



SHILLONG MUNICIPAL BOARD

PERCENTAGE RATE TENDERS

FOR

**“CONSTRUCTION, SUPPLY, INSTALLATION, AND COMMISSIONING OF THE
SOLID WASTE MANAGEMENT FACILITY AT UMSHANGLING FOR NONGPOH
TOWN COMMITTEE, RI-BHOI DISTRICT, MEGHALAYA.”**

Issued to _____

Chief Executive Officer
Shillong Municipal Board
Bishop Cotton Road,
Shillong-793001, Meghalaya
<http://.gov.in>

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No. SMB/PW/NPH_SWM/32/2025-26/16

Dated Shillong, 11th March 2026

NOTICE INVITING TENDER (NIT)

Shillong Municipal Board hereby invites sealed bids on percentage rate basis, in the offline mode, for the following work from approved and eligible contractors having registered with Shillong Municipal Board, Urban Affairs Shillong or other Departments of the Government of Meghalaya. In this tender, the two-bid system (Technical Bid and Financial Bid) shall be used.

Name of the Work	Construction, Supply, Installation, and Commissioning of the Solid Waste Management Facility at Umshangling for Nongpoh Town, Ri-Bhoi District, Meghalaya,
Estimated Amount (in Rs)	5,11,84,103.00
Bid Security (in Rs)	5,12,000.00 in case of ST bidders and 10,24,000.00 for Others
Bid Validity	120 (One Hundred and Twenty) days from the last date of submission of bids.
Bid Document Fees (in Rs.)	5,000/-
Performance Security	5% of the Contract Value
Completion period	12 months

- The Bid documents will be issued from **18th March 2026 to 8th April 2026** during office hours from the Office of the Shillong Municipal Board on payment of the prescribe fee as above.
- The Bid Documents can also be downloaded from the SMB Portal (smb.gov.in). Bidders who submit their bids with the downloaded documents shall also furnish the payment of Rs. 5000/- in the form of a DD drawn in favour of the Chief Executive Officer, Shillong Municipal Board.
- Sealed Bids will be received in the office of the Chief Executive Officer, Shillong Municipal Board, Bishop Cotton Road, Shillong – 793001 up to **13:30 hours of the 10th April 2026**, and will be opened on the same day at **14:00 hours (IST)** in the presence of the bidders or their authorized representatives who wish to attend.
- Intending bidders are instructed to read the Bid Documents carefully before submitting their bids.
- Clarification if required may be sought for in writing from the undersigned before the 30th March 2026.
- Interested bidders are requested to read the bid documents carefully before submission of the bids

The Shillong Municipal Board reserves the right to accept or reject any or all bids without assigning any reason thereof.


Chief Executive Officer,
Shillong Municipal Board

Memo No. SMB/PW/NPH_SWM/32/2025-26/16-A

Dated Shillong, 11th March 2026

Copy to:

1. The Director, Urban Affairs Department, for kind information.
2. The Deputy Commissioner, Ri-Bhoi District, Nongpoh for kind information
3. Director of Information and Public Relations, with a request to kindly publish the NIT in two local newspapers. Payment for the same may be submitted to the undersigned.
4. State Information Officer, National Information Center, with a kind request to upload the NIT on the Government and Shillong Municipal Board portal.

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Chief Executive Officer,
Shillong Municipal Board

SECTION - I
INSTRUCTIONS TO BIDDERS

1. INTRODUCTION

1.1. Shillong Municipal Board proposes to establish a Solid Waste Management Facility at Umshangling to scientifically process municipal waste generated by Nongpoh Town Committee.

The facility will include:

- Material Recovery Facility (MRF)
- Composting Unit
- Civil infrastructure
- Machinery and equipment

2. SITE LOCATION

2.1. The proposed Solid Waste Management Facility will be developed at Umshangling, Nongpoh, in Ri-Bhoi District, Meghalaya. The facility is designed to process the municipal solid waste generated by Nongpoh Town Committee with an objective of achieving maximum resource recovery and minimal disposal of rejects, in line with the Solid Waste Management Rules, 2016 and the Meghalaya State Waste Management Policy & Strategy 2019.

3. SITE VISIT

3.1. All bidders are encouraged to visit the project site before submitting bids in order to better:

- understand terrain and access
- evaluate existing infrastructure
- assess operational requirements

3.2. The costs associated with visiting the Site shall be entirely at the Bidder's own expense.

3.3. The Bidder and/or any of its personnel or agents shall obtain prior authorization by the SMB to visit the Site for the purpose of inspection and familiarization with site conditions. However, the Bidder shall be responsible for any risk, injury, loss, or damage to persons or property that may occur during the site visit.

Submission of a Bid shall be deemed to constitute confirmation that the Bidder has inspected the Site and is satisfied with the site conditions and scope of the Works.

4. SCOPE OF WORK:

4.1. Under this Contract, the scope of the work (the "Scope of the Project") shall mean and include:

4.1.1 Construction and development of the Solid Waste Management Facility at Umshangling, Nongpoh, on the Site specified in the Contract Data, including all associated civil infrastructure, utilities, waste processing facilities, and installation of machinery and

equipment, in accordance with the specifications, standards, drawings, and requirements set forth in the Contract Agreement.

4.1.2 Performance and fulfillment of all obligations of the Contractor in accordance with the provisions of the Contract Agreement, including supply, installation, testing and commissioning of the waste processing systems, together with all activities incidental thereto or necessary for the successful completion of the Project.

4.2. The Contractor's scope shall broadly include construction of civil, structural, and infrastructure works necessary for the development of the Solid Waste Management Facility, along with supply and installation of waste processing machinery and operational infrastructure. The Contractor shall also provide all materials, labour, equipment, tools and plants, transportation, storage, testing, commissioning, and all other services required for the successful completion of the facility in accordance with the specifications and drawings. The various components of the scope of work shall include, but not be limited to, the following:

4.2.1. Development of Waste Processing Infrastructure

Construction and development of the required infrastructure for the Solid Waste Management Facility, including:

- conversion and upgrading of the existing windrow composting shed into an MRF sorting facility and shall be capable of processing approximately 2 tons per day of dry waste
- provision and installation of infrastructure necessary for the composting of biodegradable waste and shall be capable of processing approximately 3 tons per day of wet waste
- construction or improvement of storage shed for recovered dry waste
- provision of working platforms for waste segregation

4.2.2. Construction of Civil Infrastructure

Construction of essential civil infrastructure required for the operation of the facility, including but not limited to:

- RCC counterfort retaining wall for slope stabilization
 - construction of approach road and internal circulation roads
 - construction of boundary wall and entrance gate
 - development of RCC drainage system within the site
 - construction of security guard room
 - development of vehicle washing bay
 - site grading, leveling, and necessary earthworks.
- All civil works shall be executed in accordance with relevant engineering standards and specifications.

4.2.3. Supply and Installation of Waste Processing Machinery

Supply, installation, testing, and commissioning of the machinery and equipment required for the operation of the Solid Waste Management Facility, including but not limited to:

- conveyor belt sorting system for the Material Recovery Facility
- plastic shredding machine
- hydraulic baling machine
- backhoe loader for waste handling and site operations
- necessary tools, accessories, and safety equipment.

All equipment shall comply with the minimum technical specifications specified in the tender document.

4.2.4. Provision of Utilities and Supporting Infrastructure

Provision and installation of essential utilities required for the proper functioning of the facility, including:

- electrical power distribution system
- internal lighting within the facility
- water supply and storage system
- drainage network
- other supporting infrastructure necessary for safe and efficient facility operation.

4.2.5. Supply and Distribution of Waste Segregation Bins

Procurement and supply of household waste segregation bins for distribution within the jurisdiction of Nongpoh Town Committee to promote segregation of waste at source.

The contractor shall supply 10,000 waste bins (5000 pairs) consisting of:

- green bins for biodegradable waste
- blue bins for dry recyclable waste

The distribution shall be carried out in accordance with the directions of the Nongpoh Town Committee.

4.2.6. Compliance with Environmental and Safety Standards

All activities carried out under the project shall comply with:

- Solid Waste Management Rules, 2026
- applicable environmental regulations
- occupational health and safety standards.

- The Contractor shall further ensure full compliance with all applicable statutory laws, rules, regulations, notifications, and guidelines issued by the Central Government, State Government, local authorities, and regulatory bodies, including but not limited to environmental protection regulations, labour laws, safety standards, and pollution control requirements.

5. Eligible Bidders

5.1. A Bidder may be a natural person, private entity, government-owned entity—or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a Joint Venture (JV). In the case of a JV:

5.1.1 All partners of the Joint Venture shall be jointly and severally liable for the execution of the Contract in accordance with the terms and conditions of the Contract Agreement., and

5.1.2 The Joint Venture shall nominate a Lead Partner/Authorized Representative, who shall have the authority to conduct all business on behalf of all partners of the Joint Venture during the bidding process and, in the event that the Joint Venture is awarded the Contract, during the execution of the Contract.

5.1.3 The Lead Partner shall be responsible for coordination and communication with Shillong Municipal Board (SMB) and shall ensure compliance with all contractual obligations.

5.2. A Bidder shall not have a conflict of interest in the bidding process. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest with one or more parties in the bidding process if, including but not limited to, the Bidder:

5.2.1. has controlling shareholders or ownership interests in common with another Bidder; or

5.2.2. receives or has received any direct or indirect financial subsidy, assistance, or support from another Bidder that could influence the fairness of the bidding process; or

5.2.3. has a business or financial relationship with another Bidder, either directly or through common third parties, that places them in a position to access confidential information about another Bidder's proposal or influence the evaluation process conducted by Shillong Municipal Board; or

5.2.4. has participated, either directly or through an affiliated entity, as a consultant, advisor, or service provider in the preparation of the design, technical specifications, or DPR related to the works that are the subject of this tender; or

5.2.5. employs, or has engaged, a person or entity that has been employed by Shillong Municipal Board or the Urban Affairs

Department, Government of Meghalaya, or any of its agencies within the last two (2) years, in a manner that may create a conflict of interest in the bidding process.

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

- 6.1.** A prospective Bidder requiring any clarification of the Bidding Document shall contact Shillong Municipal Board (SMB) in writing at the address indicated in the Bid Data Sheet, or may raise such queries during the pre-bid meeting.
- 6.2.** The SMB shall respond in writing to any request for clarification, provided that such request is received not later than the date specified in the NIT. The response of SMB shall be forwarded to all Bidders who have obtained the Bidding Document, including a description of the query but without identifying the source of the query.
- 6.3.** If the SMB considers it necessary to amend the Bidding Document as a result of a clarification request, it shall do so in accordance with the procedures specified under ITB 7.
- 6.4.** The Bidder's designated representative is invited to attend a Pre-Bid Meeting which shall be held on the date, time, and venue specified in the Bid Data Sheet.
- 6.5.** The purpose of the Pre-Bid Meeting is to:
 - clarify any issues regarding the Bidding Document,
 - address queries raised by prospective Bidders, and
 - provide additional information relating to the scope and requirements of the Project.
- 6.6.** Bidders are requested to submit any questions or requests for clarification in writing, so as to reach the SMB not later than seven (7) days prior to the date of the Pre-Bid Meeting.
- 6.7.** Minutes of the Pre-Bid Meeting, including the text of the questions raised and the responses provided, shall be circulated to all Bidders who have obtained the Bidding Document. Any modification to the Bidding Document that may arise as a result of the Pre-Bid Meeting shall be issued by the SMB only through an Addendum, in accordance with the provisions of this Bidding Document. Such Addendum shall form an integral part of the Bidding Document and shall be binding on all Bidders.

7. Amendment of Bidding Document

- 7.1.** At any time prior to the deadline for submission of bids, Shillong Municipal Board (SMB) may amend the Bidding Document by issuing an Addendum.
- 7.2.** Any Addendum issued shall form an integral part of the Bidding Document and shall be communicated in writing to all prospective Bidders who have obtained the Bidding Document from the SMB.
- 7.3.** In order to allow prospective Bidders sufficient time to take the Addendum into account while preparing their bids, the SMB may, if deemed necessary, extend the deadline for submission of bids. Any such

extension shall be notified to all Bidders in writing.

8. Preparation of Bids

- 8.1.** The Bidder shall bear all costs associated with the preparation and submission of its Bid. Shillong Municipal Board (SMB) shall in no case be responsible or liable for such costs, regardless of the conduct or outcome of the bidding process.
- 8.2.** The Bid shall comprise two separate envelopes submitted simultaneously.
 - 8.2.1.** The first envelope shall be clearly marked *“Technical Bid for Construction, Supply, Installation and Commissioning of Solid Waste Management Facility at Umshangling for Nongpoh Town Committee, Ri-Bhoi District, Meghalaya”* and shall contain the documents specified in Section 9.1 of this Bidding Document.
 - 8.2.2.** The second envelope shall be clearly marked *“Financial Bid for Construction, Supply, Installation and Commissioning of Solid Waste Management Facility at Umshangling for Nongpoh Town Committee, Ri-Bhoi District, Meghalaya”* and shall contain the documents specified in Section 10.1 of this Bidding Document.
- 8.3.** Both envelopes shall be sealed separately and placed together inside a single outer envelope, which shall be properly sealed and clearly marked in accordance with the instructions provided in this Bidding Document.
- 8.4.** Failure to comply with these requirements may result in the rejection of the Bid.

