start Date until the Defects Liability Certificate has been issued, the following are Employer's risks:

- (a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to
 - (i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or

(ii) negligence, breach of statutory duty, or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.

(b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer or in the Employer's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

11.2 From the Completion Date until the Defects Liability Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is an Employer's risk except loss or damage due to

- (a) a Defect which existed on the Completion Date,
- (b) an event occurring before the Completion Date, which was not itself an Employer's risk, or
- (c) the activities of the Contractor on the Site after the Completion Date.

12. Contractor's Risks

12.1 From the Starting Date until the Defects Liability Certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Employer's risks are Contractor's risks.

13. Insurance

13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles **stated in the PCC** for the following events which are due to the Contractor's risks:

- (a) loss of or damage to the Works, Plant, and Materials;
- (b) loss of or damage to Equipment;
- (c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and
- (d) personal injury or death.

13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

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- 13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.
- 13.4 Alterations to the terms of an insurance shall not be made without the approval of the Project Manager.
- 13.5 Both parties shall comply with any conditions of the insurance policies.
- 14. Site Data**
- 14.1 The Contractor shall be deemed to have examined any Site Data **referred to in the PCC**, supplemented by any information available to the Contractor.
- 15. Contractor to Construct the Works**
- 15.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.
- 15.2 If the Contract specifies that the Contractor shall design any part of the permanent Works, the Contractor shall take into account the Employer's requirements which may include, if stated in the Specifications:
- (a) designing structural elements of the Works taking into account climate change considerations;
 - (b) applying the concept of universal access (the concept of universal access means unimpeded access for people of all ages and abilities in different situations and under various circumstances; and
 - (c) considering the incremental risks of the public's potential exposure to operational accidents or natural hazards, including extreme weather events.
- 16. The Works to Be Completed by the Intended Completion Date**
- 16.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.
- 16.2 The Contractor shall not carry out mobilization to the Site unless the Project Manager gives approval, an approval that shall not be unreasonably delayed, to the measures the Contractor proposes to address environmental and social risks and impacts, which at a minimum shall include applying the Management Strategies and Implementation Plans (MSIPs) and Code of Conduct for Contractor's Personnel submitted as part of the Bid and agreed as part of the Contract.

The Contractor shall submit, to the Project Manager for its approval any additional MSIPs as are necessary to manage the ES risks and impacts of ongoing Works. These MSIPs collectively comprise the Contractor's Environmental and Social Management Plan (C-ESMP). The Contractor shall review the C-ESMP, periodically (but not less than every six (6) months), and update it as required to ensure that it contains measures appropriate to the Works. The updated C-ESMP shall be submitted to the Project Manager for its approval.

- 17. Approval by the Project Manager**
- 17.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, for his approval.
- 17.2 The Contractor shall be responsible for design of Temporary Works.
- 17.3 The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary Works.
- 17.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.
- 17.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Project Manager before this use.
- 18. Health, Safety and Protection of the Environment**
- 18.1 The Contractor shall be responsible for the safety of all activities on the Site.
- 18.2 The Contractor shall:
- (a) comply with all applicable health and safety regulations and Laws;
 - (b) comply with all applicable health and safety obligations specified in the Contract;
 - (c) take care for the health and safety of all persons entitled to be on the Site and other places, if any, where the Works are being executed;
 - (d) keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons;
 - (e) provide fencing, lighting, safe access, guarding and watching of the Works until the issue of the Contract Completion Certificate;
 - (f) provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of

adjacent land;

- (g) provide health and safety training of Contractor's Personnel as appropriate and maintain training records;
- (h) actively engage the Contractor's Personnel in promoting understanding, and methods for, implementation of health and safety requirements, as well as in providing information to Contractor's Personnel, training on occupational safety and health, and provision of personal protective equipment without expense to the Contractor's Personnel;
- (i) put in place workplace processes for Contractor's Personnel to report work situations that they believe are not safe or healthy, and to remove themselves from a work situation which they have reasonable justification to believe presents an imminent and serious danger to their life or health.
- (j) Contractor's Personnel who remove themselves from such work situations shall not be required to return to work until necessary remedial action to correct the situation has been taken. Contractor's Personnel shall not be retaliated against or otherwise subject to reprisal or negative action for such reporting or removal;
- (k) where the Employer's Personnel, any other contractors employed by the Employer, and/or personnel of any legally constituted public authorities and private utility companies are employed in carrying out, on or near the site, of any work not included in the Contract, collaborate in applying the health and safety requirements, without prejudice to the responsibility of the relevant entities for the health and safety of their own personnel; and
- (l) establish and implement a system for regular (not less than six-monthly) review of health and safety performance and the working environment.

Subject to GCC Sub-Clause 16.2, the Contractor shall submit to the Project Manager for its approval a health and safety manual which has been specifically prepared for the Works, the Site and other places (if any) where the Contractor intends to execute the Works.

The health and safety manual shall be in addition to any other similar document required under applicable health and safety regulations and laws.

The health and safety manual shall set out all the health and

safety requirements under the Contract,

- (a) which shall include at a minimum:
- (i) the procedures to establish and maintain a safe working environment without risk to health at all workplaces, machinery, equipment and processes under the control of the Contractor, including control measures for chemical, physical and biological substances and agents;
 - (ii) details of the training to be provided, records to be kept;
 - (iii) the procedures for prevention, preparedness and response activities to be implemented in the case of an emergency event (i.e. an unanticipated incident, arising from both natural and man-made hazards, typically in the form of fire, explosions, leaks or spills, which may occur for a variety of different reasons including failure to implement operating procedures that are designed to prevent their occurrence, extreme weather or lack of early warning);
 - (iv) remedies for adverse impacts such as occupational injuries, deaths, disability and disease;
 - (v) the measures to be taken to avoid or minimize the potential for community exposure to water-borne, water-based, water-related, and vector-borne diseases,
 - (vi) the measures to be implemented to avoid or minimize the spread of communicable diseases (including transfer of Sexually Transmitted Diseases or Infections (STDs), such as HIV virus) and non-communicable diseases associated with the execution of the Works, taking into consideration differentiated exposure to and higher sensitivity of vulnerable groups. This includes taking measures to avoid or minimize the transmission of communicable diseases that may be associated with the influx of temporary or permanent Contract-related labor;
 - (vii) the policies and procedures on the management and quality of accommodation and welfare facilities if such accommodation and welfare facilities are provided by the Contractor in accordance with GCC Sub-Clause 9.4.6; and

(b) any other requirements stated in the Specification

18.3 Protection of the environment

The Contractor shall take all necessary measures to:

- 18.3.1 protect the environment (both on and off the Site); and
- 18.3.2 limit damage and nuisance to people and property resulting from pollution, noise and other results of the Contractor's operations and/ or activities.

The Contractor shall ensure that emissions, surface discharges, effluent and any other pollutants from the Contractor's activities shall exceed neither the values indicated in the Specifications, nor those prescribed by applicable laws.

In the event of damage to the environment, property and/or nuisance to people, on or off Site as a result of the Contractor's operations, the Contractor shall agree with the Project Manager the appropriate actions and time scale to remedy, as practicable, the damaged environment to its former condition. The Contractor shall implement such remedies at its cost to the satisfaction of the Project Manager.

19. Archaeological and Geological Findings

19.1 All fossils, coins, articles of value or antiquity, structures, groups of structures, and other remains or items of geological, archaeological, paleontological, historical, architectural or religious interest found on the Site shall be placed under the care and custody of the Employer. The Contractor shall:

- (a) take all reasonable precautions, including fencing-off the area or site of the finding, to avoid further disturbance and prevent Contractor's Personnel or other persons from removing or damaging any of these findings;
- (b) train relevant Contractor's Personnel on appropriate actions to be taken in the event of such findings; and
- (c) implement any other action consistent with the requirements of the Specifications and relevant laws.

The Contractor shall, as soon as practicable after discovery of any such finding, notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.

20. Possession of the Site

20.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date **stated in the PCC**, the Employer shall be deemed to have delayed the start of the relevant activities, and this shall be a

Compensation Event.

- 21. Access to the Site** 21.1 The Contractor shall allow the Project Manager and any person authorized by the Project Manager (including the Bank staff or consultants acting on the Bank's behalf, stakeholders and third parties, such as independent experts, local communities, or non-governmental organizations), including to carry out environmental and social audit, as appropriate, access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.
- 22. Instructions, Inspections and Audits** 22.1 The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.
- 22.2 The Contractor shall keep, and shall make all reasonable efforts to cause its Subcontractors and subconsultants to keep, accurate and systematic accounts and records in respect of the Works in such form and details as will clearly identify relevant time changes and costs.
- 22.3 Inspections & Audit by the Bank
- Pursuant to paragraph 2.2 e. of Appendix A to the GCC- Fraud and Corruption, the Contractor shall permit and shall cause its agents (where declared or not), subcontractors, subconsultants, service providers, suppliers, and personnel, to permit, the Bank and/or persons appointed by the Bank to inspect the site and/or the accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have such accounts, records and other documents audited by auditors appointed by the Bank. The Contractor's and its Subcontractors' and subconsultants' attention is drawn to GCC Sub-Clause 25.1 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank's prevailing sanctions procedures).
- 23. Appointment of the Adjudicator** 23.1 The Adjudicator shall be appointed jointly by the Employer and the Contractor, at the time of the Employer's issuance of the Letter of Acceptance. If, in the Letter of Acceptance, the Employer does not agree on the appointment of the Adjudicator, the Employer will request the Appointing Authority **designated in the PCC**, to appoint the Adjudicator within 14 days of receipt of such request.

23.2 Should the Adjudicator resign or die, or should the Employer and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator shall be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority **designated in the PCC** at the request of either party, within 14 days of receipt of such request.

24. Procedure for Disputes

24.1 If the Contractor believes that a decision taken by the Project Manager was either outside the authority given to the Project Manager by the Contract or that the decision was wrongly taken, the decision shall be referred to the Adjudicator within 14 days of the notification of the Project Manager's decision.

24.2 The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.

24.3 The Adjudicator shall be paid by the hour at the **rate specified in the PCC**, together with reimbursable expenses of the types **specified in the PCC**, and the cost shall be divided equally between the Employer and the Contractor, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within 28 days of the Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator's decision shall be final and binding.

24.4 The arbitration shall be conducted in accordance with the arbitration procedures published by the institution named and in the place **specified in the PCC**.

25. Fraud and Corruption

25.1 The Bank requires compliance with the Bank's Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework, as set forth in Appendix A to the GCC.

25.2 The Employer requires the Contractor to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

26. Stakeholder Engagement

26.1 The Contractor shall provide relevant contract-related information, as the Employer and/or Project Manager may reasonably request to conduct Stakeholder engagements.

“Stakeholder” refers to individuals or groups who:

- (i) are affected or likely to be affected by the Contract; and
- (ii) may have an interest in the Contract.

The Contractor may also directly participate in Stakeholder engagements, as the Employer and/or Project Manager may reasonably request

27. Suppliers (other than Subcontractors)

- 27.1 *Forced Labor:* The Contractor shall take measures to require its suppliers (other than Subcontractors) not to employ or engage forced labor including trafficked persons as described in GCC Sub-Clause 9.4.14. If forced labor/trafficking cases are identified, the Contractor shall take measures to require the suppliers to take appropriate steps to remedy them. Where the supplier does not remedy the situation, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to manage such risks.
- 27.2 *Child Labor:* The Contractor shall take measures to require its suppliers (other than Subcontractors) not to employ or engage child labor as described in GCC Sub-Clause 9.4.15. If child labor cases are identified, the Contractor shall take measures to require the suppliers to take appropriate steps to remedy them. Where the supplier does not remedy the situation, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to manage such risks.
- 27.3 *Serious Safety Issues:* The Contractor, including its Subcontractors, shall comply with all applicable safety obligations, including as stated in GCC Sub-Clause 18.2. The Contractor shall also take measures to require its suppliers (other than Subcontractors) to adopt procedures and mitigation measures adequate to address safety issues related to their personnel. If serious safety issues are identified, the Contractor shall take measures to require the suppliers to take appropriate steps to remedy them. Where the supplier does not remedy the situation, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to manage such risks.
- 27.4 *Obtaining natural resource materials in relation to supplier:* The Contractor shall obtain natural resource *materials* from suppliers that can demonstrate, through compliance with the applicable verification and/ or certification requirements, that obtaining such materials is not contributing to the risk of significant conversion or significant degradation of natural or critical habitats such as unsustainably harvested wood

products, gravel or sand extraction from river beds or beaches.