9. Documents Comprising the Technical Bid

- 9.1.** The Technical Bid shall contain the following documents:
 - 9.1.1.** Letter of Technical Bid, duly completed and signed by the authorized representative of the Bidder in the format specified in **Form – 1**.
 - 9.1.2.** Bid Security in the form and amount specified in the Bid Data Sheet.
 - 9.1.3.** Written Confirmation of Authorization, such as a Power of Attorney or authorization letter, authorizing the signatory of the Bid to commit the Bidder to the Bid. The written confirmation of authorization to sign on behalf of the Bidder shall consist of:
 - 9.1.3.1.** Organizational document, board resolution or its equivalent, or Power of Attorney specifying the representative’s authority to sign the bid on behalf of the Bidder.
 - 9.1.3.2.** If the Bidder is an intended or an existing joint venture, the Power of Attorney (POA) should be signed by all partners and specify the authority of the named representative of the joint venture to sign on behalf of

the intended or existing joint venture. If the joint venture is not yet formed, also include evidence from all proposed joint venture partners of their intent to enter into a joint venture in the event of a contract award.

9.1.3.3. POA to be submitted should be in original and notarized.

9.1.4. Documentary Evidence of the Bidder's Qualifications, as required under ITB 16, demonstrating that the Bidder meets the eligibility and qualification criteria necessary to perform the Contract.

9.1.5. The Technical Proposal describing the Bidder's proposed approach, methodology, work plan, and resources for execution of the Project. The Technical Proposal shall include, but not be limited to, the following components:

- i. A detailed description of the proposed methodology for the execution of civil works and infrastructure development at the Solid Waste Management Facility, including site preparation, construction of civil structures, and installation of utilities.
- ii. Details of the machinery, tools, and equipment proposed to be deployed for the project, including the machineries and equipment to be supplied and installed for the proposed facility:
- iii. The Bidder shall demonstrate that the proposed equipment meets the minimum technical specifications specified in the Bidding Document.
- iv. Any additional information required under Section 4 of this Bidding Document (Bidding Forms) to demonstrate the Bidder's technical capability, experience, and resources for executing the Project.

10. Any Other Document required to be submitted as part of the Technical Bid as specified in the Bid Data Sheet.

11. The Technical Proposal shall be provided in sufficient detail to demonstrate the Bidder's understanding of the Project requirements and the adequacy of the proposed methodology and resources to complete the works within the specified time period.

12. Failure to submit any of the required documents may result in the Bid being declared non-responsive and liable for rejection.

13. Documents Comprising the Financial Bid

13.1. The Financial Bid shall contain the following documents:

- (a) Letter of Financial Bid, duly completed and signed by the authorized

representative of the Bidder in the format as specified in **Form - 2**.

- (b) In the Letter of Financial Bid, the Bidder shall clearly indicate the quoted rate by writing “At Par”, or the percentage above the Engineer’s estimated rates as well as in absolute value in both words and figures, in the space provided therein.
- (c) Failure to submit the required Financial Bid documents in the prescribed format may result in the Bid being declared non-responsive.

14. In addition to the requirements specified above (9 and 10), bids submitted by a Joint Venture (JV) shall include:

- (a) A copy of the Joint Venture Agreement entered into by all partners, clearly defining the roles, responsibilities, and share of participation of each partner in the Joint Venture.
Alternatively,
- (b) A Letter of Intent to enter into a Joint Venture Agreement, signed by all partners, committing them to execute the Joint Venture Agreement in the event that the Bid is successful.
- (c) Such Letter of Intent shall be submitted together with a copy of the proposed Joint Venture Agreement. All partners of the Joint Venture shall be jointly and severally liable for the execution of the Contract.

15. Letters of Bid and Schedules

15.1. The Letter of Technical Bid and the Letter of Financial Bid shall be prepared using the relevant forms provided in **Section–VIII** of this Bidding Document (Bid and Contract Forms). The prescribed forms shall be duly completed and signed by the authorized representative of the Bidder. The forms shall be used without any alteration to the text, and no substitute forms shall be accepted. All blank spaces in the forms shall be properly filled in with the information requested. Failure to provide the required information or submission of altered forms may result in the Bid being considered non-responsive and liable for rejection. The Letters of Bid and the accompanying schedules shall form an integral part of the Bid submitted by the Bidder.

16. Documents Establishing the Qualifications of the Bidder

- 16.1.** To establish its qualifications to perform the Contract in accordance with the requirements specified in **Section-III** of this Bidding Document (Evaluation and Qualification Criteria), the Bidder shall provide the information and supporting documents requested in the corresponding forms and information sheets included in **Section-VIII** (Bid and Contract Forms).
- 16.2.** The Bidder shall furnish documentary evidence demonstrating that it meets the technical experience, financial capability, and organizational capacity required for the execution of the Project.
- 16.3.** All submitted information shall be true, accurate, and supported by relevant

documentary evidence. Failure to provide the required information or submission of incomplete documentation may result in the Bid being declared non-responsive.

17. Period of Validity of Bids

- 17.1.** Bids shall remain valid for the period specified in the Bid Data Sheet, calculated from the deadline for submission of bids. Any Bid submitted with a validity period shorter than the period specified shall be rejected as non-responsive.
- 17.2.** In exceptional circumstances, prior to the expiration of the bid validity period, Shillong Municipal Board (SMB) may request Bidders to extend the validity period of their Bids. The request and the responses thereto shall be made in writing.
- 17.3.** If the Bidder agrees to extend the validity of the Bid, the Bid Security shall also be extended for a period of thirty (30) days beyond the new deadline of the extended bid validity period.
- 17.4.** A Bidder may refuse the request for extension without forfeiting its Bid Security. A Bidder agreeing to the request for extension shall not be permitted to modify its Bid during the extended validity period.

18. Bid Security

- 18.1.** The Bidder shall furnish, as part of its Bid, an original Bid Security in accordance with ITB 9.1 (b).
- 18.2.** The Bid Security shall, at the Bidder's option, be submitted in any one of the following forms:
 - an unconditional Bank Guarantee issued by a Scheduled or Nationalized Bank; or
 - a cashier's cheque or certified cheque drawn in favour of Shillong Municipal Board.
- 18.3.** In the case of a Bank Guarantee, the Bid Security shall be submitted using the format as specified in **Form-3**. The form shall clearly indicate the complete name of the Bidder. The Bid Security shall remain valid for a period of thirty (30) days beyond the validity period of the Bid, including any extension of the bid validity period as requested under the Instructions to Bidders.
- 18.4.** Any Bid not accompanied by a substantially compliant Bid Security shall be rejected by the Employer as non-responsive.
- 18.5.** The Bid Security of unsuccessful Bidders shall be returned as promptly as possible after the successful Bidder has furnished the required Performance Guarantee and signed the Contract Agreement.
- 18.6.** The Bid Security may be forfeited under the following circumstances:
 - if a Bidder withdraws its Bid during the period of bid validity specified in the Letter of Technical Bid and Letter of Financial Bid, except as provided in the Instructions to Bidders; or
 - if the successful Bidder fails to:
 - ❖ sign the Contract Agreement in accordance with the

provisions of this Bidding Document;

- ❖ furnish the required Performance Guarantee within the specified time; or
- ❖ accept the arithmetical corrections made during the bid evaluation process.

18.7. In the case of a Joint Venture (JV), the Bid Security shall be issued in the name of the Joint Venture submitting the Bid. If the Joint Venture has not been legally constituted at the time of bidding, the Bid Security shall be issued in the names of all proposed partners of the Joint Venture, as stated in the Letter of Intent to form the Joint Venture.

19. Format and Signing of Bid

19.1. The Bidder shall prepare one (1) original of the Technical Bid and one (1) original of the Financial Bid comprising the Bid as described in the Instructions to Bidders, and clearly mark them “ORIGINAL – TECHNICAL BID” and “ORIGINAL – FINANCIAL BID.” In addition, the Bidder shall submit two (2) copies of the Technical Bid, clearly marking each as “COPY.” In the event of any discrepancy between the original and the copies, the original shall prevail.

19.2. 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. Such authorization shall be evidenced by a written confirmation or Power of Attorney, which shall be attached to the Bid. The name and designation of each person signing the authorization shall be typed or printed below the signature. All pages of the Bid, except for unamended printed literature, shall be signed or initialed by the person signing the Bid.

19.3. Any amendments to the Bid, such as interlineations, erasures, or overwriting, shall be valid only if they are signed or initialed by the person signing the Bid.

20. Submission and Opening of Bids

20.1. Sealing and Marking of Bids

20.1.1. Bidders shall enclose the original of the Technical Bid, the original of the Financial Bid, and a copy of the Technical Bid, in separate sealed envelopes, duly marked as “ORIGINAL - TECHNICAL BID”, “ORIGINAL - FINANCIAL BID” and “COPY NO... - TECHNICAL BID”. The envelopes containing the Technical Bids (Original and Copies) shall be enclosed together in one sealed envelope clearly marked “TECHNICAL BID.” Similarly, the envelope containing the Financial Bid shall be clearly marked “FINANCIAL BID.” Both sealed envelopes shall then be enclosed in one outer sealed envelope.

20.1.2. The inner and outer envelopes shall:

- (a) bear the name and address of the Bidder;
- (b) be addressed to Shillong Municipal Board (SMB) at the

address specified in the Bid Data Sheet; and

- (c) bear the specific reference number and title of the Bid as indicated in the Bid Data Sheet.

20.1.3. The outer envelope and the envelope containing the Technical Bid shall bear the following warning:

- “DO NOT OPEN BEFORE THE DATE AND TIME SPECIFIED FOR THE OPENING OF TECHNICAL BIDS.”

The envelope containing the Financial Bid shall bear the following warning:

- “FINANCIAL BID – NOT TO BE OPENED UNTIL ADVISED BY SHILLONG MUNICIPAL BOARD.”

20.1.4. If the envelopes are not properly sealed and marked as required above, Shillong Municipal Board shall assume no responsibility for the misplacement, loss, or premature opening of the Bid.

21. Deadline for Submission of Bids

- 21.1.** Bids must be received by Shillong Municipal Board (SMB) at the address, not later than the date and time indicated in the Bid Data Sheet.
- 21.2.** The SMB may, at its discretion, extend the deadline for submission of bids by issuing an amendment or addendum to the Bidding Document in accordance with the provisions of this Document.
- 21.3.** The SMB shall not consider any Bid received after the deadline for submission of bids. Any Bid received after the specified deadline shall be declared a late Bid, rejected, and returned unopened to the Bidder.

22. Withdrawal, Substitution, and Modification.

- 22.1.** Prior to the deadline for submission of bids, a Bidder may withdraw, substitute, or modify its Bid (Technical Bid or Financial Bid) by submitting a written notice, duly signed by the Bidder’s authorized representative.
- 22.2.** Bids for which a request for withdrawal has been received before the deadline for submission of bids shall be returned unopened to the Bidder.
- 22.3.** No Bid shall be withdrawn, substituted, or modified after the deadline for submission of bids and before the expiration of the bid validity period specified in the Letters of Technical Bid and Financial Bid, or any extension thereof.

23. Opening of Technical and Financial Bids

- 23.1.** Shillong Municipal Board (SMB) shall open the Technical Bids in public at the address, date, and time specified in the Bid Data Sheet (BDS), in the presence of the Bidders or their duly authorized representatives who choose to attend. The Financial Bids shall remain sealed and shall be kept in the custody of SMB until the scheduled time for their opening. If both the Technical Bid and Financial Bid are submitted together in a single envelope, SMB may either reject the entire Bid as non-responsive, or

alternatively, separate and reseal the Financial Bid for opening at a later stage.

- 23.2. All envelopes containing the Technical Bids shall be opened one at a time, and the following information shall be read out and recorded:
 - (a) the name of the Bidder;
 - (b) the presence of Bid Security; and
 - (c) any other details considered appropriate by SMB.
- 23.3. Only the Technical Bids that are opened and recorded at the bid opening session shall be considered for evaluation. No Bid shall be rejected at the opening of Technical Bids except for late Bids received after the deadline for submission.
- 23.4. Upon completion of the evaluation of the Technical Bids, SMB shall invite those Bidders whose Technical Bids have been found substantially responsive and technically qualified to attend the opening of the Financial Bids. The date, time, and venue for the opening of the Financial Bids shall be communicated in writing by SMB to all such qualified Bidders.
- 23.5. SMB shall notify in writing those Bidders whose Technical Bids have been determined to be substantially non-responsive to the requirements of the Bidding Document. The Financial Bids of such Bidders shall be returned unopened.
- 23.6. SMB shall conduct the opening of the Financial Bids of all Bidders whose Technical Bids have been found substantially responsive, in the presence of the Bidders' authorized representatives who choose to attend, at the address, date, and time notified by SMB.
- 23.7. All envelopes containing the Financial Bids shall be opened one at a time, and the following information shall be read aloud and recorded during the bid opening proceedings:
 - (a) the name of the Bidder;
 - (b) the Bid Price, including any discounts or percentage quoted above or below the Engineer's estimated rates, as applicable; and
 - (c) any other details considered appropriate by Shillong Municipal Board.
- 23.8. Only the Financial Bids that are opened, read out, and recorded during the bid opening session shall be considered for evaluation. No Bid shall be rejected at the stage of opening of Financial Bids.

24. Confidentiality

- 24.1. Information relating to the examination, evaluation, comparison of bids, and recommendation for award of contract shall not be disclosed to Bidders or to any other person not officially concerned with such processes until the final decision regarding the award of the Contract has been made.
- 24.2. Any attempt by a Bidder to influence Shillong Municipal Board (SMB) in the examination, evaluation, comparison of bids, or in the decision regarding the award of the Contract may result in the rejection of the

25. Clarification of Bids

- 25.1.** To assist in the examination, evaluation, and comparison of Bids, Shillong Municipal Board (SMB) may request any Bidder to provide clarification regarding its Bid. Any clarification submitted by a Bidder that is not in response to a request from SMB shall not be considered. The request for clarification by SMB and the response from the Bidder shall be in writing. No change in the substance of the Technical Bid or the price quoted in the Financial Bid shall be sought, offered, or permitted, except for the purpose of confirming the correctness of the information provided in the bids.
- 25.2.** If a Bidder fails to provide the requested clarification within the date and time specified in the request, the Bid may be rejected as non-responsive.

26. Responsiveness of Bids

- 26.1.** A substantially responsive Bid is one that conforms to all the terms, conditions, and requirements of the Bidding Document, without any material deviation, reservation, or omission. A material deviation, reservation, or omission is one that, if accepted, would:
- (a) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
 - (b) limit in any substantial way, inconsistent with the provisions of the Bidding Document, the rights of Shillong Municipal Board (SMB) or the obligations of the Bidder under the proposed Contract; or
 - (c) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.
- 26.2.** SMB shall examine the technical aspects of the Bid, particularly the Technical Proposal, to verify that all requirements specified in **Section-IX** (BOQ and Drawings) have been met without any material deviation, reservation, or omission.
- 26.3.** If a Bid is found to be not substantially responsive to the requirements of the Bidding Document, it shall be rejected by SMB and shall not subsequently be made responsive by correction of the material deviation, reservation, or omission.
- 26.4.** Provided that a Bid is substantially responsive, SMB may waive any nonconformity or irregularity in the Bid that does not constitute a material deviation, reservation, or omission.
- 26.5.** Provided that a Technical Bid is substantially responsive, SMB may request the Bidder to submit additional information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities related to documentation requirements. Failure of the Bidder to comply with such a request may result in the rejection of the Bid.
- 26.6.** Provided that a Technical Bid is substantially responsive, SMB may rectify quantifiable nonmaterial nonconformities related to the Bid Price.

For the purpose of comparison of Bids, the Bid Price may be adjusted to account for the price of any missing or non-conforming item or component. Such adjustments shall be made for evaluation purposes only and shall not affect the Bid Price quoted by the Bidder.

27. Qualification of Bidders

- 27.1.** Shillong Municipal Board (SMB) shall determine, to its satisfaction during the evaluation of the Technical Bids, whether the Bidders meet the qualification and eligibility criteria specified in **Section-III** (Evaluation and Qualification Criteria). Such determination shall be based on the examination of the documentary evidence submitted by the Bidder, including technical experience, financial capacity, organizational capability, and other qualification requirements specified in the Bidding Document.
- 27.2.** An affirmative determination of the Bidder's qualifications shall be a prerequisite for the opening and evaluation of the Financial Bid. If the determination is negative, the Bidder shall be disqualified, and the Financial Bid shall be returned unopened to the Bidder.

28. Comparison of Bids

- 28.1.** All substantially responsive Bids shall be evaluated and compared by Shillong Municipal Board (SMB) in order to determine the lowest evaluated Bid in accordance with the provisions of this Bidding Document. The evaluation shall take into account the percentage quoted above, below, or at par with the Engineer's estimated rates, along with any other relevant factors specified in the Bidding Document.
- 28.2.** SMB reserves the right to accept or reject any Bid, and to annul the bidding process and reject all Bids at any time prior to the award of the Contract, without thereby incurring any liability to the affected Bidders or any obligation to inform the Bidders of the reasons for such action. In the event of such annulment, all Bids submitted, including the Bid Securities, shall be promptly returned to the respective Bidders.

29. Award of Contract

- 29.1.** The Contract shall be awarded to the Bidder whose Bid has been determined to be the lowest evaluated Bid and is substantially responsive to the requirements of the Bidding Document, provided that the Bidder is determined to be qualified and capable of performing the Contract satisfactorily.
- 29.2.** Prior to the expiration of the Bid validity period, the successful Bidder shall be notified in writing by Shillong Municipal Board (SMB) through the issuance of a Letter of Award (LoA) as per the format specified in **Form-6**.
- 29.3.** The bidder shall return a signed copy of the LoA within seven (7) days from the date of receipt to show its acceptance of the award of work. Until a formal Contract Agreement is prepared and executed, the Letter of

Award shall constitute a binding agreement between SMB and the successful Bidder.

- 29.4.** Within fifteen (15) days from the date of receipt of the Letter of Award, the successful Bidder shall furnish the required Performance Guarantee in accordance with the Conditions of Contract. The Performance Guarantee shall be submitted using the Performance Guarantee Form provided in **Form-7** of this Bidding Document.
- 29.5.** Within six (6) days from the date of furnishing the Performance Guarantee, the successful Bidder shall execute the Contract Agreement with the SMB.
- 29.6.** Failure of the successful Bidder to furnish the Performance Guarantee or to execute the Contract Agreement within the specified period shall constitute sufficient grounds for annulment of the award and forfeiture of the Bid Security. In such circumstances, SMB shall have the right to award the Contract to the next lowest evaluated Bidder whose Bid is substantially responsive and who is determined to be qualified to perform the Contract satisfactorily.

SECTION - II
BID DATA SHEET

ITB 6.1	Bidders may seek clarification from the following address: Chief Executive Officer SHILLONG MUNICIPAL BOARD Bishop Cotton Road, Shillong Meghalaya- 793001 Telephone: 364 2224850 Facsimile number: 364 2224702 Electronic mail address: smb-meg@nic.in
ITB 6.4	Date of the Pre-bid meeting – 27 th March 2026 Time: 02:30 Hrs Venue: Office of the Chief Executive Officer, Shillong Municipal Board , Bishop Cotton Road, Shillong – 793001, Meghalaya
ITB 9.1(b)	The currency, amount and form of the Bid Security shall be: Currency: INR Amount: 10,25,000.00 Form: <ul style="list-style-type: none"> • an unconditional Bank Guarantee issued by a Scheduled or Nationalized Bank (Form-3); or • a cashier’s cheque or certified cheque drawn in favour of the Chief Executive Officer, Shillong Municipal Board.
ITB 9.1 (f)	The Bidder shall submit with its Technical Bid the following additional documents: <ol style="list-style-type: none"> 1. For Single entity and individual bidders - the PAN No. (Permanent Account Number) of Income tax with the Xerox copy of the PAN card; 2. The GST registration certificate and in case of JV, the GST registration certificate of the lead partner 3. The addendums issued (if any) further duly signed by the Authorized representative. The copy of the JV agreement or the formal intent to enter into JV should be legally notarized. The JV agreement or the formal intent to enter into JV should specify the financial stakes of each of the joint venture partner;
ITB 14.1	The bid validity period shall be 120 days after the deadline for submission of bid.
ITB 17.1.2 (b)	Bids to be delivered to this address: O/o The Chief Executive Officer SHILLONG MUNICIPAL BOARD Bishop Cotton Road, Shillong Meghalaya- 793001
ITB 17.1.2 (c)	Bid Title: Bid for “ Construction, Supply, Installation, and

	<p>Commissioning of the Solid Waste Management Facility at Umshangling for Nongpoh Town Committee, Ri-Bhoi District, Meghalaya”</p> <p>Bid Reference No: No. SMB/PW/NPH_SWM/32/2025-26</p>
ITB 18.1	<p>Deadline for Submission of Bids</p> <p>Date: 8th April 2026</p> <p>Time: 01:30 PM</p>
ITB 20.1	<p>Venue, Date and Time for opening of the Technical Bid:</p> <p>Venue:</p> <p>O/o The Chief Executive Officer SHILLONG MUNICIPAL BOARD Bishop Cotton Road, Shillong Meghalaya- 793001</p> <p>Date: 8th April 2026</p> <p>Time: 02:00 PM</p>

SECTION - III
EVALUATION AND QUALIFICATION CRITERIA

1. Evaluation

1.1. Adequacy of Technical Proposal

Evaluation of the Bidder's Technical Proposal will include an assessment of the Bidder's technical capacity to mobilize resources for the contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in this bid.

Non-compliance shall not automatically constitute grounds for rejection of the Bid. Such non-compliance may be subject to clarification during the bid evaluation process and may be required to be rectified prior to the award of the Contract, if deemed acceptable by Shillong Municipal Board.

2. Qualification

2.1. Eligibility

- 2.1.1.** In case of an individual, the bidder shall be a citizen of India.
- 2.1.2.** In the case of an entity, the Bidder shall be duly registered or incorporated under the relevant laws of India.
- 2.1.3.** In the case of a Joint Venture (JV), each partner of the Joint Venture shall comply with the eligibility conditions specified above.

2.2. Conflict of Interest

All bidders shall comply with ITB 5.2.

2.3. Pending Litigation:

All pending litigation and arbitration proceedings, if any, shall be considered as having been resolved against the Bidder for the purpose of qualification. The total value of all such pending litigation and arbitration cases shall not exceed fifty percent (50%) of the Bidder's net worth. For the purpose of this requirement, net worth shall be calculated as the difference between the Bidder's total assets and total liabilities, and the resulting value shall be positive. Failure to comply with this requirement may result in the Bidder being declared non-qualified.

2.4. Financial Requirement

- 2.4.1.** The Bidder shall submit audited financial statements for the last three (3) financial years to demonstrate the current soundness of its financial position. As a minimum requirement, the Bidder's net worth for the most recent financial year, calculated as the difference between total assets and total liabilities, **shall be positive**. The submitted financial statements shall be duly certified by a Chartered Accountant or statutory auditor, as applicable.
- 2.4.2.** The Bidder shall demonstrate a minimum average annual turnover of **₹511.00 Lakhs** (Rupees Five Hundred Eleven Lakhs) calculated as the total value of certified payments received for contracts in progress or

completed during the last three (3) financial years. The following conditions shall apply:

- v. In the case of an individual Bidder or single entity, the Bidder shall independently satisfy the above requirement.
- vi. In case of JV:
 - All partners of the Joint Venture combined shall meet the minimum turnover requirement.
 - Each partner of the Joint Venture shall individually meet at least twenty-five percent (25%) of the required minimum turnover.
 - At least one partner of the Joint Venture shall individually meet not less than fifty percent (50%) of the required minimum turnover.

2.4.3. The Bidder shall demonstrate access to, or availability of, adequate financial resources, such as liquid assets, lines of credit, or other financial means, sufficient to meet the financial requirements for the execution of the Contract.

3. Work Experience

The Bidder shall demonstrate experience in executing similar works to establish its technical capability for undertaking the proposed project. For the purpose of qualification, similar work shall mean works involving construction of infrastructure projects including civil works and supply/installation of equipment related to solid waste management facilities, waste processing plants, municipal infrastructure, or comparable engineering works. The Bidder shall have successfully completed any one of the following during the last seven (5) years:

- i. One (1) similar work with a contract value of not less than ₹300.00 Lakhs, or;
- ii. Two (2) similar works, each with a contract value of not less than ₹150.00 Lakhs, or;
- iii. Three (3) similar works, each with a contract value of not less than ₹75.00 Lakhs.
- iv. In case of JV, the JV as a whole shall meet the experience requirement specified above.