If a supplier cannot continue to demonstrate that obtaining such materials is not contributing to the risk of significant conversion or significant degradation of natural or critical habitats, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to demonstrate that they are not significantly adversely impacting the habitats.

28. Code of Conduct

28.1 The Contractor shall have a Code of Conduct for the Contractor's Personnel.

The Contractor shall take all necessary measures to ensure that each Contractor's Personnel is made aware of the Code of Conduct including specific behaviors that are prohibited, and understands the consequences of engaging in such prohibited behaviors.

These measures include providing instructions and documentation that can be understood by the Contractor's Personnel and seeking to obtain that person's signature acknowledging receipt of such instructions and/or documentation, as appropriate.

The Contractor shall also ensure that the Code of Conduct is visibly displayed in multiple locations on the Site and any other place where the Works will be carried out, as well as in areas outside the Site accessible to the local community and project affected people. The posted Code of Conduct shall be provided in languages comprehensible to Contractor's Personnel, Employer's Personnel and the local community.

The Contractor's Management Strategy and Implementation Plans shall include appropriate processes for the Contractor to verify compliance with these obligations.

29. Security of the Site

29.1 The Contractor shall be responsible for the security of the Site, and:

- (a) for keeping unauthorized persons off the Site;
- (b) authorized persons shall be limited to the Contractor's Personnel, the Employer's Personnel, and to any other personnel identified as authorized personnel (including the Employer's other contractors on the Site), by a notice from the Employer or the Project Manager to the Contractor.

Subject to GCC Sub-Clause 16.2, the Contractor shall submit for the Project Manager's No-objection a security management

plan that sets out the security arrangements for the Site

The Contractor shall (i) conduct appropriate background checks on any personnel retained to provide security; (ii) train the security personnel adequately (or determine that they are properly trained) in the use of force (and where applicable, firearms), and appropriate conduct towards Contractor's Personnel, Employer's Personnel and affected communities; and (iii) require the security personnel to act within the applicable Laws and any requirements set out in the Specifications.

The Contractor shall not permit any use of force by security personnel in providing security except when used for preventive and defensive purposes in proportion to the nature and extent of the threat.

In making security arrangements, the Contractor shall also comply with any additional requirements stated in the Specification."

B. Time Control

30. Program and Progress Reports

- 30.1 Within the time **stated in the PCC**, after the date of the Letter of Acceptance, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works. In the case of a lump-sum contract, the activities in the Program shall be consistent with those in the Activity Schedule. The Project Manager's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.
- 30.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.
- 30.3 The Contractor shall monitor progress of the Works and submit to the Project manager progress report and any updated Program showing the actual progress achieved and the effect of the progress achieved on the timing of the remaining Works, including any changes to the sequence of the activities, at intervals no longer than the period **stated in the PCC**. If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount **stated in the PCC** from the next payment certificate and continue to

withhold this amount until the next payment after the date on which the overdue Program has been submitted. In the case of lump-sum Contract, the Contractor shall provide an updated Activity Schedule within 14 days of being instructed to by the Project Manager.

30.4 Unless otherwise stated in the Specifications, each progress report shall include the Environmental and Social (ES) metrics set out in Appendix B.

30.5 In addition to the progress reports, the Contractor shall inform the Project Manager immediately of any allegation, incident or accident in the Site, which has or is likely to have a significant adverse effect on the environment, the affected communities, the public, Employer's Personnel, Project Manager's personnel or Contractor's Personnel. This includes, but is not limited to, any incident or accident causing fatality or serious injury; significant adverse effects or damage to private property; or any allegation of SEA and/or SH. In case of SEA and/or SH, while maintaining confidentiality as appropriate, the type of allegation (sexual exploitation, sexual abuse or sexual harassment), gender and age of the person who experienced the alleged incident should be included in the information.

The Contractor, upon becoming aware of the allegation, incident or accident, shall also immediately inform the Project Manager of any such incident or accident on the Subcontractors' or suppliers' premises relating to the Works which has or is likely to have a significant adverse effect on the environment, the affected communities, the public, Employer's Personnel, or Contractor's, its Subcontractors' and suppliers' personnel. The notification shall provide sufficient detail regarding such incidents or accidents. The Contractor shall provide full details of such incidents or accidents to the Project Manager within the timeframe agreed with the Project Manager.

The Contractor shall require its Subcontractors and suppliers (other than Subcontractors) to immediately notify the Contractor of any incidents or accidents referred to in this Subclause.

31. Extension of the Intended Completion Date

31.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.

31.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the

Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

- 32. Acceleration**
- 32.1 When the Employer wants the Contractor to finish before the Intended Completion Date, the Project Manager shall obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Employer accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the Employer and the Contractor.
- 32.2 If the Contractor's priced proposals for an acceleration are accepted by the Employer, they are incorporated in the Contract Price and treated as a Variation.
- 33. Delays Ordered by the Project Manager**
- 33.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.
- 34. Management Meetings**
- 34.1 Either the Project Manager or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.
- 34.2 The Project Manager shall record the business of management meetings and provide copies of the record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.
- 35. Early Warning**
- 35.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.
- 35.2 The Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone

involved in the work and in carrying out any resulting instruction of the Project Manager.

C. Quality Control

- 36. Identifying Defects** 36.1 The Project Manager shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.
- 37. Tests** 37.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specifications to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event.
- 38. Correction of Defects** 38.1 The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is **defined in the PCC**. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 38.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.
- 39. Uncorrected Defects** 39.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.

D. Cost Control

- 40. Contract Price⁷** 40.1 The Bill of Quantities shall contain priced items for the Works to be performed by the Contractor. The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work accomplished at the rate in the Bill of Quantities for each item.

⁷ In lump-sum contracts, replace GCC Sub-Clauses 40.1 as follows:

40.1 The Contractor shall provide updated Activity Schedules within 14 days of being instructed to by the Project Manager. The Activity Schedule shall contain the priced activities for the Works to be performed by the Contractor. The Activity Schedule is used to monitor and control the performance of activities on which basis the Contractor will be paid. If payment for materials on site shall be made separately, the Contractor shall show delivery of Materials to the Site separately on the Activity Schedule.

41. Changes in the Contract Price⁸

- 41.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change. The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Employer.
- 41.2 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bill of Quantities.

42. Variations

- 42.1 All Variations shall be included in updated Programs⁹ produced by the Contractor.
- 42.2 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Contractor shall also provide information of any ES risks and impacts of the Variation. The Project Manager shall assess the quotation, which shall be given within seven (7) days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.
- 42.3 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.
- 42.4 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.
- 42.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.
- 42.6 If the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in GCC Sub-Clause 41.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of

⁸ In lump-sum contracts, replace entire GCC Clause 41 with new GCC Sub-Clause 41.1, as follows:

41.1 The Activity Schedule shall be amended by the Contractor to accommodate changes of Program or method of working made at the Contractor's own discretion. Prices in the Activity Schedule shall not be altered when the Contractor makes such changes to the Activity Schedule.

⁹ In lump-sum contracts, add "and Activity Schedules" after "Programs."

Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work.

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42.7 Value Engineering: The Contractor may prepare, at its own cost, a value engineering proposal at any time during the performance of the contract. The value engineering proposal shall, at a minimum, include the following;

- (a) the proposed change(s), and a description of the difference to the existing contract requirements;
- (b) a full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle cost) the Employer may incur in implementing the value engineering proposal;
- (c) a description of any effect(s) of the change on performance/functionality; and
- (d) a description of the proposed work to be performed, a program for its execution and sufficient ES information to enable an evaluation of ES risks and impacts.

The Employer may accept the value engineering proposal if the proposal demonstrates benefits that:

- (a) accelerates the contract completion period; or
- (b) reduces the Contract Price or the life cycle costs to the Employer; or
- (c) improves the quality, efficiency, safety or sustainability of the Facilities; or
- (d) yields any other benefits to the Employer,

without compromising the functionality of the Works.

If the value engineering proposal is approved by the Employer and results in:

- (a) a reduction of the Contract Price; the amount to be paid to the Contractor shall be the **percentage specified in the PCC** of the reduction in the Contract Price; or
- (b) an increase in the Contract Price; but results in a reduction in life cycle costs due to any benefit described in (a) to (d) above, the amount to be paid to the

¹⁰ In lump-sum contracts, delete this paragraph.

Contractor shall be the full increase in the Contract Price.

**43. Cash Flow
Forecasts**

43.1 When the Program,¹¹ is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.

**44. Payment
Certificates**

44.1 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously.

44.2 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.

44.3 The value of work executed shall be determined by the Project Manager.

44.4 The value of work executed shall comprise the value of the quantities of work in the Bill of Quantities that have been completed.¹²

44.5 The value of work executed shall include the valuation of Variations and Compensation Events.

44.6 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

44.7 If the Contractor was, or is, failing to perform any ES obligations or work under the Contract, the value of this work or obligation, as determined by the Project Manager, may be withheld until the work or obligation has been performed, and/or the cost of rectification or replacement, as determined by the Project Manager, may be withheld until rectification or replacement has been completed. Failure to perform includes, but is not limited to the following:

- (a) failure to comply with any ES obligations or work described in the Works' Requirements which may include: working outside site boundaries, excessive dust, failure to keep public roads in a safe usable condition, damage to offsite vegetation, pollution of water courses from oils or sedimentation, contamination of land e.g. from oils, human waste, damage to archeology or cultural heritage features, air pollution as a result of

¹¹ In lump-sum contracts, add "or Activity Schedule" after "Program."

¹² In lump-sum contracts, replace this paragraph with the following: "The value of work executed shall comprise the value of completed activities in the Activity Schedule."

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- unauthorized and/or inefficient combustion;
 - (b) failure to regularly review C-ESMP and/or update it in a timely manner to address emerging ES issues, or anticipated risks or impacts;
 - (c) failure to implement the C-ESMP e.g. failure to provide required training or sensitization;
 - (d) failing to have appropriate consents/permits prior to undertaking Works or related activities;
 - (e) failure to submit ES report/s (as described in Appendix B), or failure to submit such reports in a timely manner;
 - (f) failure to implement remediation as instructed by the Project Manager within the specified timeframe (e.g. remediation addressing non-compliance/s).

45. Payments

- 45.1 Payments shall be adjusted for deductions for advance payments and retention. The Employer shall pay the Contractor the amounts certified by the Project Manager within 28 days of the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the currencies in which payments are made.
- 45.2 If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
- 45.3 Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions of currencies comprising the Contract Price.
- 45.4 Items of the Works for which no rate or price has been entered in shall not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

46. Compensation Events

- 46.1 The following shall be Compensation Events:
 - (a) The Employer does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 20.1.
 - (b) The Employer modifies the Schedule of Other

Contractors in a way that affects the work of the Contractor under the Contract.

- (c) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time.
- (d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects.
- (e) The Project Manager unreasonably does not approve a subcontract to be let.
- (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site.
- (g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.
- (h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
- (i) The advance payment is delayed.
- (j) The effects on the Contractor of any of the Employer's Risks.
- (k) The Project Manager unreasonably delays issuing a Certificate of Completion.

46.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

46.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The

Project Manager shall assume that the Contractor shall react competently and promptly to the event.

46.4 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Project Manager.

47. Tax

47.1 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 28 days before the submission of bids for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of GCC Clause 49.

48. Currencies

48.1 Where payments are made in currencies other than the currency of the Employer's country **specified in the PCC**, the exchange rates used for calculating the amounts to be paid shall be the exchange rates stated in the Contractor's Bid.

49. Price Adjustment

49.1 Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the PCC**. If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type specified below applies to each Contract currency:

$$P_c = A_c + B_c \text{ Imc/Ioc}$$

where:

P_c is the adjustment factor for the portion of the Contract Price payable in a specific currency "c."

A_c and B_c are coefficients¹³ **specified in the PCC**, representing the nonadjustable and adjustable portions, respectively, of the Contract Price payable in that specific currency "c;" and

Imc is the index prevailing at the end of the month being invoiced and Ioc is the index prevailing 28 days before Bid opening for inputs payable; both in the specific currency "c."

49.2 If the value of the index is changed after it has been used in a

¹³ The sum of the two coefficients A_c and B_c should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A, for the nonadjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other nonadjustable components. The sum of the adjustments for each currency are added to the Contract Price.

calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in costs.