SECTION - IV
GENERAL CONDITIONS OF CONTRACT

1. General

1.1. Definitions.

- (a) The **Accepted Contract Amount** means the amount accepted in the Letter of Award 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 23.1 hereunder.
- (d) **Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid.
- (e) **Compensation Events** are those defined in GCC 41.1 hereunder.
- (f) The **Completion Date** is the date of completion of the Works as certified by the Engineer-In-charge, in accordance with GCC 52.1.
- (g) 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 2.3 below.
- (h) The **Contractor** is the party whose Bid to carry out the Works has been accepted by the Employer.
- (i) The **Contractor's Bid** is the completed bidding document submitted by the Contractor to the Employer.
- (j) The **Contract Price** is the Accepted Contract Amount stated in the Letter of Award and thereafter as adjusted in accordance with the Contract.
- (k) **Days** are calendar days; months are calendar months.
- (l) A **Defect** is any part of the Works not completed in accordance with the Contract.
- (m) The **Defects Liability Certificate** is the certificate issued by Engineer-In-charge upon correction of defects by the Contractor.
- (n) The **Defects Liability Period** is the period calculated from the Completion Date where the Contractor remains responsible for remedying defects.
- (o) **Drawings** include calculations and other information provided or approved by the Engineer-In-charge for the execution of the Contract.
- (p) The **Employer** shall mean the Shillong Municipal Board who is the party who employs the Contractor to carry out the Works.
- (q) **Equipment** is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

- (r) **Force Majeure** means an exceptional event or circumstance: which is beyond a Party's control; which such Party could not reasonably have provided against before entering into the Contract; which, having arisen, such Party could not reasonably have avoided or overcome; and, which is not substantially attributable to the other Party.
- (s) The **Initial Contract Price** is the Contract Price listed in the Employer's Letter of Award.
- (t) 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 **Special Conditions of Contract**. The Intended Completion Date may be revised only by the Engineer-In-charge by issuing an extension of time or an acceleration order.
- (u) **Letter of Award** means the formal acceptance by the Employer of the Bid and denotes the formation of the Contract at the date of acceptance.
- (v) **Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works.
- (w) "**Party**" means the Employer or the Contractor, as the context requires.
- (x) **Plant** is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.
- (y) The **Engineer-in-charge** is the person named in the **Special Conditions of Contract** (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Engineer-In-charge) who is responsible for supervising the execution of the Works and administering the Contract.
- (z) **Retention Money** means the aggregate of all monies retained by the Employer pursuant to GCC 45.1.
- (aa) The **Site** is the area defined as such in the **Special Conditions of Contract**.
- (bb) **Site Investigation Reports** are those that were included in the bidding documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.
- (cc) **Specification** means the Specification of the Works included in the Contract and any modification or addition made or approved by the Engineer-In-charge.
- (dd) The **Start Date** is given in the **Special Conditions of Contract**. 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.
- (ee) 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.
- (ff) **Temporary Works** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.
- (gg) A **Variation** is an instruction given by the Engineer-In-charge which varies the Works.

(hh) The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the **Special Conditions of Contract**.

1.2. In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer-In-charge shall provide instructions clarifying queries about these conditions.

1.3. The documents forming the Contract shall be interpreted in the following order of priority:

- (a) Agreement,
- (b) Letter of Award,
- (c) The Bid Document,
- (d) Special Conditions of Contract,
- (e) General Conditions of Contract,
- (f) Bill of Quantities,
- (g) Drawings,
- (h) Employer's requirement – section 9 of the Bid Document,
- (i) Any Annexures, Drawings, Addenda, and Clarifications issued by the Employer.

1.4. The language of the Contract and the law governing the Contract are stated in the Special Conditions of Contract.

1.5. The Performance Guarantee shall be provided to the Employer no later than the date specified in the Letter of Award and shall be issued in the form of a Bank Guarantee for the amount indicated and valid till the date specified in the Special Conditions of Contract, by a bank acceptable to the Employer.

1.6. The Engineer-in-charge may delegate any of his duties and responsibilities to other people, after notifying the Contractor, and may cancel any delegation after notifying the Contractor.

1.7. 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.

1.8. The Contractor may subcontract parts of the work with the approval of the Engineer-In-charge, but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations.

1.9. The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer. The Contractor shall also provide facilities and services for them as may be required.

- 1.10.**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 Engineer-In-charge. The Engineer-In-charge 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.
- 1.11.**If the Engineer-In-charge asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.
- 1.12.**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
 - b. 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
 - c. 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.
 - d. 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.
- 1.13.**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
- 1.14.**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.
- 1.15.** 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.
- 1.16.**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.

- 1.17.**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 Special Conditions of Contract 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.
- 1.18.** Policies and certificates for insurance shall be delivered by the Contractor for approval by the Employer 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.
- 1.19.** Policies and certificates for insurance shall be delivered by the Contractor for approval by the Employer 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.
- 1.20.** 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.
- 1.21.** Alterations to the terms of an insurance shall not be made without the approval of the Employer.
- 1.22.** Both parties shall comply with any conditions of the insurance policies.
- 1.23.** The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the Special Conditions of Contract, supplemented by any information available to the Bidder.
- 1.24.** The Contractor shall construct and install the Works in accordance with the Specifications and Drawings. The contractor shall also supply with the equipment complying to the specifications indicated in **Section-VII**.
- 1.25.** The Contractor shall commence execution of the Works not later than 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 Engineer-In-charge, and complete them by the Intended Completion Date.

- 1.26.**The Contractor shall be responsible for design of Temporary Works.
- 1.27.**The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Engineer-In-charge, who is to approve them if they comply with the Specifications and Drawings.
- 1.28.**The Engineer-In-charge's approval shall not alter the Contractor's responsibility for design of the Temporary Works.
- 1.29.**The Contractor shall be responsible for the safety of all activities on the Site.
- 1.30.**Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall notify the Engineer-In-charge of such discoveries and carry out the Engineer-In-charge's instructions for dealing with them.
- 1.31.**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 Special Conditions of Contract, the Employer shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.
- 1.32.**The Contractor shall allow the Engineer-In-charge and any person authorized by the Engineer-In-charge 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.
- 1.33.**The Contractor shall carry out all instructions of the Engineer-In-charge which comply with the applicable laws where the Site is located.
- 1.34.**The Adjudicator shall be the Deputy Commissioner Ri Bhoi District Meghalaya.
- 1.35.**If the Contractor believes that a decision taken by the Engineer-In-charge was either outside the authority given to the Engineer-In-charge 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 Engineer-In-charge's decision.
- 1.36.**The Adjudicator shall give a decision in writing within 28 days of receipt of a notification of a dispute.
- 1.37.**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.
- 1.38.**The Contractor shall obtain the local trading licenses as applicable in the state

2. Time Control

- 2.1.** Within the time stated in the Special Conditions of Contract, after the date of the Letter of Award, the Contractor shall submit to the Engineer-In-charge for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works.
- 2.2.** The Engineer-In-charge's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Engineer-In-charge again at any time. A revised Program shall show the effect of Variations and Compensation Events.
- 2.3.** The Engineer-In-charge shall extend the Intended Completion Date with the approval of the Employer 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.
- 2.4.** 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.
- 2.5.** The Engineer-In-charge may require the Contractor or his representatives 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.
- 2.6.** The Engineer-In-charge 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 Engineer-In-charge either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.
- 2.7.** The Contractor shall warn the Engineer-In-charge 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 Engineer-In-charge 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.
- 2.8.** The Contractor shall cooperate with the Engineer-In-charge 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 Engineer-In-charge.

3. Quality Control

- 3.1.** The Engineer-In-charge 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 Engineer-In-charge may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer-In-charge considers to might have a Defect.

- 3.2. If the Engineer-In-charge instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect the Contractor shall pay for the test and any samples.
- 3.3. The Engineer-In-charge 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 Special Conditions of Contract. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 3.4. Every time notice of a Defect is given; the Contractor shall correct the notified Defect within the length of time specified by the Engineer-In-charge's notice.
- 3.5. If the Contractor has not corrected a Defect within the time specified in the Engineer-In-charge's notice, the Engineer-In-charge shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.

4. Cost Control

- 4.1. 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. All measurements shall be recorded in the Computerized Measurement Book.
- 4.2. Dealing with variation in quantity of work executed: -
 - a. 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 Engineer-In-charge shall adjust the rate to allow for the change.
 - b. The Engineer-In-charge shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 5 percent, except with the prior approval of the Employer.
 - c. If requested by the Engineer-In-charge, the Contractor shall provide the Engineer-In-charge with a detailed cost breakdown of any rate in the Bill of Quantities.
- 4.3. The Engineer-In-charge with the approval of the Employer may order a Variation in the works and make a change to the Contract Price, which shall be based on the Engineer-In-charge's own forecast of the effects of the Variation on the Contractor's costs.
- 4.4. The Engineer-In-charge with the approval of the Employer may order a Variation in the works and make a change to the Contract Price, which shall be

based on the Engineer-In-charge's own forecast of the effects of the Variation on the Contractor's costs.

- 4.5.** The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.
- 4.6.** If the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Engineer-In-charge, the quantity of work above the limit stated in GCC 36.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the nature of the work in the Variation does not correspond with items in the Bill of Quantities, the rates for the relevant items of work shall be based on the Meghalaya PWD SOR in-use at the time of execution of the item of work or if the items of work are not covered in the SOR a market rate analysis would be carried out by the Engineer-in-charge.
- 4.7.** The Contractor shall submit to the Engineer-In-charge monthly statements of the estimated value of the work executed less the cumulative amount certified previously.
- 4.8.** The Engineer-In-charge shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.
- 4.9.** The value of work executed shall be determined by the Engineer-In-charge. The value of work executed shall comprise the value of the quantities of work in the Bill of Quantities that have been completed.
- 4.10.** The value of work executed shall include the valuation of Variations and Compensation Events.
- 4.11.** The Engineer-In-charge 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.
- 4.12.** Payments shall be adjusted for deductions for advance payments and retention. The Employer shall pay the Contractor the amounts certified by the Engineer-In-charge within 60 days of the date of each certificate.
- 4.13.** Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions of currencies comprising the Contract Price.
- 4.14.** 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 Engineer-In-charge shall recommend whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

- 4.15.**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 Engineer-In-charge, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Engineer-In-charge shall adjust the Contract Price based on the Engineer-In-charge's own forecast. The Engineer-In-charge shall assume that the Contractor shall react competently and promptly to the event.
- 4.16.**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 Engineer-In-charge.
- 4.17.**GST, Labour Cess, royalties and other taxes will be added or deducted from every payment at the rate which is prevalent at the time of making the payment
- 4.18.**The currency of the payments shall be as specified in the Special Conditions of Contract.
- 4.19.**The Employer shall retain from each payment due to the Contractor the proportion stated in the Special Conditions of Contract until Completion of the whole of the Works.
- 4.20.**The retention money shall be released to the Contractor at the end of the Defects Liability Period provided all the defects have been satisfactorily rectified by the Contractor.
- 4.21.**The Contractor shall pay Liquidated Damages to the Employer at the rate per day stated in the Special Conditions of Contract 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 Special Conditions of Contract. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.
- 4.22.**If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer-In-charge shall adjust any overpayment of liquidated damages.
- 4.23.**The Employer shall make advance payment to the Contractor of the amounts stated in the Special Conditions of Contract, 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.
- 4.24.**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 Engineer-In-charge.

4.25. The advance payment shall be recovered at a rate of minimum of 10% (ten percent) of sum arrived by multiplying the Quantities executed during the period for with the Payment Certificate relates with the respective rates, from the first and every subsequent Payment Certificates until the full advance paid has been recovered.

4.26. Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Liability Period shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

5. Finishing the Contract

5.1. "As built" Drawings and/or operating and maintenance manuals as required, shall be supplied by the Contractor by the dates stated in the Special Conditions of Contract.

5.2. If the Contractor does not supply the Drawings and/or manuals by the dates stated in the Special Conditions of Contract the Employer shall withhold the final payment due to the Contractor.

5.3. The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract

5.4. 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 Engineer-In-charge;
- (b) the Engineer-In-charge instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 28 days;
- (c) the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- (d) a payment certified by the Engineer-In-charge is not paid by the Employer to the Contractor within 180 days of the date of the Engineer-In-charge's certificate;
- (e) the Engineer-In-charge 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 Engineer-In-charge;
- (f) the Contractor does not maintain a Security, which is required; and
- (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 Special Conditions of Contract.

(h) if the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract, pursuant to GCC 5.8.

5.5. When either party to the Contract gives notice of a breach of Contract to the Adjudicator, the Adjudicator shall decide whether the breach is fundamental or not.

5.6. Notwithstanding the above, the Employer may terminate the Contract for convenience.

5.7. 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.

5.8. Contractors and Subcontractors are expected to observe the highest standard of ethics during the procurement and execution of contracts with SMB. The following practices are deemed to be corrupt and fraudulent practices.

- i. "Corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;
- ii. "Fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- iii. "Coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- iv. "Collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party;

5.9. If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer-In-charge 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 indicated in the Special Conditions of Contract. 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.

5.10. If the Contract is terminated for the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Engineer-In-charge shall issue a certificate for the value of the work done, Materials ordered and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

5.11. 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.

5.12. 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 Engineer-In-charge 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.

SECTION - V
SPECIAL CONDITIONS OF CONTRACT

1. General	
GCC 1.1 (p)	The Employer is the Shillong Municipal Board represented by its Chief Executive Officer.
GCC 1.1 (t)	The Intended Completion Date for the whole of the Works shall be 12 months from the date as mentioned in Notice to Proceed.
GCCs 1.1 (y) & 4.1	The Engineer-in-charge is the Executive Engineer Shillong Municipal Board.
GCC 1.1 (aa)	The Site is located at Umshangling Nongpoh, Meghalaya as defined in drawings.
GCC 1.1 (hh)	The work shall mean the “<i>Construction, Supply, Installation and Commissioning of Solid Waste Management Facility at Umshangling for Nongpoh Town Committee, Ri-Bhoi District, Meghalaya.</i>”
GCC 1.4	The language of the contract is English The laws that apply to the Contract are the laws of India and Laws of Meghalaya State. The bidder should be familiar with the tax laws of the country. Any dispute with regards to the Contract shall be under the jurisdiction of the Meghalaya High Court
GCC 1.1 (dd)	The Start Date(s) shall be specified in the Notice to Proceed or 15 days from the date of signing the Contract Agreement whichever is earlier.
GCC 1.5	The Performance Guarantee amount is 3% of contract value and shall be valid up to a date which is 30 days later than the Intended Date of Completion.
2. Time Control	
GCC 2.1	The Contractor shall submit a Program for the works within 15 (Fifteen) days from the date of signing of agreement.
3. Quality Control	
GCC 3.3	The Defects Liability Period is: 365 days from the date of completion.
4. Cost Control	
GCC 4.18	The currency of the Employer’s country is: <u>Indian Rupees</u>
GCC 4.19	The proportion of payments retained is: 10%.
GCC 4.21	The liquidated damages for the whole of the works are 0.05% (point zero five per cent) per day. The maximum amount of

	liquidated damages for the whole of the Works is 10% (ten percent) of the final Contract Price.
GCC 4.23	The Advance Payments shall be: 10 % of the Initial contract value and shall be paid to the Contractor no later than 30 days after receiving the necessary Bank Guarantee, duly confirmed from the issuing bank as security valid for up to the expected date of completion of works. The bank guarantee shall be from nationalized or scheduled bank.
5. Finishing the Contract	
GCC 5.1	The date by which As Built Drawings and operating and maintenance manuals are required is within one month from the date of completion of the work or along with the submission of the final invoice of the contractor, whichever is earlier.
GCC 5.9	The percentage to apply to the value of the work not completed, representing the Employer's cost for completing the Works, is 130% of the value of the incomplete work.

SECTION - VI
SCHEDULE OF WORKS AND SUPPLY

Item	Description	Delivery Schedule (Duration)	Quantity
1	Construction and development of the Solid Waste Management Facility at Umshangling, Nongpoh, on the Site specified in the Contract Data, including all associated civil infrastructure, utilities, waste processing facilities, and installation of machinery and equipment, in accordance with the specifications, standards, drawings, and requirements	12 Months	Details as per BOQ Section-IX

SECTION – VII
TECHNICAL SPECIFICATION

1. Codes and Standards

All machinery, equipment, civil works, and electrical installations supplied and executed under this contract shall comply with the relevant Indian Standards (IS) and applicable statutory regulations. Where Indian Standards are not available, equivalent ISO / BS / ASTM or other internationally accepted standards shall be followed.

The equipment and infrastructure shall be designed, manufactured, tested, constructed, and supplied in accordance with good engineering practices and shall be suitable for continuous operation in Municipal Solid Waste (MSW) processing facilities.

The bidder shall ensure that:

- All equipment supplied shall be new, unused, and of the latest design.
- The equipment shall be manufactured using high-quality materials suitable for MSW operations.
- All electrical systems shall comply with relevant electrical safety standards and statutory regulations.
- All equipment shall be provided with adequate safety guards, protection systems, and emergency stop mechanisms.

All civil works and electrical works executed under this contract shall be carried out in accordance with the latest applicable Indian Standards, relevant codes of practice, and statutory requirements issued by the competent authorities.

This includes compliance with standards related to structural design, construction practices, electrical installations, earthing systems, wiring systems, and safety requirements, such as but not limited to standards similar to IS 732, IS 3043, and other relevant codes and regulations applicable in India.

All works shall also comply with applicable local regulations, safety requirements, and good engineering practices to ensure safety, durability, and reliable operation of the facility.

2. Specification

2.1. Civil and Electrical works:

All civil and electrical works under this contract shall be carried out in accordance with approved drawings, relevant codes and standards, and established engineering practices, and shall conform to the specifications and guidelines followed by the Public Works Department (PWD), Government of Meghalaya, or other relevant competent authorities. The contractor shall ensure that all materials, workmanship, and installation practices meet the required quality standards to ensure safety, durability, and reliable operation of the Solid Waste Management Facility.

2.2. Machineries and Equipment:

The general requirements and minimum technical specifications are provided in the following tables. Bidders may propose equivalent or superior equipment

meeting the minimum performance requirements.

2.2.1. Plastic Waste Shredder

Parameter	Minimum Requirement
Machine Type	Plastic Waste Shredder
Number of Blades	Minimum 21 blades
Input Speed	Approx. 25 rpm
Machine Weight	Approx. 130 kg
Machine Dimensions	Approx. 600 × 400 × 730 mm
Body Construction	Heavy duty steel fabricated body
Blade Material	Hardened alloy steel
Motor Drive	Electric motor driven
Control System	Electrical control panel
Application	Shredding plastic waste and recyclables
Safety Features	Emergency stop and safety guards

The machine shall be suitable for size reduction of plastic waste and recyclable materials before baling or further recycling processes.

2.2.2. Hydraulic Baling Machine

Parameter	Minimum Requirement
Machine Type	Vertical Hydraulic Baler
Bale Size	Approx. 80 × 40 × 80 cm
Motor Power	Minimum 5.5 kW
Production Capacity	Approx. 8 bales per hour
Bale Weight	Approx. 130 kg per bale
Throughput Capacity	Approx. 1000 kg per hour
Hydraulic System	Heavy duty hydraulic cylinder system
Machine Structure	Welded steel construction
Control System	Electrical control panel
Application	Baling plastics, paper, cardboard and recyclables

The baler shall be suitable for compacting recyclable materials recovered from the Material Recovery Facility for storage and transportation.

2.2.3. Sorting Conveyor with Hopper

Parameter	Minimum Requirement
Machine Type	Sorting Conveyor with Hopper
Hopper Mouth Width	Approx. 2.5 m
Hopper Depth	Approx. 1.5 m
Dump Height	Approx. 2.4 m
Feeder Bed Length	Approx. 3.0 – 3.5 m
Conveyor Belt Width	Approx. 1.0 m
Total Conveyor Belt Length	Approx. ~20 m
Conveyor Structure	Mild steel structural frame
Belt Material	Heavy duty rubber conveyor belt

Drive System	Electric motor driven
Application	Manual segregation of recyclable materials
Sorting Positions	Multiple sorting stations along conveyor

The sorting conveyor shall be suitable for manual segregation of municipal solid waste at the Material Recovery Facility.

2.2.4. Backhoe Loader

Parameter	Minimum Requirement
Engine Power	Minimum 74 HP
Engine Type	Turbocharged diesel engine
Drive	Four Wheel Drive
Loader Bucket Capacity	Approx. 1.0 – 1.2 m ³
Backhoe Bucket Capacity	Approx. 0.25 m ³
Maximum Dig Depth	Approx. 4.7 m
Maximum Reach at Ground Level	Approx. 6.5 m
Operating Weight	Approx. 7500 – 8000 kg
Steering	Power steering
Transmission	Synchro shuttle transmission
Braking System	Oil immersed multi-disc brakes
Cabin	ROPS certified operator cabin

The backhoe loader shall be used for loading, unloading, material handling, and site maintenance activities within the waste processing facility.

2.2.5. Household Waste Segregation Bin

Parameter	Minimum Requirement
Type	Household Waste Segregation Bin
Capacity	20 Litres
Color	Deep Blue and Bright Green (generally used for dry waste or general-purpose storage)
Material	High-Density Polyethylene (HDPE)
Material Quality	Strong, impact-resistant, and durable plastic suitable for daily household use
Conformity	Conforming to IS 7328 or latest applicable standard
Thickness	Minimum 3 – 5 mm
Finish	Smooth and glossy surface for easy cleaning and maintenance
Lid	Snug-fitting lid with raised handle for easy opening
Durability	Suitable for domestic use including waste segregation, storage, and cleaning applications
Manufacturing	Injection moulded construction with uniform thickness
Weather Resistance	UV resistant and suitable for outdoor exposure
Handling	Lightweight and easy to handle

3. Operation and Maintenance Manual

Before commissioning of the equipment supplied under this contract, the supplier shall submit a copy of the operation and maintenance manual in English language.

The manual shall include:

- Technical specifications of equipment
- Performance parameters
- Instructions for operation and servicing
- Lubrication schedule
- Spare parts catalogue
- Exploded drawings of major components

4. Guarantee

The supplier shall guarantee that all machinery supplied under this contract is free from defects in material and workmanship. The equipment shall carry a minimum warranty period of 12 months from the date of commissioning. So any defective part found during the warranty period shall be repaired or replaced by the supplier free of cost.

5. Quality Assurance Plan

The bidder shall ensure that all works, materials used, supplies and installations in this contract meets the specifications declared in the bid and shall conform to standards relevant to each item.

5.1. Civil Works:

Materials to be used in the work shall comply with the specifications mentioned on the Drawings and shall conform to relevant Indian Standards, or to the requirements specified by the Engineer. Manufacturer's Test Certificate should be provided with every consignment of Cement, Steel for Reinforcement and Structural Steel deployed to the site.

All steel shall be procured from original manufacturers and no re-rolled steel shall be incorporated in the work. Only new steel shall be delivered to the site and every bar shall be inspected before assembling on the work and defective, brittle or burnt bar shall be discarded. Cracked ends of bars shall be discarded. Any lot of construction material including structural steel that does not conform to standards shall not be used and shall be removed from the site.

5.2. Sampling for strength of concrete:

Compression tests of concrete cubes shall be made as per IS: 516 on 15 cm cubes. At least 6 test cubes of each class of concrete shall be taken for every 100 m³ of concrete or part thereof. Such samples shall be drawn on each day for each type of concrete. Of each set of 6 cubes, three shall be tested at 7 days age and three at 28 days age. The laboratory test results shall be tabulated and furnished to Engineer. Engineer will pass the concrete if average strength of the specimens tested is not less than the strength specified, subject to the condition that only one out of three consecutive tests may give a value less than the specified strength but this shall not be less than 90% of the specified strength.

5.3. Machineries and Equipment.

The bidder shall ensure that all machinery supplied under this Contract meets the minimum technical specifications and performance parameters declared in the bid. All equipment shall be new, unused, and manufactured according to accepted engineering practices and applicable standards.

After installation, each machine shall be tested under actual operating conditions to verify that it meets the capacity and performance declared by the bidder. If any machine fails to meet the declared performance during testing, the bidder shall repair, modify, or replace the equipment at its own cost until the required performance is achieved.

Even after successful commissioning, the machinery shall be observed during operation to ensure reliable performance. If the equipment fails to perform satisfactorily during the warranty / guarantee period, the Contractor shall rectify or replace the equipment without any additional cost to the Employer. No machinery shall be considered finally accepted until it performs satisfactorily and meets the declared specifications.

6. Manufacturer's Test Certificate

The Supplier shall submit Manufacturer's Test Certificates for all machinery and equipment supplied under this Contract.

The certificates shall include:

- material test certificates
- performance test certificates
- factory inspection reports
- quality compliance certificates

These certificates shall confirm that the equipment has been manufactured, inspected, and tested in accordance with the applicable standards and specifications. The test certificates shall be submitted to the Employer for review and approval prior to dispatch of the equipment.

7. Approval Drawing

The Supplier shall prepare and submit General Arrangement (GA) drawings, fabrication drawings, and technical drawings of all machinery and equipment proposed to be supplied under this Contract. These drawings shall be submitted to the Employer for review and approval prior to commencement of fabrication or procurement. The Supplier shall ensure that the equipment is fabricated and supplied strictly in accordance with the approved drawings and specifications. No manufacturing or procurement of equipment shall commence until the drawings have been reviewed and approved by the Employer.

SECTION – VIII
BID AND CONTRACT FORMS

Form – 1
Format for Letter of Technical Bid
(To be printed in letterhead of the bidder)

Date: _____

To:
The Chief Executive Officer,
Shillong Municipal Board
Shillong

Ref: NIT No: SMB/PW/NPH_SWM/32/2025-26/16 dated: 11/03/26

I/We, the undersigned, declare that:

- (a) I/We have examined and have no reservations to the Bidding Document, including Addenda No.: _____
- (b) I/We offer to execute, in conformity with the Bidding Documents, the following Works:
“Construction, Supply, Installation and Commissioning of the Solid Waste Management Facility at Umshangling for Nongpoh Town, Ri-Bhoi District, Meghalaya.”
- (c) Our Bid shall be valid for a period of 120 days from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) If our Bid is accepted, we commit to obtain a Performance Guarantee in the amount of 3 percent of the Contract Price for the due performance of the Contract;
- (e) Our firm, including any subcontractors or suppliers for any part of the Contract, are registered and incorporated in India and are eligible under the terms of the Bidding Document;
- (f) We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Document;
- (g) We understand that this Bid, together with your written acceptance thereof included in your Notification of Award, shall constitute a binding contract between us, until a formal Contract is prepared and executed;
- (h) We agree that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Name of _____

Designation _____

Signature _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

Form – 2

Format for Letter of Financial Bid
(To be printed in letterhead of the bidder)

Date: _____

To,

The Chief Executive Officer,
Shillong Municipal Board,
Shillong – 793001, Meghalaya.

Ref: NIT No: SMB/PW/NPH_SWM/32/2025-26/16 dated: 11/03/26

We, the undersigned, declare that:

1. We have examined and have no reservations to the Bidding Document, including any Addenda issued.
2. We offer to execute the Works in conformity with the Bidding Document, including construction, supply, installation and commissioning of the Solid Waste Management Facility at Umshangling for Nongpoh Town Committee, Ri-Bhoi District, Meghalaya, including all civil works, waste processing infrastructure, machinery and equipment, utilities, and associated works as specified in the Bidding Documents.
3. The Bid Price offered by us excluding discounts is:

_____ the Engineer's Estimate.
(at par or _ % above)

Total Bid Price (in figures): INR _____

Total Bid Price (in words): INR _____

4. We agree to permit the Shillong Municipal Board or its authorized representatives to inspect our accounts and records relating to the bid submission and to have them audited by auditors appointed by the authority.