50. Retention

- 50.1 The Employer shall retain from each payment due to the Contractor the proportion **stated in the PCC** until Completion of the whole of the Works.
- 50.2 Upon the issue of a Certificate of Completion of the Works by the Project Manager, in accordance with GCC Sub-Clause 57.1, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected. The Contractor may substitute retention money with an “on demand” Bank guarantee.

51. Liquidated Damages

- 51.1 The Contractor shall pay liquidated damages to the Employer at the rate per day **stated in the PCC** for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount **defined in the PCC**. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor’s liabilities.
- 51.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC Sub-Clause 45.1.

52. Bonus

- 52.1 The Contractor shall be paid a Bonus calculated at the rate per calendar day **stated in the PCC** for each day (less any days for which the Contractor is paid for acceleration) that the Completion is earlier than the Intended Completion Date. The Project Manager shall certify that the Works are complete, although they may not be due to be complete.

53. Advance Payment

- 53.1 The Employer shall make advance payment to the Contractor of the amounts **stated in the PCC** by the date **stated in the PCC**, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance

payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest shall not be charged on the advance payment.

53.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.

53.3 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

54. Securities

54.1 The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount **specified in the PCC**, by a bank or surety acceptable to the Employer, and denominated in the types and proportions of the currencies in which the Contract Price is payable. The Performance Security shall be valid until a date 28 days from the date of issue of the Certificate of Completion in the case of a Bank Guarantee, and until one year from the date of issue of the Certificate of Completion in the case of a Performance Bond.

55. Dayworks

55.1 If applicable, the Dayworks rates in the Contractor's Bid shall be used only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

55.2 All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the work being done.

55.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

56. Cost of Repairs

56.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the

Contractor's acts or omissions.

E. Finishing the Contract

- 57. Completion** 57.1 The Contractor shall request the Project Manager to issue a Certificate of Completion of the Works, and the Project Manager shall do so upon deciding that the whole of the Works is completed.
- 58. Taking Over** 58.1 The Employer shall take over the Site and the Works within seven days of the Project Manager's issuing a certificate of Completion.
- 59. Final Account** 59.1 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.
- 60. Operating and Maintenance Manuals** 60.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates **stated in the PCC**.
- 60.2 If the Contractor does not supply the Drawings and/or manuals by the dates **stated in the PCC** pursuant to GCC Sub-Clause 60.1, or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount **stated in the PCC** from payments due to the Contractor.
- 61. Termination** 61.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.
- 61.2 Fundamental breaches of Contract shall include, but shall not be limited to, the following:
- (a) the Contractor stops work for 28 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Project

Manager;

- (b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 28 days;
- (c) the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- (d) a payment certified by the Project Manager is not paid by the Employer to the Contractor within 84 days of the date of the Project Manager's certificate;
- (e) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;
- (f) the Contractor does not maintain a Security, which is required;
- (g) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as **defined in the PCC**; or
- (h) if the Contractor, in the judgment of the Employer has engaged in Fraud and Corruption, as defined in paragraph 2.2 a of the Appendix A to the GCC, in competing for or in executing the Contract, then the Employer may, after giving fourteen (14) days written notice to the Contractor, terminate the Contract and expel him from the Site.

61.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.

61.4 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

61.5 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under GCC Sub-Clause 61.2 above, the Project Manager shall decide whether the breach is fundamental or not.

62. Payment upon Termination

62.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials

ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as **specified in the PCC**. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

62.2 If the Contract is terminated for the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Project Manager shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

63. Property

63.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer if the Contract is terminated because of the Contractor's default.

64. Release from Performance

64.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

65. Suspension of Bank Loan or Credit

65.1 In the event that the Bank suspends the Loan or Credit to the Employer, from which part of the payments to the Contractor are being made:

- (a) The Employer is obligated to notify the Contractor of such suspension within 7 days of having received the Bank's suspension notice.
- (b) If the Contractor has not received sums due to it within the 28 days for payment provided for in GCC Sub-Clause 45.1, the Contractor may immediately issue a 14-day termination notice.

APPENDIX A TO GENERAL CONDITIONS

Fraud and Corruption *(Text in this Appendix shall not be modified)*

1. Purpose

1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

a. Defines, for the purposes of this provision, the terms set forth below as follows:

- i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
- iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- v. "obstructive practice" is:
 - (a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

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- (b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.
- b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- d. Pursuant to the Bank's Anti- Corruption Guidelines and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;¹⁴ (ii) to be a nominated¹⁵ sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;
- e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders(applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect¹⁶ all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

¹⁴ For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

¹⁵ A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

¹⁶ Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

APPENDIX B

Environmental and Social (ES) Metrics for Progress Reports

[Note to Employer: the following metrics may be amended to reflect the specifics of the Contract. The Employer shall ensure that the metrics provided are appropriate for the Works and impacts/key issues identified in the environmental and social assessment]

Metrics for regular reporting:

- a. environmental incidents or non-compliances with contract requirements, including contamination, pollution or damage to ground or water supplies;*
- b. health and safety incidents, accidents, injuries that require treatment and all fatalities;*
- c. interactions with regulators: identify agency, dates, subjects, outcomes (report the negative if none);*
- d. status of all permits and agreements:*
 - i. work permits: number required, number received, actions taken for those not received;*
 - ii. status of permits and consents:*
 - list areas/facilities with permits required (quarries, asphalt & batch plants), dates of application, dates issued (actions to follow up if not issued), dates submitted to resident engineer (or equivalent), status of area (waiting for permits, working, abandoned without reclamation, decommissioning plan being implemented, etc.);
 - list areas with landowner agreements required (borrow and spoil areas, camp sites), dates of agreements, dates submitted to resident engineer (or equivalent);
 - identify major activities undertaken in each area in the reporting period and highlights of environmental and social protection (land clearing, boundary marking, topsoil salvage, traffic management, decommissioning planning, decommissioning implementation);
 - for quarries: status of relocation and compensation (completed, or details of activities and current status in the reporting period).
- e. health and safety supervision:*
 - i. safety officer: number days worked, number of full inspections & partial inspections, reports to construction/project management;*
 - ii. number of workers, work hours, metric of PPE use (percentage of workers with full personal protection equipment (PPE), partial, etc.), worker violations observed (by type of violation, PPE or otherwise), warnings given, repeat warnings given, follow-up actions taken (if any);*
- f. worker accommodations:*
 - i. number of expats housed in accommodations, number of locals;*

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- ii. date of last inspection, and highlights of inspection including status of accommodations' compliance with national and local law and good practice, including sanitation, space, etc.;
 - iii. actions taken to recommend/require improved conditions, or to improve conditions.
 - g. *Health services: provider of health services, information and/or training, location of clinic, number of non-safety disease or illness treatments and diagnoses (no names to be provided);*
 - h. *gender (for expats and locals separately): number of female workers, percentage of workforce, gender issues raised and dealt with (cross-reference grievances or other sections as needed);*
 - i. *training:*
 - i. number of new workers, number receiving induction training, dates of induction training;
 - ii. number and dates of toolbox talks, number of workers receiving Occupational Health and Safety (OHS), environmental and social training;
 - iii. number and dates of communicable diseases (including STDs) sensitization and/or training, no. workers receiving training (in the reporting period and in the past); same questions for gender sensitization, flag person training.
 - iv. number and date of SEA and SH prevention sensitization and/or training events, including number of workers receiving training on Code of Conduct for Contractor's Personnel (in the reporting period and in the past), etc.
 - j. *environmental and social supervision:*
 - i. environmentalist: days worked, areas inspected and numbers of inspections of each (road section, work camp, accommodations, quarries, borrow areas, spoil areas, swamps, forest crossings, etc.), highlights of activities/findings (including violations of environmental and/or social best practices, actions taken), reports to environmental and/or social specialist/construction/site management;
 - ii. sociologist: days worked, number of partial and full site inspections (by area: road section, work camp, accommodations, quarries, borrow areas, spoil areas, clinic, HIV/AIDS center, community centers, etc.), highlights of activities (including violations of environmental and/or social requirements observed, actions taken), reports to environmental and/or social specialist/construction/site management; and
 - iii. community liaison person(s): days worked (hours community center open), number of people met, highlights of activities (issues raised, etc.), reports to environmental and/or social specialist /construction/site management.
 - k. *Grievances: list new grievances (e.g. number of allegations of SEA and SH) received in the reporting period and number of unresolved past grievances by date received, complainant's age and sex, how received, to whom referred to for action, resolution and date (if completed), data resolution reported to complainant, any required follow-up (Cross-reference other sections as needed):*

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- i. Worker grievances;
 - ii. Community grievances
 - l. *Traffic, road safety and vehicles/equipment:*
 - i. traffic and road safety incidents and accidents involving project vehicles & equipment: provide date, location, damage, cause, follow-up;
 - ii. traffic and road safety incidents and accidents involving non-project vehicles or property (also reported under immediate metrics): provide date, location, damage, cause, follow-up;
 - iii. overall condition of vehicles/equipment (subjective judgment by environmentalist); non-routine repairs and maintenance needed to improve safety and/or environmental performance (to control smoke, etc.).
 - m. *Environmental mitigations and issues (what has been done):*
 - i. dust: number of working bowzers, number of waterings/day, number of complaints, warnings given by environmentalist, actions taken to resolve; highlights of quarry dust control (covers, sprays, operational status); % of rock/ spoil lorries with covers, actions taken for uncovered vehicles;
 - ii. erosion control: controls implemented by location, status of water crossings, environmentalist inspections and results, actions taken to resolve issues, emergency repairs needed to control erosion/sedimentation;
 - iii. quarries, borrow areas, spoil areas, asphalt plants, batch plants: identify major activities undertaken in the reporting period at each, and highlights of environmental and social protection: land clearing, boundary marking, topsoil salvage, traffic management, decommissioning planning, decommissioning implementation;
 - iv. blasting: number of blasts (and locations), status of implementation of blasting plan (including notices, evacuations, etc.), incidents of off-site damage or complaints (cross-reference other sections as needed);
 - v. spill clean-ups, if any: material spilled, location, amount, actions taken, material disposal (report all spills that result in water or soil contamination);
 - vi. waste management: types and quantities generated and managed, including amount taken offsite (and by whom) or reused/recycled/disposed on-site;
 - vii. details of tree plantings and other mitigations required undertaken in the reporting period;
 - viii. details of water and swamp protection mitigations required undertaken in the reporting period.
 - n. *compliance:*
 - i. compliance status for conditions of all relevant consents/permits, for the Work, including quarries, etc.): statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance;

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- ii. compliance status of C-ESMP/ESIP requirements: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance
 - iii. compliance status of SEA and SH prevention and response action plan: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance
 - iv. compliance status of Health and Safety Management Plan re: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance

other unresolved issues from previous reporting periods related to environmental and social: continued violations, continued failure of equipment, continued lack of vehicle covers, spills not dealt with, continued compensation or blasting issues, etc. Cross-reference other sections as needed.

Section IX - Particular Conditions of Contract

A. General													
GCC 1.1 (d)	The financing institution is: The World Bank												
GCC 1.1 (r)	The Employer is: Project Director, Mizoram Health Systems Strengthening Project, Health & Family Welfare Department, MG Road, Tuikhuahtlang, Aizawl, Mizoram												
GCC 1.1 (v)	<p>The Intended Completion Date for the whole of the Works shall be 12 Months (for individual Lots).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Miles tone per Lot</th> <th style="text-align: center;">Description</th> <th style="text-align: center;">Period of Completion from the start date</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Value of work to be completed 25% of the contract amount</td> <td style="text-align: center;">3 months</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Value of work to be completed 60% of the contract amount</td> <td style="text-align: center;">7 months</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Completion of contract in all respects</td> <td style="text-align: center;">12 months</td> </tr> </tbody> </table>	Miles tone per Lot	Description	Period of Completion from the start date	1	Value of work to be completed 25% of the contract amount	3 months	2	Value of work to be completed 60% of the contract amount	7 months	3	Completion of contract in all respects	12 months
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GCC 1.1 (y)	The Project Manager is : <i>Will be notified to the Contractor by The Employer</i>												
GCC 1.1 (aa)	<p>The Site is located at:</p> <p>Lot 1: Aizawl, Mizoram, India</p> <p>Lot 2: Champhai, Mizoram, India</p> <p>Lot 3: Lawngtlai, Mizoram, India</p> <p>Lot 4: Lunglei, Mizoram, India</p> <p>Lot 5: Siaha, Mizoram, India</p>												
GCC 1.1 (ad)	The Start Date shall be one week after the date of issue of notice to proceed with works to the contractor.												
GCC 1.1 (ah)	The Works consist of .												