Name of Bidder: _____

In the capacity of: _____

Signed: _____

Duly authorized to sign the Bid for and on behalf of: _____

Date: _____

Seal: _____

Format for Bid Security

Bank Guarantee

.....**Bank's Name, and Address of Issuing Branch or Office**.....

Beneficiary: *Chief Executive Officer, Shillong Municipal Board*
Bishop Cotton Road, Shillong-793001, Meghalaya.

Date:

Bid Security No.:

We have been informed that**name of the Bidder**..... (Hereinafter called "the Bidder") has submitted to you its bid dated (Hereinafter called "the Bid") for the execution of**name of contract**..... under NIT No: SMB/PW/NPH_SWM/32/2025-26/16 dated: 11/03/26

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we**name of Bank**..... hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of.....**amount in figures** (**amount in words**.....) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- a. withdraws its Bid during the period of bid validity specified in the Letter of Bid or
- b. did not sign the Contract Agreement in accordance with the provisions of the Bid Document;
- c. did not furnish the required Performance Security within the specified time; or
- d. did not accept the arithmetical corrections made during the bid evaluation process.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the Contract Agreement signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and (b) if the Bidder is not the successful Bidder, upon (i) our receipt of a copy your notification to the Bidder of the name of the successful Bidder; or (ii) after the expiration of the Bidder's bid, whichever is earlier.

..... **Bank's seal and authorized signature(s)**

Form - 4: Technical Proposal

Note: The Bidder's shall submit the technical proposal in accordance to ITB 9.1.5 and shall include but not limited to the following.

- i. A detailed description of the proposed methodology including the work schedule for the execution of civil works and infrastructure development at the Solid Waste Management Facility, including site preparation, construction of civil structures, and installation of utilities.
- ii. Details of the machinery, tools, and equipment proposed to be deployed for the project, including the machineries and equipment to be supplied and installed for the proposed facility:
- iii. The Bidder shall demonstrate that the proposed equipment meets the minimum technical specifications specified in the Bidding Document.

Form – 5

Bidders Qualification

To establish its qualifications to perform the contract in accordance with Section 3 (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

5.1. Bidder’s Information Sheet

Bidder’s Information	
Bidder’s legal name	
In case of JV, legal name of each partner	
Bidder’s year of constitution	
Bidder’s legal address	
Bidder’s authorized representative (name, address, telephone numbers, fax numbers, e-mail address)	
Attached are copies of the following original documents. <input type="checkbox"/> In case of a single entity: Certificate of Incorporation / Registration of the firm. <input type="checkbox"/> Power of Attorney or other Authorization to represent the firm or JV/Consortium. <input type="checkbox"/> In case of JV/Consortium: Letter of Intent to form JV or JV Agreement. <input type="checkbox"/> In case of a government-owned entity: Relevant documents establishing legal and financial autonomy.	

5.2. JV Information Sheet

Each member of a JV must fill in this form

JV / Specialist Subcontractor Information	
Bidder's legal name	
JV Partner's or Subcontractor's legal name	
JV Partner's or Subcontractor's year of constitution	
JV Partner's or Subcontractor's legal address in country of constitution	
JV Partner's or Subcontractor's authorized representative information	(name, address, telephone numbers, fax numbers, e-mail address)
<p>Attached are copies of the following original documents.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Certificate of Incorporation / Registration of the firm <input type="checkbox"/> Authorization to Represent the Firm (e.g., Power of Attorney or Board Resolution) naming the individual authorized to sign the Bid and represent the Bidder in all matters related to this procurement. <input type="checkbox"/> In the case of government-owned entity, documents establishing legal and financial autonomy and compliance with commercial law and is not a dependent agency of the Purchaser. 	

5.3. Pending Litigation

Each Bidder or member of a JV must fill in this form

Pending Litigation			
<input type="checkbox"/> No pending litigation <input type="checkbox"/> Below is a description of all pending litigation involving the bidder (or each JV member)			
Year	Matter in Dispute	Value of Pending Claim in Indian Rupees	Value of Pending Claim as a Percentage of Net Worth
2022-2023			
2023-2024			
2024-2025			

5.4. Financial Situation

Each Bidder or member of a JV must fill in this form

	Financial Data for Previous 3 Years [Indian Rupees]		
	2022-2023	2023-2024	2024-2025
1.Total Assets			
2. Current Assets			
3. Total Liabilities			
4. Current Liabilities			
5.Profits Before Taxes			
6.Profits After Taxes			
7.Net Worth [= 1 – 3]			
8.Working Capital [= 2 - 4]			
9. Return on Equity [= 5 / 7 of prior year]			
<p><input type="checkbox"/> Attached are copies of the audited balance sheets, including all related notes, and income statements for the last three years, as indicated above, complying with the following conditions.</p> <ul style="list-style-type: none"> • All such documents reflect the financial situation of the Bidder or partner to a JV, and not sister or parent companies. • Historic financial statements must be audited by a certified accountant. • Historic financial statements must be complete, including all notes to the financial statements. • Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted). 			

5.5. Average Annual Turnover

Each Bidder or member of a JV must fill in this form

Annual Turnover Data for the Last 3 Years				
Year	Amount (Indian Rupees)			
	Single Entity	In Case of JV		
		Lead Partner	Partner 2	Partner 3
2022-2023				
2023-2024				
2024-2025				
Average Annual Turnover				

5.6. Similar Work Experience

Each Bidder or member of a JV must fill in this form

General Supply of Plant and Equipment Experience				
Sl no.	Name of Work	Year	Amount	In case of JV, Role of Bidder

Form – 6
Format for Letter of Award
(To be printed in the letterhead of SMB)

Date: _____

To:

Sub: Construction, Supply, Installation and Commissioning of the Solid Waste Management Facility at Umshangling for Nongpoh Town, Ri-Bhoi District, Meghalaya.

Contract No. - _____

Ref: Your bid Dated _____

Sir/Madam,

With reference to the subject cited above, I am pleased to inform you that Bid Price offered by you for an amount of Rs. _____ (Rupees _____ only) for the work “Construction, Supply, Installation and Commissioning of the Solid Waste Management Facility at Umshangling for Nongpoh Town, Ri-Bhoi District, Meghalaya” has been accepted, subject to fulfilling all the terms and conditions stipulated in the tender documents.

As per the conditions set forth in the bid documents, you are required to:

- (a) Accept the Letter of Award by returning a signed copy of the same within 7 (seven) days from the date of issue as a token of acceptance of the Contract.
- (b) Furnish the Performance Guarantee by way of Bank Guarantee in favour of the Chief Executive Officer, Shillong Municipal Board, amounting to 3% of the Contract Price within fifteen days from the date of receipt of this Letter of Award.
- (c) Execute the Contract Agreement within twenty-one (21) days from the date of receipt of this Letter of Award.
- (d) Commence the work within fifteen (15) days from the date of execution of the Contract Agreement or as indicated in the Notice to Proceed, whichever is earlier and complete the works within the period of twelve (12) months.

You are requested to take note of the events/conditions specified in the bid documents and initiate appropriate action at the earliest to avoid default of the contract on your part.

Yours faithfully,

Chief Executive Officer
Shillong Municipal Board

Form - 7
Format for Performance Security

.....**Bank's Name, and Address of Issuing Branch or Office**.....

Beneficiary: *Chief Executive Officer, Shillong Municipal Board*

Bishop Cotton Road, Shillong-793001, Meghalaya

Date:

Performance Guarantee No.:

We have been informed that*name of the Contractor*..... (hereinafter called "the Contractor") has entered into Contract No. *reference number of the Contract*..... *dated* with you, for the execution of *name of contract* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we*name of the Bank*..... hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of*name of the currency and amount in figures*..... (*.....amount in words.....*) such sum being payable in the proportions of which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall be valid till the *date* and any demand for payment under it must be received by us at this office on or before that date.

.....
Seal of Bank and Signature(s)

Form – 8
Format for Contract Agreement
(To be printed on Rs. 100 Non-Judicial Stamp Paper)

Contract No. _____

THIS AGREEMENT made the _____ day of _____, _____, between the Shillong Municipal Board, having its office at Bishop Cotton Road, Shillong – 793001, Meghalaya (hereinafter referred to as “the Employer”), of the one part, and _____ having its registered office at _____ (hereinafter referred to as “the Contractor”), of the other part:

WHEREAS the Employer invited bids for the execution of the work, namely:

“Construction, Supply, Installation and Commissioning of the Solid Waste Management Facility at Umshangling for Nongpoh Town, Ri-Bhoi District, Meghalaya.”

and has accepted the Bid submitted by the Contractor for execution of the said works in the total sum of INR. _____ (Indian Rupees _____ only) (hereinafter referred to as “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Contract referred to.

The following documents shall be deemed to form and be read and construed as part of this Agreement, namely:

- (a) Letter of Award,
- (b) The Bid Document,
- (c) Special Conditions of Contract,
- (d) General Conditions of Contract,
- (e) Bill of Quantities,
- (f) Drawings,
- (g) Employer’s requirement – section 9 of the Bid Document
- (h) Any Annexures, Drawings, Addenda, and Clarifications issued by the Employer.

In the event of any discrepancy or inconsistency within the Contract documents, the documents shall prevail in the order listed above.

In consideration of the payments to be made by the Employer to the Contractor under this Agreement, the Contractor hereby covenants with the Employer to execute and complete the Works, including supply, installation and commissioning of the Solid Waste Management

Facility at Umshangling Nongpoh and to remedy any defects therein, in full conformity with the provisions, specifications, and conditions of the Contract.

The Employer hereby covenants to pay the Contractor, in consideration of the execution and completion of the Works and the remedying of defects, the Contract Price or such other sum as may become payable under the provisions of the Contract, in the manner and at the times prescribed therein.

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 first written above.

Signed by _____
(for and on behalf of the Employer)

Shillong Municipal Board

Signed by _____
(for and on behalf of the Contractor)

Form – 9
Format for Advance Payment Security

Date: _____

To:

Chief Executive Officer
Shillong Municipal Board
Bishop Cotton Road, Shillong – 793001
Meghalaya, India

Ref No.: Invitation for Bid No. SMB/PW/46/2025-26/07

In accordance with the payment provisions included in the Contract relating to advance payments, _____ (hereinafter called “the Contractor”) shall deposit with the Employer a security in the form of a Bank Guarantee to guarantee the proper and faithful performance of the obligations imposed under the said Contract for:

“Construction, Supply, Installation and Commissioning of the Solid Waste Management Facility at Umshangling for Nongpoh Town Committee, Ri-Bhoi District, Meghalaya”

The amount of the guarantee shall be Rs. _____
(Indian Rupees _____ only).

We, the undersigned, _____, a banking institution legally incorporated and having its registered office at _____ (hereinafter called “the Guarantor”), at the request of the Contractor, hereby irrevocably and unconditionally guarantee as primary obligor and not merely as surety, the payment to the Employer, upon its first written demand, without any right of objection or defense on our part and without the Employer having to first claim against the Contractor, up to an amount not exceeding:

Rs. _____
(Indian Rupees _____ only).

This Guarantee shall remain valid and in full effect from the date the advance payment is released to the Contractor under the Contract until such time as the advance payment has been fully recovered or adjusted in accordance with the provisions of the Contract, but not later than _____.

Name: _____

In the capacity of: _____

Signed: _____

Duly authorized to sign the security for and on behalf of:

Date: _____

**SECTION - IX
BILL OF QUANTITIES (BOQ)**

**ABSTRACT ESTIMATE FOR SOLID WASTE MANAGEMENT FACILITY AT
UMSHANGLING, NONGPOH**

Sl. no	Particulars	Amount	Remarks
1	Storage shed for recovered dry waste	Rs. 17,00,000.00	120 Sqm Area
2	Conversion of existing windrow shed into material sorting shed	Rs. 26,00,000.00	1130 Sqm Area
3	RCC Counterfort Retaining Wall	Rs. 1,30,98,100.00	8.65 M Ht - 36.8 m & 10.7 M Ht -41.4 m
4	Approach Road	Rs. 94,54,000.00	1 KM Approach & 200 M internal
5	Boundary Wall And Main Gate	Rs. 44,77,000.00	600 M
6	Electrical Works	Rs. 29,89,600.00	
7	RCC Drain	Rs. 32,01,500.00	500 x 500 - 300 M & 250 x 250- 300 M
8	Equipment & Machineries	Rs. 1,25,58,003.00	Including of HHs bins
9	Security Guard Room	Rs. 8,23,000.00	
10	Water Supply & Storage, Vehicle Washing Area	Rs. 2,82,900.00	
Total Cost		Rs. 5,11,84,103.00	

SECTION - IX
BILL OF QUANTITIES (BOQ)

Rate as per Govt.Meghalaya(MPWD) Schedule of Rate for Building Work 2021-2022 for East Khasi Hill Distrist.

Sl. no	SOR Code	Particulars	Nos	L	B	H	Area Content	Amount
1	2.1	Earthwork in excavation by manual means up to a depth of 2m below the existing ground level for foundation trenches of foundations, footings of column/ walls, retaining walls, septic tank etc. including bailing out water where necessary and removal of surplus earth with all lead and lifts as directed and specified for the following classification of						
	b	In ordinary rock (soft rock/ medium rock/ hard shale)						
		Post	16	1	0.60	0.60	0.75	4.32
		Plinth wall	2	7	2.40	0.45	0.75	11.34
			8	1	4.40	0.30	0.45	4.75
		Floor	1	1	21.00	4.00	0.30	
		Gap between Compost plant and MRF Shed	1	1	21.00	0.75	0.30	4.73
							Total=	25.14
							@	Rs. 414.00
								Rs. 10,407.96
								Per Cum
2	2.6	Earthwork in filling (excluding rock) in trenches, plinth, sides of foundation etc in layers not exceeding 20 cm thick including breaking of clods, consolidating each layer by ramming and watering, lead upto 50 m and lift upto 1.5 m .						
	a	With available excavated earth						
		Filling	1	1	21.00	2.00	0.50	21.00
							Total=	21.00
							@	Rs. 141.00
								Rs. 2,961.00
								Per Cum
3	12.5	Providing soling with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete						
	b	Stone soling						
	(i)	100mm						
		Post	16	1	0.60	0.60	-	5.76
		Floor	1	1	21.00	5.00	-	105.00
		Gap between Compost plant and MRF Shed	1	1	21.00	0.75	-	15.75
							Total =	126.51

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount	
							@	Rs. 415.00	Rs. 52,501.65	
								Per Sqm		
4	5.1	Plain cement concrete works in foundation bed for footing steps, walls, brick works etc below plinth level as directed and specified including dewatering if necessary, and curing complete (shuttering where necessary shall be measured and paid separately).								
	b	1:3:6 (1 Cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size)								
		Post	16	1	0.60	0.60	0.10	0.58		
		Plinth wall	2	7	2.40	0.45	0.10	1.51		
			8	1	4.40	0.45	0.10	1.58		
		Floor	1	1	21.00	5.00	0.10	10.50		
		Gap between Compost plant and MRF Shed	1	1	21.00	0.75	0.10	1.58		
							Total =	15.75		
							@	Rs. 7,601.00	Rs. 1,19,715.75	
								Per Cum		
5	6.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement- All work up to plinth level:								
	a	M15 or Prop. 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size)								
		Post	16	1	0.60	0.60	0.70	4.03		
							Total =	4.03		
							@	Rs. 8,658.00	Rs. 34,891.74	
								Per Cum		
6	4.16	SHUTTERING/ FORMWORK Centering and shuttering including strutting, propping etc. and removal of form for all heights complete and as directed by Engineer in charge. Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12 mm thick								
		Post	16	4	0.60	0.70	-	26.88		
							Total =	26.88		
							@	Rs. 595.00	Rs. 15,993.60	
								Per Sqm		

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount
7	8.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement: 6 coarse sand:12 graded stone aggregate 20 mm nominal size) upto plinth level with:							
	a.	Cement mortar 1:6 (1 cement : 6 coarse sand).							
		Plinth wall	2	7	2.40	0.45	0.60	9.07	
			8	1	4.40	0.30	0.45	4.75	
							Total =	13.82	
							@	Rs. 6,098.00	Rs. 84,274.36
								Per Cum	
8	7.9	Half brick masonry with common burnt clay (non modular) 1st class bricks in foundations and in plinth: b). Cement mortar 1:4 (1 cement: 4 coarse sand)							
		Wall - Back	1	1	21.00	-	1.00	21.00	
		Sides	2	1	5.00	-	1.00	10.00	
		Partition wall for scrap storage	6	1	3.00	-	1.00	18.00	
							Total =	49.00	
							@	Rs. 1,203.00	Rs. 58,947.00
								Per Sqm	
9	15.3	20 mm cement plaster of mix: 1:4 (1 cement: 4 fine sand)							
		Wall - Back	1	2	21.00	-	1.10	46.20	
		Sides	2	2	5.00	-	1.10	22.00	
		Partition wall for scrap storage	6	2	3.00	-	1.10	39.60	
							Total =	107.80	
							@	Rs. 331.00	Rs. 35,681.80
								Per Sqm	
10	11.2	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete							
		Post - 50x50mm Sq.pipe	16	1	4.40	@	4.98	350.59	
		Back bracer- 50x25mm rec.pipe	3	1	21.00	@	3.24	204.12	
		Side	3	8	5.00	@	3.24	388.80	
		Vertical	2	8	3.50	@	3.24	181.44	
		Truss							

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount
		Rafter - 40x40mm Sq.pipe	8	1	12.90	@	3.49	360.17	
		Strut - 32x32mm Sq. pipe	8	1	7.60	@	2.69	163.55	
		Purlin - 40x40mm Sq. pipe	8	1	23.00	@	3.49	642.16	
		Scrap partition front side screen							
		25x25mm Sq. pipe	7	4	3.00	@	1.69	141.96	
			7	6	0.50	@	1.69	35.49	
		Channel for front side screen	7	4	1.50	@	1.00	42.00	
							Total =	2510.28	
							@	Rs. 123.00	Rs. 3,08,764.44
								Per Kgs	
11	13.18	<p>Providing & fixing UV stabilized fibreglass reinforced plastic sheet roofing up to any pitch, including fixing with polymer coated 'J' or 'L' hooks, bolts & nuts 8mm dia. G.I plain/bitumen washers complete but excluding the cost of purlins, rafters, trusses, etc. These sheets shall be manufactured out of 2400 TEX panel rovigis incorporating minimum 0.3% ultra-violet stabilizer in resin system under approximately 2400 psi and hot cured. They shall be of uniform pigmentation and thickness without air pockets and shall conform to IS:10192 and IS:12866. The sheets shall be opaque or translucent, clear or pigmented, textured or smooth as specified.</p> <p>a 2 mm thick corrugated (2.5" or 4.2" or 6") or step-down (2" or 3" or 6") as specified</p>							
		Roof for lighting	7	1	3.30	1.00	-	23.10	
		Truss Cover Front And Back	2	0.5	7.00	1.20	-	8.40	
							Total =	31.50	
							@	Rs. 1,244.00	Rs. 39,186.00
								Per Sqm	

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount
12	13.21	Providing and fixing pre-coated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm(+0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS:277, in 240 MPa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length up to 12 meter or as desired by Engineer-in-charge. The sheet shall be fixed using self-drilling/ self-tapping screws of size (5.5x55 mm) with EPDM seal, complete up to any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.							
		Roof	1	1	23.00	6.50	-	149.50	
		Deduct fibreglass reinforced plastic sheet roofing	7	1	3.30	0.90	-	-20.79	
		Side Wall	2	1	5.00	-	2.00	20.00	
		Back Wall	1	1	21.00	-	2.00	42.00	
							Total =	190.71	
							@	Rs. 711.00	Rs. 1,35,594.81
								Per Sqm	
13	13.22	Providing and fixing pre-coated galvanised steel sheet roofing accessories 0.50 mm (+0.05 %) total coated thickness, Zinc coating 120 grams per sqm as per IS:277, in 240 MPa Steel grade, 5-7microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self-drilling/ self-tapping screws complete:							
	f	Gutter (600 mm over all girth)							
		Gutter	1	1	23.00	-	-	23.00	
							Total =	23.00	
							@	Rs. 963.00	Rs. 22,149.00
								Per Rm	
14	19.10	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50 mm including strengthening with 2 mm dia. wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge. a)Made of G.I. wire of dia. 4 mm							
		Side	2	1	5.00	-	0.60	6.00	
		Back	1	1	21.00	-	0.60	12.60	
		Scrap Partition	7	1	3.00	-	2.00	42.00	
		Front	7	2	3.00	-	0.50	21.00	

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount
							Total =	81.60	
							@	Rs. 749.00	Rs. 61,118.40
								Per Sqm	
15	12.9	Cement concrete floor topping 1:3:6 (1 cement: 3 coarse sand: 6 stone aggregate) finished with a floating coat of neat cement, including cement slurry, complete. a)20 mm thick							
		Floor	1	1	21.00	5.00	-	105.00	
		Gap between Compost plant and MRF Shed	1	1	21.00	0.75	-	15.75	
							Total =	120.75	
							@	Rs. 328.00	Rs. 39,606.00
								Per Sqm	
16	16.22	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications, including scaffolding: c Painting Steel work with Deluxe Multi Surface Paint to give an even shade.Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primerapplied @ 0.80 ltr/10 sqm of approved brand and manufacture							
		Post - 50x50mm Sq.pipe	16	1	4.40	0.20		14.08	
		Back bracer- 50x25mm rec.pipe	3	1	21.00	0.15		9.45	
		Side	3	8	5.00	0.15		18.00	
		Vertical	2	8	3.50	0.15		8.40	
		Truss						0.00	
		Rafter - 50x50mm Sq.pipe	8	1	12.90	0.20		20.64	
		Strut - 32x32mm Sq. pipe	8	1	7.60	0.13		7.78	
		Purlin - 40x40mm Sq. pipe	8	1	23.00	0.16		29.44	

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount	
		Scrap partition front side screen						0.00		
		25x25mm Sq. pipe	7	4	3.00	0.10		8.40		
			7	6	0.50	0.10		2.10		
		Channel for front side screen 25 mm flat	7	4	1.00	0.05		1.40		
							Total =	119.69		
							@	Rs. 116.00	Rs. 13,884.04	
								Per Sqm		
17	Quotation	Providing and installation of Plastic Bailing machine								
		Plastic Bailing machine	1	1	1.00	-	-	1.00		
							Total =	1.00		
							@	Rs. 5,50,000.00	Rs. 5,50,000.00	
								Per No		
								Total =	Rs. 15,85,677.55	
								Add 6.5% of Total for electrification =	Rs. 1,03,069.04	
								Total Cost =	Rs. 16,88,746.59	
								Say =	Rs. 17,00,000.00	

SECTION - IX
BILL OF QUANTITIES (BOQ)

Rate as per Govt.Meghalaya(MPWD) Schedule of Rate for Building Work 2021-2022 for East Khasi Hill
Distrist.

Sl. no	SOR Code	Particulars	Nos	L	B	H	Area Content	Amount	
		Roofing Work							
1	18.23	Dismantling roofing including ridges, hips, valleys and gutters etc., and stacking the material within 50 metres lead of:							
	a	G.S. Sheet							
		1	0.5	2	10.00	8.20	82.00		
		2	0.5	1	8.80	7.70	33.88		
		3		2	7.90	6.95	109.81		
		4		2	8.05	5.90			
		5		2	8.00	5.85	93.60		
		6		2	11.52	6.34	146.07		
		7		2	11.65	5.40	125.82		
		8		2	11.65	5.35	124.66		
		9		2	11.65	5.35	124.66		
		10		2	11.65	5.25	122.33		
		11		2	11.65	5.25	122.33		
							Total=	1085.16	
							@	Rs. 86.00	
								Rs. 93,323.76	
							Per Sqm		
2	13.1	Providing corrugated G.S or galvanised iron sheet roofing including vertical/ curved surface 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, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.							
	c	0.63 mm thick with zinc coating not less than 275 gm/sqm							
		1	0.5	2	10.00	8.20	82.00		
		2	0.5	1	8.80	7.70	33.88		
		3		2	7.90	6.95	109.81		
		4		2	8.05	5.90	94.99		
		5		2	8.00	5.85	93.60		
		6		2	11.52	6.34	146.07		
		7		2	11.65	5.40	125.82		
		8		2	11.65	5.35	124.66		
		9		2	11.65	5.35	124.66		

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount
		10		2	11.65	5.25		122.33	
		11		2	11.65	5.25		122.33	
							Total=	1180.15	
							@	Rs. 916.00	Rs. 10,81,017.40
								Per Sqm	
3	13.22	Providing and fixing pre-coated galvanised steel sheet roofing accessories 0.50 mm (+0.05 %) total coated thickness, Zinc coating 120 grams per sqm as per IS:277, in 240 MPa Steel grade, 5-7microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self-drilling/ self-tapping screws complete:							
	f	Gutter (600 mm over all girth)							
		Gutter	1	1	84.00	-	-	84.00	
							Total =	84.00	
							@	Rs. 963.00	Rs. 80,892.00
								Per Rm	
4	38.16.2 (SoR 15-	PVC PIPE of SUPREME /PRINCE / FUSION /SFMC Brand or equivalent (e) 110mm diameter							
		Rain Water Pipe	1	13	7.00	-	-	91.00	
							Total =	91.00	
							@	Rs. 1,036.00	Rs. 94,276.00
								Per Rm	
		Side Wall							
5	18.2	Demolishing R.C.C. work including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.							
		For footing for sq. pipe as support for side wall	1	36	0.45	0.45	0.60	4.37	
		For footing for sq. pipe as support for gate	1	4	0.60	0.60	0.75	1.08	
							Total=	5.45	
							@	Rs. 1,603.00	Rs. 8,736.35
								Per Cum	
6	6.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement- All work up to plinth level:							