	<p>Lot 1: Repair and Renovation of Civil Hospital, Aizawl</p> <p>Lot 2: Repair and Renovation of District Hospital, Champhai</p> <p>Lot 3: Repair and Renovation of District Hospital, Lawngtlai</p> <p>Lot 4: Repair and Renovation of District Hospital, Lunglei</p> <p>Lot 5: Repair and Renovation of District Hospital, Siaha</p>																					
GCC 1.1 (aj)	<p>GCC 1.1 (aj) is replaced with the following:</p> <p>“Key Personnel are the Contractor’s personnel named in GCC 9.1 of the Particular Conditions of Contract.”</p>																					
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GCC 2.3(i)	<p>The following documents also form part of the Contract:</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Document</th> <th>Description of the document</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Construction Methodology</td> <td>Construction methodology given in bid amended as per comments of employer given in letter of acceptance.</td> </tr> <tr> <td>2.</td> <td>Quality control</td> <td>Quality control procedures and assurance plans given in the bid and amended as per comments of Employer given in letter of acceptance.</td> </tr> <tr> <td>3.</td> <td>Fraud and Corruption</td> <td>Appendix A – Fraud and Corruption</td> </tr> <tr> <td>4.</td> <td>Environmental and Social</td> <td>Appendix B - Environmental and Social (ES) Metrics for Progress Reports. (i) ES Management Strategies and Implementation Plans; and (ii) Code of Conduct (ES)</td> </tr> <tr> <td>5.</td> <td>Key Personnel</td> <td>Schedule of Key Personnel</td> </tr> <tr> <td>6.</td> <td>Equipment</td> <td>Schedule of key and critical equipment to be deployed on the work as per program construction</td> </tr> </tbody> </table>	S. No.	Document	Description of the document	1.	Construction Methodology	Construction methodology given in bid amended as per comments of employer given in letter of acceptance.	2.	Quality control	Quality control procedures and assurance plans given in the bid and amended as per comments of Employer given in letter of acceptance.	3.	Fraud and Corruption	Appendix A – Fraud and Corruption	4.	Environmental and Social	Appendix B - Environmental and Social (ES) Metrics for Progress Reports. (i) ES Management Strategies and Implementation Plans; and (ii) Code of Conduct (ES)	5.	Key Personnel	Schedule of Key Personnel	6.	Equipment	Schedule of key and critical equipment to be deployed on the work as per program construction
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GCC 3.1	<p>The following is inserted as a sub-clause at the end of GCC 3.1:</p> <p>“Salient features of major labour and other laws that are applicable to construction industry in India are given as Appendix 1 to these General Conditions of Contract.”</p>																					

	<p>The language of the contract is English.</p> <p>The law that applies to the Contract are the laws of Union of India.</p>
GCC 4.1	<p>The following is inserted as a sub-paragraph at the end of GCC 4.1:</p> <p>“However, if the Project Manager is required, under the rules and regulations and orders of the Employer, to obtain approval of some other authorities for specific actions, he will so obtain the approval. Provided further that any requisite approval shall be deemed to have been given by the Employer for any such authority exercised by the Project Manager.”</p>
GCC 5.1	<p>The Project manager may not delegate any of his duties and responsibilities.</p>
GCC 6.1	<p>The following is inserted at the end of GCC 6.1:</p> <p>“All oral instructions shall be confirmed in writing in seven working days.”</p>
GCC 7	<p>The first sentence of GCC 7. 1 is modified as:</p> <p>“The Contractor may subcontract with the approval of the Project Manager up to a ceiling specified in PCC, but may not assign the Contract without the approval of the Employer in writing.”</p> <p>The following sub-clauses are inserted at the end of GCC 7.1:</p> <p>“7.2 The Project Manager should satisfy himself before recommending to the Employer whether:</p> <ol style="list-style-type: none"> a) the circumstances warrant such sub-contracting; and, b) the sub-Contractor so proposed for the Work possesses the experience, qualifications and equipment necessary for the job proposed to be entrusted to him in proportion to the quantum of Works to be sub-contracted. <p>7.3 If payments are proposed to be made directly to that sub-contractor, this should be subject to specific authorization by the prime contractor so that his arrangement does not alter the contractor’s liability or obligations under the contract.</p> <p>7.4 The Contractor shall not be required to obtain any consent from the Employer for:</p> <ol style="list-style-type: none"> (a) the sub-contracting of any part of the Works for which the Sub-Contractor is already named in the contract; (b) the provision for labour, or labour component, and, (c) the purchase of materials which are in accordance with the

	<p>standards specified in the contract.</p> <p>(Note: 1. All bidders are expected to indicate clearly in the bid, if they proposed sub-contracting elements of the works amounting to more than 10 percent of the Bid Price. For each such proposal the qualification and the experience of the identified sub-contractor in the relevant field should be furnished along with the bid to enable the employer to satisfy himself about their qualifications before agreeing for such sub-contracting and include it in the contract. In view of the above, normally no additional sub-contracting should arise during execution of the contract.</p> <p>2. However, [a] sub-contracting for certain specialized elements of the work is not unusual and acceptable for carrying out the works more effectively; but vertical splitting of the works for sub-contracting is not acceptable. [b] In any case, proposal for sub-contracting in addition to what was specified in bid and stated in contract agreement will not be acceptable if the value of such additional sub-contracting exceeds 25% of value of work which was to be executed by Contractor without sub-contracting.</p> <p>3. Assignment of the contract may be acceptable only under exceptional circumstances such as insolvencies/liquidation or merger of companies etc.)”</p>
GCC 7.1	The ceiling for sub-contractor is 25%. Hiding information about any sub-contracting not authorized by the Employer shall be treated as violation of Appendix A to General Conditions (Fraud and Corruption).
GCC 8.1	Schedule of other contractors: Not Applicable
GCC 9	<p>The following is inserted as a sub-clause at the end of GCC 9.2:</p> <p>“In all the above cases, the contractor shall ensure that the person leaves the site within seven days and has no further connection with the work in the contract. The Contractor shall appoint a suitable replacement within 28 days or earlier as may be agreed to between the Project Manager and the Contractor.”</p> <p>The following sentence is deleted from first paragraph of GCC 9.4.1:</p> <p>“The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labor with appropriate qualifications and experience from sources within the Country.”</p> <p>GCC 9.4.3 and GCC 9.4.4 are deleted.</p> <p>The following sub-clauses are inserted at the end of GCC 9.4:</p> <p>“9.5 The Contractor shall not employ any retired Gazetted officer who has either not completed two years after the date of retirement or has not obtained permission from the Government authorities for employment with the Contractor¹⁷.</p> <p>9.6 During continuance of the Contract, the Contractor and his Sub-</p>

¹⁷Based on Government Directives.

	<p>Contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour laws (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law prevailing on the Base Date either by the State or the Central Government or the local authority. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contraventions including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, the Project Manager/ Employer shall have the right to deduct any money due to the Contractor including his amount of performance security and if applicable, the Environmental and Social (ES) Performance Security. The Employer/ Project Manager shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.</p> <p>9.7 The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.</p> <p>9.8 The Contractor shall duly comply with the provisions of the Apprentices Act 1961 (III of 1961) and the rules made there under, and comply, failure or neglect to shall be subject to all liabilities and penalties provided in the said Act and Rules.”</p>
<p>GCC 9.1</p>	<p>Key Personnel and equipment:</p> <p>GCC 9.1 is replaced with the following:</p> <p>9.1 Key Personnel are the Contractor’s personnel named in this GCC 9.1 of the Particular Conditions of Contract. The Contractor shall employ the Key Personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of Key Personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.</p> <p><i>[insert the name/s of each Key Personnel agreed by the Employer prior to Contract signature, Schedule of Key Personnel and equipment as indicated in accepted bid & construction methodology].</i></p>
<p>GCC 13.1</p>	<p>The minimum insurance amounts and deductibles shall be:</p>

	S.No.	Description	Minimum cover for Insurance	Maximum deductible for Insurance
	(i)	Works and Plant and Materials which are incorporated in works	For each Lot Initial Contract Value	5% of the contract value
	(ii)	Loss or damage to Equipment	For each Lot Total book value of the equipment brought to the site by the contractor	5% of book value
	(iii)	Other Property (except the Works, Plant, Materials, and Equipment)	For each Lot INR 50 Lakhs	5% of property value
	(iv)	Personal injury or death insurance: a) for other people;	As per workmen's compensation Act 1923 and other Acts in force	As per workmen's compensation Act 1923 and other Acts in force
		b) for Contractor's Employees	In accordance with the statutory requirements applicable in India	
GCC 14.1	Site Data are: will be provided by the appointed Project Manager			
GCC 15.1	GCC 15.1 is replaced with the following: "The Contractor shall construct and install the Works in accordance with the Specifications and Drawings and as per instructions of Project Manager."			
GCC 18 (add new 18.3.3)	The following is inserted as a new sub-clause 18.3.3: "18.3.3 During continuance of the contract, the contractor and his sub-contractors shall abide at all times by all existing enactments on environmental protection and rules made thereunder, regulations, notifications and by-laws of the State or Central Government, or local authorities and other law, bye-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority. Salient features of the			

	<p>major laws are given in Appendix 1 to the General Conditions of Contract.”</p> <p>The Project Manager/ Concerned Authority shall verify and approve the particular area for stacking of scrap arises out of demolition/ renovation activities identified by the second party for handing over of the scrap by the Contractor. The Concerned Authority shall provide valuation of scrap and conduct auction.</p> <p>Any scrap arise due to demolition/renovation activities at site, will be safely deposited at a place identified by the contractor which should be prior verified and approved by the Concerned Authority.</p> <p>Following key actions will be in C&D W management in the scope of Contractor:</p> <ol style="list-style-type: none"> i. Earmarking & Geotagging of location for disposal of C&D Waste, ii. 35-40% of the waste will be reused at site, iii. Approvals for Location (from Civic authority & State PCB as per C&D Waste rules 2016) to dump the C&D waste, in case iv. Collection of C&D waste (workers wearing Mask & gloves) v. Handling of C&D waste in a tarpaulin covered vehicle. vi. At site periodic water sprinkling where demolition activity is in progress. vii. Preferably disposal of C&D Waste will be (from site) after SUNSET.
GCC 20.1	<p>The Site Possession Date(s) shall be: two calendar weeks from the date of issue of notice to proceed with the work.</p> <ol style="list-style-type: none"> 1: Repair and Renovation of Civil Hospital, Aizawl 2: Repair and Renovation of District Hospital, Champhai 3: Repair and Renovation of District Hospital, Lawngtlai 4: Repair and Renovation of Civil Hospital, Lunglei 5: Repair and Renovation of District Hospital, Siaha
GCC 23	<p>The following is inserted as a new sub-clause 23.1.1:</p> <p>“23.1.1 The Adjudicator should be in position before “notice to proceed with work” is issued to the Contractor and an agreement should be signed with the Adjudicator jointly by the Employer and the Contractor in the form attached – Appendix 3.”</p>
GCC 23.1 & GCC 23.2	<p>Name of the agreed Adjudicator <i>(insert name before signing contract).</i></p>

	<p>Appointing Authority for the Adjudicator: <i>[insert name of Authority]</i>.</p> <p><i>[Note: if ITB 49 provides for an Adjudicator from list provided by an Institution, insert the name of the same institution as the appointing authority]</i></p>
GCC 24	<p>In the first sentence in GCC 24.3, the words “The Adjudicator shall be paid by the hour at the rate” are replaced by the words “The Adjudicator shall be paid daily at the rate”</p>
GCC 24.3	<p>Daily rate and types of reimbursable expenses to be paid to the Adjudicator: <i>[insert daily fees - not less than Rs. 10,000 per day, and reimbursable expenses – boarding/ lodging/ travel etc.]</i>.</p> <p><i>[Note: if ITB 49 provides for provision of an Adjudicator from list provided by an institution, kindly state that ‘the daily fee and reimbursable expenses payable to the Adjudicator will be governed by rules of [name of the Institution].</i></p>
GCC 24.4	<p>The procedure for adhoc arbitration will be as follows:</p> <p>(a) In case of Dispute or difference arising between the Employer and a Contractor relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of 3 Arbitrators one each to be appointed by the Employer and the Contractor. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding Arbitrator. In case of failure of the two Arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the Arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the* Indian Council of Arbitration.</p> <p>(b) If one of the parties fails to appoint its Arbitrator in pursuance of sub-clause (a) above within 30 days after receipt of the notice of the appointment of its Arbitrator by the other party, then the *Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Disputes Resolution (India), both in cases of Foreign Contractor as well as Indian Contractor, shall appoint the Arbitrator. A certified copy of the order of the* Indian Council of Arbitration, making such an appointment shall be furnished to each of the parties.</p> <p>(c) Arbitration may be commenced prior to or after completion of the Works, provided that the obligations of the Employer, the Project Manager, the Contractor and the Adjudicator shall not be altered by reason of the arbitration being conducted during the progress of the</p>

	<p>Works.</p> <p>(d) Arbitration proceedings shall be held at Aizawl, Mizoram, India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.</p> <p>(e) The decision of the majority of Arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation, etc. of its proceedings as also the fees and expenses paid to the Arbitrator appointed by such party or on its behalf shall be borne by each party itself.</p> <p>(f) Where the value of the contract is Rs. 50 million and below, the disputes or differences arising shall be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by agreement between the parties; failing such agreement, by the appointing authority, namely the * Indian Council of Arbitration.</p> <p>(g) The Arbitrator should give final award within 180 days of starting of the proceedings.</p> <p>(h) Performance under the contract shall continue during the arbitration proceedings and payments due to the contractor by the Employer shall not be withheld, unless they are the subject matter of the arbitration proceedings.</p> <p>"Any dispute or difference whatsoever arising between the parties out of or relating to the construction, meaning, scope, operation or effect of this contract or the validity or the breach thereof shall be settled by arbitration in accordance with the Rules of Domestic Commercial Arbitration of the Indian Council of Arbitration and the award made in pursuance thereof shall be binding on the parties.</p> <p>The arbitral tribunal shall consist of 3 Arbitrators, arbitration proceedings shall be held at Aizawl, Mizoram, India, India and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English". <i>[ICA rules provide for arbitration tribunal of 3 arbitrators if the value of claim is over Rs. 1 crore unless the parties have agreed otherwise for a sole arbitrator].</i></p>
B. Time Control	
GCC 30.1	The Contractor shall submit for approval a Program for the Works within

	<p>14 days of delivery of the Letter of Acceptance.</p> <p>Any revision in Program should only be agreed in writing.</p> <p><i>[This program should be in adequate detail and generally conform to the program submitted along with bid. Deviations, if any from that should be clearly explained and should be satisfactory to the Project Manager]</i></p>
GCC 30.3	<p>The period between Program updates is 45 days.</p> <p>The amount to be withheld for late submission of an updated Program is: Rs. 500,000.</p> <p>The period for submission of progress reports is 30 days.</p>
GCC 31	<p>GCC 31.1 is replaced with the following:</p> <p>“31.1 The Project Manager shall extend the Intended Completion Date including milestones if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date as per the agreed milestones without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.”</p> <p>In GCC 31.2, replace the words “Intended Completion Date” at the first occurrence by the words “Intended Completion Date/ Milestones”; and at the second occurrence by the words “Intended Completion Date/ Milestone”.</p>
GCC 34	<p>GCC 34.1 is replaced with the following:</p> <p>“Either the Project Manager or the Contractor may require the other to attend a management meeting (which will be held at the place indicated in PCC. The periodicity shall be fixed by Project Manager/ Contractor jointly). The business of a management meeting shall be to review the progress of construction with reference to the construction program given in accordance with GCC 30.1, the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.”</p>
GCC 34.1	<p>Venue of management meeting will be Office of the Project Director, Mizoram Health Systems Strengthening Project, Health & Family Welfare Department, MG Road, Tuikhuahtlang, Aizawl, Mizoram.</p> <p>The management meetings shall be held at intervals of 30 days.</p>
C. Quality Control	
GCC 36	<p>The following sub-clause is inserted at the end of GCC 36.1:</p> <p>“36.2 The contractor shall permit the Employer’s Technical auditor to check</p>

	<p>the contractor’s work and notify the Project Manager and Contractor of any defects that are found. Such a check shall not affect the Contractor’s or the Project Manager’s responsibility as defined in the Contract Agreement.”</p>
GCC 37	<p>The following sub-clauses are inserted before GCC 37.1, and GCC 37.1 is re-numbered as GCC 37.3:</p> <p>“GCC 37.1 The Contractor shall institute Quality Assurance (QA) and Quality Control (QC) systems in accordance with Quality Assurance Plan to demonstrate compliance with the requirements of the Contract as approved by the Project Manager. Compliance with the QA/QC systems shall not relieve the Contractor of any of his duties obligations or responsibilities under the Contract.</p> <p>GCC 37.2 The Contractor shall provide all apparatus, assistance, documents and other information, electricity, equipment, fuel, consumables, instruments, labour, materials, and suitably qualified and experienced staff, as are necessary to carry out the specified tests efficiently.”</p>
GCC 38.1	<p>The Defects Liability Period is: 365 days.</p>
GCC 39.1	<p>The following notes are added at the end of GCC 39.1:</p> <p><i>“Note: 1. Where in certain cases, the technical specifications provide for acceptance of works within specified tolerance limits at reduced rates, Project Manager will certify payments to Contractor accordingly.</i></p> <p><i>2. Where the failure to correct a particular defect within the specified time is considered as a fundamental breach of contract a notice should be given to the contractor as stated in GCC 61.2(e).”</i></p>
<p>D. Cost Control</p>	
GCC 41	<p>GCC 41.1 is replaced with the following, and existing GCC 41.2 is re-numbered as GCC 41.3:</p> <p>“41.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change.</p> <p>(a) If the quantity of work executed exceeds the quantity of the item in BOQ beyond the higher specified limit the Project Manager shall fix the rate to be applied for the additional quantity of the work executed.</p> <p>(b) If the quantity of work executed is less than the quantity of the item</p>

	<p>in BOQ and is lesser than the lower specified limit, the Project Manager shall fix the rate to be applied for whole of the quantity of the work so executed</p> <p>41.2 The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Employer.”</p>
GCC 42	<p>In GCC 42.2, the first sentence is modified as follows:</p> <p>“The Contractor shall provide the Project Manager with a quotation (with breakdown of unit rates) for carrying out the Variation when requested to do so by the Project Manager. The Contractor shall also provide a description of the varied work performed or to be performed, including details of the resources and methods adopted or to be adopted by the Contractor.”</p> <p>In the first sentence in GCC 42.3, after the words ‘If the Contractor’s quotation is unreasonable’, the following is added:</p> <p><i>“[or if contractor fails to provide the Project Manager with a quotation within a reasonable time specified by Project Manager in accordance with GCC 42.2]”</i></p>
GCC 42.7	Provisions related to Value Engineering do not apply.
GCC 43.1	<p>The second sentence in GCC 43.1 is replaced with the following:</p> <p>“The cash flow forecast shall be in Indian Rupees.”</p>
GCC 44	<p>At the end of GCC 44.1 after the word ‘previously’, the following words are added:</p> <p>“alongwith details of measurement of the quantity of works executed in a tabular form approved by the Project Manager”</p> <p>At the end of GCC 44.2 after the words ‘the Contractor’, the following words are added:</p> <p>“after taking into account any credit or debit for the month in question in respect of materials for the works in the relevant amount and under conditions set forth in GCC Sub-Clause 53.1 (Secured Advance)”</p>
GCC 45	<p>GCC 45.1 is replaced with the following:</p> <p>“Payments shall be adjusted for deductions for advance payments, retention, other recoveries in terms of contract & taxes to be deducted at source [TDS] as per applicable law. The Employer shall pay the Contractor the amounts certified by the Project Manager within 28 days of the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be</p>

	<p>calculated from the date by which the payment should have been made up to the date when the late payment is made at the rate stated in the PCC.”</p> <p>A new sub-clause 45.5 is added after sub-clause 45.4:</p> <p>“45.5 The Contractor shall open an Escrow Account with his bank for the purpose of receiving all the payments as well as incurring expenditure under this Contract. The Account shall be open to verification and audit at any time by the Employer or designee of the Employer. This account will be controlled solely by the Contractor’s Project Officers (Project Manager and/or Finance Manager or equivalent designate). No other Contractor employees or associates will have access to the Project Account or the funds therein. The Contractor shall report monthly on the status of this account including actual bank account statements. The Contractor shall provide all Account statements as requested by the Employer.”</p>
GCC 45.1	Interest rate for Delayed payment is 8% per annum
GCC 45.3	All payments (and deductions) shall be paid or charged in Indian Rupees.
GCC 45.5	Not Applicable
GCC 47	<p>The following sub-clause is inserted before GCC 47.1, and GCC 47.1 is re-numbered as GCC 47.2:</p> <p>“47.1 The rates quoted by the Contractor shall be deemed to be inclusive of the VAT, Sales and other taxes that the Contractor will have to pay for the performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at source [TDS] as per applicable law.”</p> <p>In first line of the re-numbered GCC 47.2, replace the words ‘the date 28 days before’ with the words ‘the deadline for’.</p>
GCC 48	All payments shall be made in Indian Rupees.
GCC 49	Price Adjustment: Deleted
GCC 50.1	The proportion of payments retained (Retention Money) shall be 6% from each bill subject to the maximum of 5% of final contract price.
GCC 50.2	<p>The last line of GCC 50.2 is replaced with the following:</p> <p>“On completion of the whole works the Contractor may substitute the balance retention money with an “on demand” Bank guarantee.”</p>
GCC 51	In the first sentence of GCC 51.1, the following words are inserted after the words ‘Intended Completion Date’:

	<p>“(for the whole of the works or the milestones as stated in the PCC)”</p> <p>The following is inserted as a sub-paragraph at the end of GCC 51.1:</p> <p>“Time is the essence of the contract and payment or deduction of liquidated damages shall not relieve the contractor from his obligation to complete the work as per agreed construction program and milestones, or from any of the Contractor’s other obligations and liabilities under the contract.”</p> <p>In the first sentence in GCC 51.2 the following words are inserted after the words ‘Intended Completion Date’:</p> <p>“including milestones”</p>												
GCC 51.1	<p>The liquidated damages for each lot of work are 0.05% per day. The maximum amount of liquidated damages for the whole of the Works is 10% of the final Contract Price.</p> <table border="1"> <thead> <tr> <th>Milestone per Lot</th> <th>Description</th> <th>Period of Completion from the start date</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Value of work to be completed 25% of the contract amount</td> <td>3 months</td> </tr> <tr> <td>2</td> <td>Value of work to be completed 60% of the contract amount</td> <td>7 months</td> </tr> <tr> <td>3</td> <td>Completion of contract in all respects</td> <td>12 months</td> </tr> </tbody> </table>	Milestone per Lot	Description	Period of Completion from the start date	1	Value of work to be completed 25% of the contract amount	3 months	2	Value of work to be completed 60% of the contract amount	7 months	3	Completion of contract in all respects	12 months
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GCC 52.1	Not Applicable												
GCC 53	<p>The following is inserted as a new sub-clause 53.4:</p> <p>“The Project Manager shall make advance payment in respect of materials intended for but not yet incorporated in the Works in accordance with conditions stipulated in the PCC.”</p>												
GCC 53.1	<p>Advance Payments shall be made in Indian Rupees only. The amount of the Advance Payments are:</p> <table border="1"> <thead> <tr> <th><u>Nature of Advance</u></th> <th><u>Amount (Rs.)</u></th> <th><u>Conditions to be fulfilled</u></th> </tr> </thead> <tbody> <tr> <td>1. Mobilization¹⁸</td> <td>5% of the Contract price</td> <td>On submission of unconditional Bank Guarantee. <i>(to be drawn before end of</i></td> </tr> </tbody> </table>	<u>Nature of Advance</u>	<u>Amount (Rs.)</u>	<u>Conditions to be fulfilled</u>	1. Mobilization ¹⁸	5% of the Contract price	On submission of unconditional Bank Guarantee. <i>(to be drawn before end of</i>						
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¹⁸ The amount of mobilization advance could be increased or decreased based on nature of the work. Also, the advance could be released in single or multiple instalments.

	<p style="text-align: right;"><i>20% of Contract period)</i></p> <p>2. Equipment 90% for new and 50% of depreciated value for old equipment. Total amount will be subject to a maximum of 10% of the Contract price.</p> <p><i>(This advance is not applicable for equipment already owned or hired/leased by the contractor.)</i></p> <p>After equipment is brought to site as per agreed construction program (<i>provided the Project Manager is satisfied that the equipment is required for performance of the contract</i>) and on submission of unconditional Bank Guarantee for amount of advance.</p> <p>(The advance payment will be paid to the Contractor no later than 15 days after fulfilment of the above conditions).</p> <p>Repayment of advance payment for mobilization and equipment:</p> <p>The advance shall be repaid with percentage deductions from the interim payments certified by the Project Manager under the Contract. Deductions shall commence in the next Interim Payment Certificate following that in which the total of all such payments to the contractor has reached not less than 15 percent of the Contract Price or 3 (three) months from the date of payment of first instalment of advance, whichever period concludes earlier, and shall be made at the rate of 30 percent of the amounts of all Interim Payment Certificates until such time as the advance has been repaid, always provided that the advance shall be completely repaid prior to the expiry of the original time for completion.</p> <p>Repayment of secured advance:</p> <p>The advance shall be repaid from each succeeding monthly payments to the extent materials [<i>for which advance was previously paid pursuant to Clause 53 of GCC and 53.1(3) of PCC.</i>] have been incorporated into the Works.</p>
<p>GCC 54</p>	<p>GCC 54.1 is replaced with the following:</p> <p>“The Performance Security and an Environmental and Social (ES) Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in the amounts specified in the PCC, and shall be issued by a Nationalized or Scheduled bank in India. The Performance Security including additional security for unbalanced bids, and the ES Performance Security, shall be valid until a date 28 days from the date of issue of the Certificate of Completion.”</p>

GCC 54.1	<p>The Performance Security amount is 5 percent of the Accepted Contract Amount plus Rs. 5 percent as additional security for unbalanced bids [<i>in terms of ITB Clause 38.2</i>], and Environmental and Social (ES) Performance Security amount is 1 percent of the Accepted Contract Amount.</p> <p>The standard forms of Performance Security and if applicable ES Security acceptable to the Employer shall be <u>unconditional</u> Bank Guarantees from Scheduled or Nationalized banks in India of the types as presented in Section X of the Bidding Document.</p> <p><i>[Notes: The Bank Guarantees shall be unconditional (on demand) (see Section X, Contract Forms).</i></p> <p>Throughout this bidding document the term 'performance security', unless the context clearly indicates otherwise, means and includes both 'the performance security and the ES performance security' to be submitted by the successful bidder in the amounts specified above.</p>
E. Finishing the Contract	
GCC 59.1	<p>The following is added after the words 'issue a payment certificate' at the end of GCC 59.1:</p> <p>“within 56 days of receiving the contractor’s revised account”</p>
GCC 60.1	<p>The date by which operating and maintenance manuals are required is within 28 days of issue of certificate of completion of whole or section of work, as the case may be.</p> <p>The date by which “as built” drawings (in suitable scale) including a compact disc containing digitized drawings in 2 sets are required, is within 28 days of issue of certificate of completion of whole or section of the work, as the case may be.</p>
GCC 60.2	<p>The amount to be withheld for failing to produce “as built” drawings and/or operating and maintenance manuals by the date required in GCC 60.1 is 1% of the bid value.</p>
GCC 61	<p>The following sub-clauses are added after GCC 61.2 (h):</p> <p>“(i) The contractor has contravened Clauses 7 and 9 of GCC.</p> <p>(j) The contractor does not adhere to the agreed construction program, agreed ES-MSIP [Clause 30 of GCC], and also fails to take satisfactory remedial action as per agreements reached in the management meetings [Clause 30 of GCC] for a period of 60 days.</p> <p>(k) The contractor fails to carry out the instructions of the Project Manager within a reasonable time determined by the Project Manager</p>

	<p>in accordance with GCC Clause 15.1 and 22.</p> <p>(l) The contractor (in case of Joint Venture) has modified the composition of the joint venture and/or the responsibility of each member of the joint venture from what is stated in joint venture agreement without the prior approval of the Employer.”</p>
GCC 61.2 (g)	The maximum number of days is: 200 days
GCC 61.2 (l)	Hiding any information regarding changes in roles and responsibilities of JV members, which is not authorized by the Employer, shall also be treated as violation of Appendix A to General Conditions (Fraud and Corruption).
GCC 62	<p>The following is added after the words ‘issue of the certificate’ in the first sentence of GCC 62.1;</p> <p>“less other recoveries due in terms of contract, less taxes to be deducted at source [TDS] as per applicable law,”</p> <p>The following is added after the words ‘date of the certificate’ at the end of GCC 62.2:</p> <p>“less other recoveries due in terms of contract, less taxes to be deducted at source [TDS] as per applicable law”</p>
GCC 62.1	The percentage to apply to the value of the work not completed, representing the Employer’s additional cost for completing the Works, is 20%.

Appendices

Appendix 1

Salient Features of Labour & Environment Protection Laws¹⁹

SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK

- (a) Employees Compensation Act 1923: The Act provides for compensation in case of injury, disease or death arising out of and during the course of employment.
- (b) Payment of Gratuity Act 1972: gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years' service or more or on death at the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.
- (c) Employees P.F. and Miscellaneous Provision Act 1952 (since amended): The Act provides for monthly contribution by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are:
 - (i) Pension or family pension on retirement or death, as the case may be.
 - (ii) Deposit linked insurance on the death in harness of the worker.
 - (iii) Payment of P.F. accumulation on retirement/death etc.
- (d) Maternity Benefit Act 1961: The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
- (e) Sexual Harassment of Women at the Workplace (Prevention, Prohibition and Redressal) Act, 2013: This Act defines sexual harassment in the workplace, provides for an enquiry procedure in case of complaints and mandates the setting up of an Internal Complaints Committee or a Local Complaints Committee
- (f) Contract Labour (Regulation & Abolition) Act 1970: The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labour.
- (g) Minimum Wages Act 1948: The Employer is supposed to pay not less than the

¹⁹ This list is only illustrative and not exhaustive. Bidders and Contractors are responsible for checking the correctness and completeness of the list. The law as current on the date of bid opening will apply.

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- Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employments.
- (h) Payment of Wages Act 1936: It lays down the mode, manner and by what date the wages are to be paid, what deductions can be made from the wages of the workers.
 - (i) Equal Remuneration Act 1976: The Act provides for payment of equal wages for work of equal nature to male and female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.
 - (j) Payment of Bonus Act 1965: The Act is applicable to all establishments employing 20 or more employees. Some of the State Governments have reduced this requirement from 20 to 10. The Act provides for payments of annual bonus subject to a minimum of 8.33% of the wages drawn in the relevant year. It applies to skilled or unskilled manual, supervisory, managerial, administrative, technical or clerical work for hire or reward to employees who draw a salary of Rs. 10,000/- per month or less. To be eligible for bonus, the employee should have worked in the establishment for not less than 30 working days in the relevant year. The Act does not apply to certain establishments.
 - (k) Industrial Disputes Act 1947: the Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations, a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
 - (l) Trade Unions Act 1926: The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.
 - (m) Child Labour (Prohibition & Regulation) Act 1986: The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in the Building and Construction Industry.
 - (n) Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979: The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home up to the establishment and back, etc.

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- (o) The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Building and Other Construction Workers Welfare Cess Act, 1996 (BOCWW Cess Act): All the establishments who carry on any building or other construction work and employ 10 or more workers are covered under these Acts. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be notified by the Government. The Employer of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as Canteens, First – Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.
- (p) Factories Act 1948: the Act lays down the procedure for approval of plans before setting up a factory engaged in manufacturing processes, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power.
- (q) Weekly Holidays Act -1942
- (r) Bonded Labour System (Abolition) Act, 1976: The Act provides for the abolition of bonded labour system with a view to preventing the economic and physical exploitation of weaker sections of society. Bonded labour covers all forms of forced labour, including that arising out of a loan, debt or advance.
- (s) Employer's Liability Act, 1938: This Act protects workmen who bring suits for damages against employers in case of injuries endured in the course of employment. Such injuries could be on account of negligence on the part of the employer or persons employed by them in maintenance of all machinery, equipment etc. in healthy and sound condition.
- (t) Employees State Insurance Act 1948: The Act provides for certain benefits to insured employees and their families in case of sickness, maternity and disablement arising out of an employment injury. The Act applies to all employees in factories (as defined) or establishments which may be so notified by the appropriate Government. The Act provides for the setting up of an Employees' State Insurance Fund, which is to be administered by the Employees State Insurance Corporation. Contributions to the Fund are paid by the employer and the employee at rates as prescribed by the Central Government. The Act also provides for benefits to dependents of insured persons in case of death as a result of an employment injury.
- (u) The Personal Injuries (Compensation Insurance) Act, 1963: This Act provides for the employer's liability and responsibility to pay compensation to employees

where workmen sustain personal injuries in the course of employment.

- (v) Industrial Employment (Standing Order) Act 1946: It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.

SALIENT FEATURES OF SOME OF THE MAJOR LAWS THAT ARE APPLICABLE FOR PROTECTION OF ENVIRONMENT.

1. The Environment (Protection) Act, 1986 and as amended: This provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.
2. The Forest Conservation Act, 1980, as amended, and Forest (Conservation) Rules, 1981 as amended: These provides for protection of forests by restricting conversion of forested areas into non- forested areas and prevention of deforestation, and stipulates the procedures for cutting any trees that might be required by the applicable rules. Permissions under the Act also stipulates the norms and compliance requirements of the employer and any contractor on behalf of the employer.
3. State Tree Preservation Acts as may be in force: These provide for protection of trees of important species. Contractors will be required to obtain prior permission for full or partial cutting, uprooting, or pruning of any such trees.
4. The Wildlife (Protection) Act, 1972, and as amended: This provides for protection of wildlife through notifying National Parks and Sanctuaries and buffer areas around these zones; and to protect individuals of nationally important species listed in the Annex of the Act.
5. The Biological Diversity Act, 2002: This provides for conservation of biological diversity, sustainable use of components of biological diversity, and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected therewith or incidental thereto.
6. The Public Liability Insurance Act, 1991 as amended and The Public Liability Insurance Rules, 1991 as amended: These provide for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for mattes connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.
7. The Ancient Monuments and Archaeological Sites and Remains Act, 1958 and the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010, the Ancient Monuments and Archaeological Sites and Remains Rules, 1959 amended 2011, the National Monuments Authority Rules, 2011 and the similar State Acts: These provide for conservation of cultural and historical remains found in India. Accordingly, area within the radii of 100m and 300m from the "protected property" are designated as "protected area" and "controlled area" respectively. No development activity (including building, mining,

excavating, blasting) is permitted in the “protected area” and development activities likely to damage the protected property is not permitted in the “controlled area” without prior permission of the Archaeological Survey of India (ASI) or the State Departments of Art and Culture or Archaeology as applicable.

8. The Environmental Impact Assessment Notification, 2006 and as amended: This provides for prior environmental clearance for new, modernization and expansion projects listed in Schedule 1 of the Notification. Contractors will be required to ensure that no work starts until applicable clearances under the Notification is not available. Contractors will be responsible for implementation of any environmental management plan stipulated as per the permission under this Notification; and will be required to prepare and submit to the employer and compliance report stipulated in the permission under the Notification.
9. The Water (Prevention and Control of Pollution) Act, 1974 as amended, and the Water (Prevention and Control of Pollution) Rules, 1975 as amended: These provide for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. ‘Pollution’ means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms. Contractors will need to obtain consent for establishment and consent for operation of any item of work or installation of equipment that generates waste water, and observe the required standards of establishment and operation of these items of work or installations; as well as install and operate all required waste water treatment facilities.
10. The Water (Prevention and Control of Pollution) Cess Act, 1977 and The Water (Prevention and Control of Pollution) Cess Rules, 1978: These provide for the levy and collection of a cess on water consumed by persons carrying on certain industries and by local authorities, with a view to augment the resources of the Central Board and the State Boards for the prevention and control of water pollution under the Water (Prevention and Control of Pollution) Act, 1974.
11. The Air (Prevention and Control of Pollution) Act, 1981 as amended, and the Air (Prevention and Control of Pollution) Rules, 1982: These provides for prevention, control and abatement of air pollution. ‘Air Pollution’ means the presence in the atmosphere of any ‘air pollutant’, which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment. Contractors will need to obtain consent for establishment and consent for operation of any item of work or installation of equipment that generates air pollution such as batching plants, hot mix plants, power generators, backup power generation, material handling processes, and observe the required standards of establishment and operation of these items of work or installations.
12. Noise Pollution (Control and Regulation) Rules, 2000, and as amended: This provides for

standards for noise for day and night for various land uses and specifies special standards in and around sensitive receptors of noise such as schools and hospitals. Contractors will need to ensure compliance to the applicable standards, and install and operate all required noise control devices as may be required for all plants and work processes.

13. Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996: This provides for Requirement of preparation of on-site and off-site Disaster Management Plans for accident-prone areas.
14. The Explosives Act 1884 and the Explosives Rules, 2008: These provide for safe manufacture, possession, sale, use, transportation and import of explosive materials such as diesel, Oil and lubricants etc.; and also for regulating the use of any explosives used in blasting and/or demolition. All applicable provisions will need compliance by the contractors.
15. The Petroleum Rules, 2002: This provides for safe use and storage of petroleum products, and will need to be complied by the contractors.
16. The Gas Cylinder Rules 2004 and amendments: This provides for regulations related to storage of gas, and possession of gas cylinder more than the exempted quantity. Contractors should comply with all the requirements of this Rule.
17. Manufacture, Storage and Import of Hazardous Chemical Rules of 1989 and as amended: These provide for use and storage of hazardous material such as highly inflammable liquids like HSD/LPG. Contractors will need to ensure compliance to the Rules; and in the event where the storage quantity exceeds the regulated threshold limit, the contractors will be responsible for regular safety audits and other reporting requirements as prescribed in the Rules.
18. Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016: These provide for protection of general public from improper handling storage and disposal of hazardous waste. The rules prescribe the management requirement of hazardous wastes from its generation to final disposal. Contractors will need to obtain permission from the State Pollution Control Boards and other designated authorities for storage and handling of any hazardous material; and will to ensure full compliance to these rules and any conditions imposed in the permit.
19. The Bio Medical Waste Management Rules, 2016: This provides for control, storage, transportation and disposal of bio-medical wastes. As and where the contractor has any first aid facility and dispensaries, established in either temporary or permanent manner, compliance to these Rules are mandatory.
20. Construction and Demolition Waste Management Rules, 2016: This provides for management of construction and demolition waste (such as building materials possible to be reused, rubble and debris or the like); and applies to all those waste resulting from construction, re-modelling, repair or demolition of any civil structure. Contractor will need to prepare a waste disposal plan and obtain required approval from local authorities, if waste

generation is more than 20 tons in any day or 300 tons in any month during the contract period; and ensure full compliance to these rules and any conditions imposed in the regulatory approval.

21. The E-Waste (Management) Rules, 2016: This provides for management of E-wastes (but not covering lead acid batteries and radio-active wastes) aiming to enable the recovery and/or reuse of useful material from e-waste, thereby reducing the hazardous wastes destined for disposal and to ensure the environmentally sound management of all types of waste of electrical and electronic equipment. This Rule applies to every manufacturer, producer, consumer, bulk consumer, collection centers, dealers, e-retailer, refurbisher, dismantler and recycler involved in manufacture, sale, transfer, purchase, collection, storage and processing of e-waste or electrical and electronic equipment listed in Schedule I, including their components, consumables, parts and spares which make the product operational.
22. Plastic waste Management Rules, 2016: This provides for control and management of the plastic waste generated from any activity. Contractors will ensure compliance to this Rule.
23. The Batteries (Management and Handling) Rules 2001: This provides for ensuring safe disposal and recycling of discarded lead acid batteries likely to be used in any equipment during construction and operation stage. Rules require proper control and record keeping on the sale or import of lead acid batteries and recollection of the used batteries by registered recyclers to ensure environmentally sound recycling of used batteries. Contractors will ensure compliance to this Rule.
24. The Ozone Depleting Substances (Regulation and Control) Rules, 2000 and as amended: This provides for regulation of production and consumption of ozone depleting substances in the country, and specifically prohibits export to or import from countries not specified in the Rules, and prohibits unless specifically permitted, any use of ozone depleting substance.
25. The Coastal Regulation Zone Notifications, 1991 and as amended: This provides for regulation of development activities within the 500m of high tide line in coastal zone and 100m of stretches of rivers and estuaries influenced by tides. Contractors will be required to ensure that no work starts until applicable clearances under the Notification is not available. Contractors will be responsible for implementation of any plan stipulated as per the permission under this Notification; and will be required to prepare and submit to the employer and compliance report stipulated in the permission under the Notification.
26. The Motor Vehicle Act 1988 as amended (and State Motor Vehicle Acts as may be in force) and the Motor Vehicle Rules, 1989, and as amended (and State Motor Vehicle Rules as may be in force): To minimize the road accidents, penalizing the guilty, provision of compensation to victim and family and check vehicular air and noise pollution. Contractors will be required to ensure full compliance to these rules.
27. Easement Act, 1882: This provides for the rights of landowners on groundwater. Contractors will need to ensure that other landowners' rights under the Act is not affected by any groundwater abstraction by the contractors.

-
28. State Groundwater Acts and Rules as may be in force and the Guidelines for Groundwater Abstraction for drinking and domestic purposes in Notified Areas and Industry/Infrastructure project proposals in Non-Notified areas, 2012: These provide for regulating extraction of ground water for construction/industrial and drinking and domestic purposes. Contractors will need to obtain permission from Central/State Groundwater Boards prior to groundwater abstraction through digging any bore well or through any other means; and will to ensure full compliance to these rules and any conditions imposed in the permit.
 29. The Mines Act, 1952 as amended; the Minor Mineral and concession Rules as amended; and the State Mineral (Rights and Taxation) Acts as may be in force: These provide for for safe and sound mining activity. The contractors will procure aggregates and other building materials from quarries and borrow areas approved under such Acts. In the event the contractors open any new quarry and/or borrow areas, appropriate prior permission from the State Departments of Minerals and Geology will need to be obtained. Contractors will also need to ensure full compliance to these rules and any conditions imposed in the permit.
 30. The Insecticides Act, 1968 and Insecticides Rules, 1971 and as amended: These provide for regulates the manufacture, sale, transport, distribution, export, import and use of pesticides to prevent risk to human beings or animals, and for matters connected therewith. No one should import or manufacture; sell, stock or exhibit foe sale; distribute, transport, use: (i) any misbranded insecticides, (ii) any insecticide the sale, distribution or use of which is for the time being prohibited under the Act; and (iii) any insecticide except in accordance with the condition on which it was registered under the Act.
 31. National Building Codes of India, 2005 and as amended: This provides guidelines for regulating the building construction activities in India. The code mainly contains administrative regulations, development control rules and general building requirements; stipulations regarding materials, structural design and construction; and building and plumbing services. Contractors will be required to comply with all Bureau of Indian Standards Codes dealing with: (i) use and disposal of asbestos containing materials in construction; (ii) paints containing lead; (iii) permanent and temporary ventilations in workplace; (iv) safety, and hygiene at the workplace; (v) prevention of fire; (vi) prevention of accidents from faulty electrical gadgets, equipment and accessories; and all other such codes incidental to the Contract.

Appendix 2

Tables of Adjustment Data - Deleted

(Cl. 49 of GCC)

Appendix - 3²⁰
Appointment of Adjudicator

Suggested Draft of **Letter of Appointment of Adjudicators** in civil works contracts

Sub: _____ (Name of the Contract)

To

Name and address of the Adjudicator

We hereby confirm your appointment as Adjudicator for the above contract to carry out the assignment specified in this Letter of Appointment.

For administrative purpose _____ (*name of the officer representing the Employer*) has been assigned to administer the assignment and to provide the Adjudicator with all relevant information needed to carry out the assignment on behalf of both the employer and the contractor. The services will be required during the period of contract for the work of (Name of the Contract) _____.

The Adjudicator shall visit the worksite once in 3 (three) months till the completion of the work indicated above or as specifically requested by Employer/ Contractor for the period up to the end of defects liability period with prior intimation to the Employer and the contractor. The duration of each visit shall ordinarily be for one day only. These durations are approximate and (*Name of the employer and Name of the Contractor*) may find it necessary to postpone or cancel the assignment and/or shorten or extend the duration.

The appointment will become effective upon confirmation of letter by you. The appointment of Adjudicator shall be liable for termination under a 30 (thirty) days written notice from the date of issue of the notice, if both Employer and the Contractor so desire. Also the appointment shall automatically stand terminated 14 days after the defect notice / correction period as stated in Clauses 23 and 24 of the Conditions of Contract is over.

The Adjudicator will be paid a fee of Rs. _____ (Rupees _____ only) per each day of visit at the worksite. The actual expenses for boarding and traveling in connection with the assignment will be reimbursed to the Adjudicator. The Adjudicator will submit a pre-receipted bill in triplicate to the employer indicating the date of the visit, fees for the visit and a proof in support of the actual expenditure [only for items valued above Rs. 500 each] incurred by him against boarding, lodging and traveling expenses after performing the visit on each occasion. The Employer will make the admissible payment (both the Employer's and the Contractor's share) to the Adjudicator within 30 days of the receipt of the bill. The Contractor's share on this

²⁰ If ITB 49 makes provision of an Adjudicator from list provided by an institution, kindly modify Appendix 3 to state that the fee and reimbursable payable to the adjudicator shall be as per the rules of the Institution.

account (half the paid amount) will be recovered by the Employer from the Contractor's bills against the work.

In accepting this assignment, the Adjudicator should understand and agree that he is responsible for any liabilities and costs arising out of risks associated with travel to and from the place of emergency repatriation, loss or damage to personal/professional effects and property. The Adjudicator is advised to effect personal insurance cover in respect of such risks if he does not already have such cover in place. In this regard, the Adjudicator shall maintain appropriate medical, travel, accident and third-party liability insurance. The obligation under this paragraph will survive till termination of this appointment.

Procedures for resolution of disputes by the Adjudicator is described in the contract of _____ (name of the contract) between the employer and the contractor vide clause no.24 of the General Conditions of Contract. Your recommendation should be given in the format attached, within 28 days of receipt of a notification of dispute.

The Adjudicator will carry out the assignment in accordance with the highest standard of professional and ethical competence and integrity, having due regard to the nature and purpose of the assignment, and will conduct himself in a manner consistent herewith. After visiting the worksite, the Adjudicator will discuss the matter with the Employer and if necessary with the Contractor before arriving at any decision.

The Adjudicator will agree that all knowledge and information not within the public domain, which may be acquired while carrying out this service shall be all time and for all purpose, regarded as strictly confidential and held in confidence, and shall not be directly or indirectly disclosed to any party whatsoever, except with the permission of the employer and the contractor. The Adjudicator's decision should be communicated in the form of a speaking order specifying the reasons.

The Adjudicator will agree that any manufacturing or construction firm with which he might be associated with, will not be eligible to participate in bidding for any goods or works resulting from or associated with the project of which this consulting assignment forms a part

Read and Agreed

Name of Adjudicator

Signature

Place:

Date:

Name of Employer

Signature of authorized representative of Employer

Name of the Contractor

Signature of authorized representative of Contractor

Attachment: Copy of contract document between the employer and contractor and format for recommendation.

SUMMARY OF ADJUDICATOR'S RESPONSIBILITIES

The Adjudicator has the following principal responsibilities:

1. Visit the site periodically.
2. Keep abreast of job activities and developments.
3. Encourage the resolution of disputes by the parties.
4. When a dispute is referred to it, conduct a hearing (no legal presentation), complete its deliberations, and prepare a recommendations in a professional and timely manner (as per sample format)

Sample Format of Adjudicator's Recommendation

[Project Name] Recommendation of Adjudicator

Dispute No. XX [*NAME OF DISPUTE*]

Hearing Date: _____

Dispute

Description of dispute. A one or two sentence summation of the dispute.

Contractor's Position

A short summation of the contractor's position as understood by the Adjudicator.

Employer's Position

A short summation of the Employer's position as understood by the Adjudicator.

Recommendation

The Adjudicator's specific recommendation for settlement of the dispute. (*The recommended course is consistent with the explanation*).

Explanation

(*This section could also be called Considerations, Rationale, Findings, Discussion, and so on.*)

The Adjudicator's description of how each recommendation was reached.

Respectfully submitted,

Date : _____

Date : _____

Date : _____

Section X - Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security, ES performance security if applicable, and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

NOTIFICATION OF AWARD

Letter of Acceptance

[on letterhead paper of the Employer]

[The Letter of Acceptance shall be the basis for formation of the Contract as described in ITB Clause 45. This Standard Form of Letter of Acceptance shall be filled in and sent to the successful Bidder only after evaluation of bids has been completed, subject to any review by the World Bank required under the Loan Agreement.]

..... *[date]*

To: *[name and address of the Contractor]*

Subject: *[Notification of Award Contract No]*

This is to notify you that your Bid dated *[insert date]* for execution of the *[insert name of the contract and identification number, as given in the PCC]* for the Accepted Contract Amount of *[insert amount in numbers and words]*, as corrected and modified²¹ in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security, plus additional security for unbalanced bids in terms of ITB Clause 38, and ES Performance Security *[Delete ES Performance Security if it is not required under the contract]* in the form detailed in ITB Clause 48 for amounts²² of Rs. and Rs. specified therein, within 21 days of the receipt of this letter of acceptance, and visit this office to sign the contract, failing which action as stated in ITB Clause 48.2 will be taken in accordance with the Conditions of Contract. The securities shall be valid up to 28 days from the date of completion i.e. up to and shall be as per the Performance Security Form and the ES Performance Security Form *[Delete reference to the ES Performance Security Form if it is not required under the contract]*, included in Section X - Contract Forms, of the bidding document.

[Choose one of the following statements:]

We accept that _____ *[insert the name of Adjudicator proposed by the Bidder]* be appointed as the Adjudicator²³.

[or]

²¹ Delete "corrected and" or "and modified" if not applicable. See Notes on Standard Form of Agreement, next page.

²² Insert amounts for (i) Performance Security, plus additional security for unbalanced bids in terms of ITB Clause 38; and (ii) ES Performance Security respectively.

²³ To be used only if the Contractor disagrees in the Bid with the Adjudicator proposed by the Employer in the Instructions to Bidders, and has accordingly offered another candidate.

We do not accept that _____ *[insert the name of the Adjudicator proposed by the Bidder]* be appointed as the Adjudicator, and by sending a copy of this Letter of Acceptance to _____ *[insert name of the Appointing Authority]*, the Appointing Authority, we are hereby requesting such Authority to appoint the Adjudicator in accordance with ITB 49.1 and GCC 23.1²⁴.

We note that as per your bid, you do not intend to subcontract any component of work.

[OR]

We note that as per your bid, you propose to employ M/s. as sub-contractor for executing

We have reviewed the construction methodology submitted by you along with the bid in response to ITB Clause 16 and our comments are given in the attachment. You are requested to submit a revised Program including ES requirements as per Clause 30 of General Conditions of Contract within 14 days of receipt of this letter of acceptance.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

²⁴ To be used only if the Contractor disagrees in the Bid with the Adjudicator proposed by the Employer in the ITB, has accordingly offered another candidate, and the Employer does not accept the counterproposal.

Issue of Notice to proceed with the work

(letterhead of the Employer)

_____ (date)

To

_____ (name and address of the Contractor)

Dear Sirs:

Pursuant to your furnishing the requisite securities as stipulated in ITB clause 48.1, insurance policy as per GCC 13, construction methodology as stated in letter of acceptance and signing of the contract agreement for the construction of _____ @ a Bid Price of Rs. _____, you are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully,

(Signature, name and title of
signatory authorized to sign on
behalf of Employer)

Attachment: Contract Agreement

Contract Agreement

THIS AGREEMENT made the day of,, between *[name of the Employer]*. (hereinafter “the Employer”), of the one part, and *[name of the Contractor]*.(hereinafter “the Contractor”), of the other part:

WHEREAS the Employer desires that the Works known as *[name of the Contract]*.should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
 - (i) This Agreement
 - (ii) the Letter of Acceptance
 - (iii) the Contractor’s Bid including completed schedules and priced bill of quantities,
 - (iv) the addenda Nos _____(if any)
 - (v) the Particular Conditions
 - (vi) the General Conditions of Contract, including appendix;
 - (vii) the Specification
 - (viii) the Drawings
 - (ix) Construction Program, Methodology, Quality Assurance Program, the ES Management Strategies and Implementation Plans, and Code of Conduct for Contractor’s Personnel (ES)
 - (x) Joint Venture Agreement [for JVs only]; and
 - (xi) any other document **listed in the PCC** as forming part of the Contract.
3. In consideration of the payments to be made by the Employer to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of India on the day, month and year specified above.

Signed by: _____
for and on behalf of the Employer

Signed by: _____
for and on behalf the Contractor

in the
presence of: _____
Witness, Name, Signature, Address,
Date

in the
presence of: _____
Witness, Name, Signature, Address, Date

Performance Security - Bank Guarantee
[including Additional Performance Security for unbalanced bids]
[Guarantor letterhead or SWIFT identifier code]

Performance Guarantee No..... *[insert guarantee reference number]*

Date..... *[insert date of issue of the guarantee]*

To: _____ *[name of Employer]*

_____ *[address of Employer]*

WHEREAS _____ *[name and address of Contractor²⁵]* (hereinafter called "the Applicant") has undertaken, in pursuance of Contract No. _____ dated _____ to execute _____ *[name of Contract and brief description of Works]* (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Applicant shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Applicant such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Applicant, up to a total of _____ *[amount of guarantee²⁶]* _____ *[in words]*, such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ *[amount of guarantee]* as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Applicant before presenting us with the demand.

²⁵ *In the case of a JV, insert the name of the Joint Venture*

²⁶ *An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract less provisional sums, if any, plus additional performance security for unbalanced bids if any, and denominated in Indian Rupees.*

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Applicant shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until²⁷, and any demand for payment under it must be received by us at this office on or before that date.

Signature and seal of the guarantor _____

Name of Bank _____

Address _____

Date _____

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

²⁷ Insert the date twenty-eight days after the expected completion date as described in GC Clause 53.1. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Employer's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee"

Environmental and Social (ES) Performance Security
ES – Bank Guarantee

[Guarantor letterhead or SWIFT identifier code]

ES Performance Guarantee No.: *[Insert guarantee reference number]*

Date..... *[insert date of issue of the guarantee]*

To: _____ *[name of Employer]*

_____ *[address of Employer]*

WHEREAS _____ *[name and address of Contractor²⁸]* (hereinafter called "the Applicant") has undertaken, in pursuance of Contract No. _____ dated _____ to execute _____ *[name of Contract and brief description of Works]* (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Applicant shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his Environmental and/or Social (ES) obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Applicant such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Applicant, up to a total of _____ *[amount of guarantee²⁹]* _____ *[in words]*, such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ *[amount of guarantee]* as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Applicant before presenting us with the demand.

²⁸ *In the case of a JV, insert the name of the Joint Venture*

²⁹ *An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract less provisional sums, if any, and denominated in Indian Rupees.*

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Applicant shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until³⁰, and any demand for payment under it must be received by us at this office on or before that date.

Signature and seal of the guarantor _____

Name of Bank _____

Address _____

Date _____

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

³⁰ *Insert the date twenty-eight days after the expected completion date as described in GC Clause 53.1. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Employer's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee"*

Advance Payment Security
Demand Guarantee
[Guarantor letterhead or SWIFT identifier code]

Advance Payment Guarantee No..... *[insert guarantee reference number]*
Date..... *[insert date of issue of the guarantee]*

To: _____ *[name of Employer]*
_____ *[address of Employer]*
_____ *[name of Contract]*

Gentlemen:

In accordance with the provisions of the Conditions of Contract, Subclause 53.1 ("Advance Payment") of the above-mentioned Contract, _____ *[name and address of Contractor³¹]* (hereinafter called "the Applicant") shall deposit with _____ *[name of Employer]* a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of _____ *[amount of guarantee³²]* _____ *[in words]*.

We, the _____ *[bank or financial institution]*, as instructed by the Applicant, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to _____ *[name of Employer]* on his first demand without whatsoever right of objection on our part and without his first claim to the Applicant, in the amount not exceeding _____ *[amount of guarantee]* _____ *[in words]*.

We further agree that no change or addition to or other modification of the terms of the Contract or of Works to be performed thereunder or of any of the Contract documents which may be made between _____ *[name of Employer]* and the Applicant, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until _____ *[name of Employer]* receives full repayment of the _____

³¹ In the case of a JV, insert the name of the Joint Venture

³² An amount shall be inserted by the bank representing the amount of the Advance Payment, and denominated in Indian Rupees.

same amount from the Applicant. Consequently any demand for payment under this guarantee must be received by us at this office on or before that date.

Yours truly,

Signature and seal: _____

Name of Bank: _____

Address: _____

Date: _____

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

Retention Money Security
Demand Guarantee
[Guarantor letterhead or SWIFT identifier code]

_____ *[Bank's name and address of issuing branch or office]*

Beneficiary: _____ *[Name and Address of Employer]*

Date: _____

RETENTION MONEY GUARANTEE NO.: _____

We have been informed that _____ *[name of contractor³³]* (hereinafter called "the Applicant") has entered into Contract No. _____ *[reference number of the contract]* dated _____ with you, for the execution of _____ *[name of contract and brief description of Works]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment, payment of _____ *[insert the second half of the Retention Money]* is to be made against a Retention Money guarantee.

At the request of the Applicant, we _____ *[name of Bank]* hereby irrevocably undertake to pay you the sum or sums not exceeding in total an amount of _____ *[amount in Rupees]* (_____) *[amount in words³⁴]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Applicant is in breach of its obligation under the Contract without cavil or argument.

It is a condition for any claim and payment under this guarantee to be made that the payment of the second half of the Retention Money referred to above must have been received by the Applicant on its account number _____ at _____ *[name and address of Bank]*.

³³ *In the case of a JV, insert the name of the Joint Venture*

³⁴ *The Guarantor shall insert an amount representing the amount of the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security.*

This guarantee shall expire, at the latest, 21 days after the date when the Employer has received a copy of the Defects Liability Certificate issued by the Project Manager. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

[Signature(s) and seal of the guarantor]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

PART 4 – The procedure for participation in e-tendering

The procedure for participation in e-tendering

The bids/proposals shall be submitted in **2 (two) parts**:

Part I shall be named "Technical Bid" and shall comprise;

Envelope-1: Containing Cost of Bid document of Rs. 2500 (Rupees TwoThousand Five Hundred only) and a Bid Security as prescribed in ITB 19. The envelope should be super scribed as ***“Envelope 1 – Bid Security / Cost of Bid document for Repair and Renovation of District Hospitals in Mizoram. Bid for Lot ___.”***

Envelope-2: Containing all documents required as prescribed in ITB 11 and other parts of RFB. The envelope should be super scribed as ***“Envelope 2 – Repair and Renovation of District Hospitals in Mizoram. Bid for Lot ___.”*** In the technical proposal, there should not be any indication about the prices (printed or otherwise) of any of the products offered.

All the documents comprising ***Part I*** will have to be submitted online through eportal <https://mizoramtenders.gov.in/> and also in **HARD BOUND** (Hard bound implies such binding between two covers through stitching or otherwise whereby it may not be possible to replace any paper without disturbing the document) form with all pages sequentially numbered either at the top or at the bottom right-hand corner of each page e.g., by writing page 1 of 10 on page 1, if total pages are 10. It should also have an index giving page wise information of above documents.

All the sealed envelopes should again be placed in a sealed cover super scribed as ***“Repair and Renovation of District Hospitals in Mizoram. Bid for Lot ___.”***

“NOT TO BE OPENED BEFORE 5.01.2023 at 2:00 PM.” which should be received in the Office of the Project Director, MHSSP, on or before 5.01.2023 up to 12:00 Noon.

In case of any discrepancy between the Hard Bound and documents submitted through eportal, only eportal documents shall be considered for evaluation.

Part II shall be named "Financial Bid" and shall comprise

Form of Bid mentioned in Section IV.

FINANCIAL BID: To be submitted through e-portal <https://mizoramtenders.gov.in/> **only**. No hard copy is accepted.