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount
	a	M15 or Prop. 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size)							
		For footing for sq. pipe as support for side wall @ 2m C/C	1	36	0.45	0.45	0.60	4.37	
		For footing for sq. pipe as support for gate	1	4	0.60	0.60	0.75	1.08	
							Total =	5.45	
							@	Rs. 8,658.00	Rs. 47,186.10
								Per Cum	
7	7.9	Half brick masonry with common burnt clay (non modular) 1st class bricks in foundations and in plinth: b). Cement mortar 1:4 (1 cement: 4 coarse sand)							
		Side Wall - Curve	1	1	76.30	-	0.75	57.23	
		Back	1	1	22.00	-	0.75	16.50	
							Total =	73.73	
							@	Rs. 1,203.00	Rs. 88,697.19
								Per Sqm	
8	15.3	20 mm cement plaster of mix: 1:4 (1 cement: 4 fine sand)							
		Side Wall - Curve	2	1	76.30	-	0.82	125.13	
		Back	2	1	22.00	-	0.82	36.08	
							Total =	161.21	
							@	Rs. 331.00	Rs. 53,360.51
								Per Sqm	
9	11.2	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete							
		Side Wall Support member							
		Post - 50x50mm Sq. pipe	36	1	4.60	@	4.98	824.69	
		bracer-50x25mm rec. pipe	4	1	98.30	@	3.24	1273.97	
		Extra Support member	36	1	2.50	@	3.24	291.60	
		Gate - 2 Nos Front and back							

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount
		Main V - 50x25mm rec.pipe	4	2	2.00	@	3.24	51.84	
		H Member - 50x25mm rec.pipe	4	4	2.00	@	3.24	103.68	
		V member - 25x25mm Sq. pipe	4	14	0.50	@	1.98	55.44	
			4	5	1.05	@	1.98	41.58	
		Post - 80x80mm Sq.pipe	4	1	4.60	@	10.87	200.01	
		Extra Steel work - 12mm dia	40	6	0.45	@	0.89	96.12	
							Total =	2938.93	
							@	Rs. 123.00	Rs. 3,61,488.39
								Per Kgs	
10	13.21	Providing and fixing pre-coated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm(+0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS:277, in 240 MPa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length up to 12 meter or as desired by Engineer-in-charge. The sheet shall be fixed using self-drilling/ self-tapping screws of size (5.5x55 mm) with EPDM seal, complete up to any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.							
		Side Wall	1	1	76.30	2.50	-	190.75	
		Back Wall	1	1	22.00	2.50	-	55.00	
							Total =	245.75	
							@	Rs. 711.00	Rs. 1,74,728.25
								Per Sqm	
11	19.10	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50 mm including strengthening with 2 mm dia. wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge. a)Made of G.I. wire of dia. 4 mm							
		Side Wall	1	1	76.30	1.50	-	114.45	
		Back Wall	1	1	22.00	1.50	-	33.00	
							Total =	147.45	

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount
							@	Rs. 749.00	Rs. 1,10,440.05
								Per Sqm	
12	12.9	Cement concrete floor topping 1:3:6 (1 cement: 3 coarse sand: 6 stone aggregate) finished with a floating coat of neat cement, including cement slurry, complete. a)20 mm thick							
		Flooring							
		1	0.5	2	10.00	8.20		82.00	
		2	0.5	1	8.80	7.70		33.88	
		3		2	7.40	6.95		102.86	
		4		2	7.55	5.90		89.09	
		5		2	7.50	5.85		87.75	
		6		2	11.02	6.34		139.73	
		7		2	11.15	5.40		120.42	
		8		2	11.15	5.35		119.31	
		9		2	11.15	5.35		119.31	
		10		2	11.15	5.25		117.08	
		11		2	11.15	5.25		117.08	
							Total =	1128.51	
							@	Rs. 328.00	Rs. 3,70,151.28
								Per Sqm	
13	16.22	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications, including scaffolding: c Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @ 0.80 ltr/10 sqm of approved brand and manufacture							
		Side Wall Support member							
		Post - 50x50mm Sq. pipe	36	1	4.60	0.20		33.12	
		bracer-50x25mm rec. pipe	4	1	11.15	0.15		6.69	
		Extra Support member	36	1	2.50	0.15		13.50	
		Gate - 2 Nos Front and back							
		Main V - 50x25mm rec. pipe	4	2	2.00	0.15		2.40	

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount
		H Member - 50x25mm rec.pipe	4	4	2.00	0.15		4.80	
		V member - 25x25mm Sq. pipe	4	14	0.50	0.15		4.20	
			4	5	1.05	0.15		3.15	
		Post - 80x80mm Sq.pipe	4	1	4.60	0.32		5.89	
							Total =	73.75	
							@	Rs. 116.00	Rs. 8,555.00
								Per Sqm	
14	LS	Cleaning and Renovation of Existing Rest Room And Toilet							
			1	1	-	-	-	1.00	
							Total =	1.00	
							@	Rs. 1,20,000.00	Rs. 1,20,000.00
								LS	
							Total =	Rs. 25,99,528.52	
							Say =	Rs. 26,00,000.00	

SECTION - IX
BILL OF QUANTITIES (BOQ)

Estimate for RCC Counterfort Retaining wall of height 8.65m

Length = 36.80 m

Number of Counterforts = 10 Nos

Spacing between Counterforts = 3.7m C/C

Estimate based on MPWD Schedule of Rates (Building) 2021-22

Sl. No.	Description of work	Unit	No.	L	B	H	Qty.	Rate in INR	Total Amount in INR
1/2.1 a	Earthwork in excavation by manual means upto a depth of 2m below the existing ground level for foundation trenches of foundations, footings of column/ walls, retaining walls, septic tank etc. including bailing out water where necessary and removal of surplus earth with all lead and lifts as directed and specified for the following classification of soils. a All kinds of soil (ordinary soil/ hard soil/dense soil)								
	Earthwork in Cutting	cum	1	36.80	5.00	3.25	598.00		
	Total	cum						213.00	0.00
2/2.6(a)	Earthwork in filling (excluding rock) in trenches, plinth, sides of foundation etc in layers not exceeding 20 cm thick including breaking of clods, consolidating each layer by ramming and watering, lead upto 50 m and lift upto 1.5 m . a With available excavated earth								
	Earthwork in filling	cum	1	36.80	5.00	3.15	579.60		
	Deduct Raft	cum	1	36.80	4.80	0.45	-79.49		
	Deduct Stem Wall	cum	1	36.80	0.30	2.7	-29.81		
	Deduct Couterfort heel side	cum	10	2.98	0.30	2.7	-24.10		
	Toe Side	cum	10	0.50	0.30	2.7	-4.05		
	Total						442.16	141.00	62344.07
3/5.1 b	Plain cement concrete works in foundation bed for footing steps, walls, brick works etc below plinth level as directed and specified including dewatering if necessary, and curing complete (shuttering where necessary shall be measured and paid separately). b 1:3:6 (1 Cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size)								
	PCC	cum	1	36.80	5.00	0.10	18.40		
							18.40	7601.00	139858.40

4/4.2	Centering and shuttering including strutting, propping etc. and removal of form for all heights complete and as directed by Engineer in charge Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc (using steel)									
	Raft	Sqm	1	2	36.80		0.45	33.12		
	End side of raft	Sqm	1	2	4.80		0.45	4.32		
	Counterfort Wall - heel side	Sqm	2	10	1.90		8.20	311.60		
	face	Sqm		10	0.30		8.80	26.40		
	Toe Side	Sqm	2	10	0.50		2.70	27.00		
	Stem Wall First level	Sqm	2	1	36.80		8.20	603.52		
	End side of wall	Sqm	2	1	0.30		8.20	4.92		
		Sqm						1010.88	490.00	495331.20
5/6.7	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge.a All works upto plinth level									
	Raft	cum		1	36.80	4.80	0.45	79.49		
	Stem Wall	cum		1	36.80	0.30	2.7	29.81		
	Couterfort - heel side	cum	1	10	2.98	0.30	2.7	24.10		
	Toe Side	cum	1	10	0.50	0.30	2.7	4.05		
		Cum						137.44	10452.00	1436559.46
6	Extra labour for providing and laying cement concrete for RCC works	Cum		1				137.44	0.00	0.00
	b All works above plinth level upto first floor level									
	Stem Wall	cum		1	36.80	0.30	5.5	60.72		
	Couterfort - heel side	cum	1	10	1.38	0.30	5.5	22.69		
		Cum						83.41	11021.00	919234.06

6/6.11	Supplying, fitting and fixing in position reinforcement bars upto 1st floor level, conforming to relevant I.S. Code for R.C.C. work/ R.B. walling including straightening, cleaning, cutting and bending to proper shapes and length as per details, supplying and binding with 20G annealed black wire and placing in position with proper blocks, supports, chairs, spacers etc. complete. (Rates inclusive of all wastage, lappage, hooks, chairs, anchorage etc. and no measurement for the same is required) c Thermo-Mechanically Treated bars								
	Raft								
	Transverse - 12mmø @ 150mm c/c at top & bottom	kg	1	225	5.4		0.89	1081.35	
	Longitudinal - 12mmø @ 150mm c/c at top & bottom	kg	1	32	34.20		0.89	974.02	
	Side face bar 12mmø @ 125mm c/c both side	kg	1	4	77.00		0.89	274.12	
	Stem Wall - upto FGL								
	Vertical - 16mmø @ 150mm c/c both side (full height)	kg	2	225	9.55		1.58	6790.05	
	Horizontal - 16mmø @ 150mm c/c both side (below FGL)	kg	2	19	34.00		1.58	2041.36	
	Horizontal - 12mmø @ 150mm c/c both side (Above FGL)	kg	2	19	34.00		0.89	1149.88	
	Horizontal - 10mmø @ 150mm c/c both side (Above FGL)	kg	2	19	34.00		0.62	801.04	

	Counterfort heel side All									
	Vertical - 10mmø @ 200mm c/c both side (full height)	kg	10	19	9.8		0.62	1154.44		
	Horizontal - 10mmø @ 150mm c/c both side (Below FGL)	kg	10	19	7.05		0.62	830.49		
	Horizontal - 10mmø @ 200mm c/c both side (Above FGL)	kg	10	29	4.80		0.62	863.04		
	Side face bar									
	full length 3- 20mm	kg	10	3	10.70		2.47	792.87		
	upto 5.5 from top 3-20 & 2- 20	kg	10	5	4.20		2.47	518.70		
	Counterfort toe side All									
	Vertical - 10mmø @ 200mm c/c both side (full height)	kg	10	6	4.33		0.62	161.08		
	Horizontal - 10mmø @ 150mm c/c both side (Below FGL)	kg	10	19	1.95		0.62	229.71		
	Side face bar									
	full length 4- 12mm	kg	10	4	4.50		0.89	160.20		
		kg						17822.34		
		Qntl.						178.22	11026.00	1965091.43
7/6.19	Providing and fixing in position 12mm thick bitumen impregnated fibre board conforming to IS:1838, including cost of primer, sealing compound Grade-A in expansion joints.									

	PCC	Sqm		1	5.00		0.1	0.50		
	Raft	Sqm		1	4.80		0.45	2.16		
	Counter Fort Trangular area Heel side	Sqm		1	1.90		8.20	15.58		
	Toe Side	Sqm		1	0.50		2.70	1.35		
	Stem Wall	Sqm		1	0.30		8.20	2.46		
		Sqm						22.05	551.00	12149.55
	Total cost								INR	50,30,568.16
	Rounded off to								INR	50,30,600.00

Estimate for RCC Counterfort Retaining wall of height 10.7m

Length = 41.40 m

Number of Counterforts = 10 Nos

Spacing between Counterforts = 3.7m C/C

Estimate based on MPWD Schedule of Rates (Building) 2021-22

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth/Height	Qty.	Rate in INR	Total Amount in INR
1/2.1 a	Earthwork in excavation by manual means upto a depth of 2m below the existing ground level for foundation trenches of foundations, footings of column/ walls, retaining walls, septic tank etc. including bailing out water where necessary and removal of surplus earth with all lead and lifts as directed and specified for the following classification of soils. a All kinds of soil (ordinary soil/ hard soil/dense soil)								
	Earthwork in cutting	cum	1	41.40	6.50	3.50	941.85		
	Total	cum					941.85	213.00	200614.05
2/2.6(a)	Earthwork in filling (excluding rock) in trenches, plinth, sides of foundation etc in layers not exceeding 20 cm thick including breaking of clods, consolidating each layer by ramming and watering, lead upto 50 m and lift upto 1.5 m . a With available excavated earth								
	Earthwork in filling	cum	1	41.40	6.50	3.40	914.94		
	Deduct Raft	cum	1	41.40	6.30	0.45	-117.37		
	Deduct Stem Wall	cum	1	41.40	0.30	2.95	-36.64		
	Deduct Couterfort - heel side	cum	10	3.90	0.30	2.95	-34.52		
	Toe Side	cum	10	0.75	0.30	2.95	-6.64		
	Total						719.78	141.00	101488.91

3/5.1 b	Plain cement concrete works in foundation bed for footing steps, walls, brick works etc below plinth level as directed and specified including dewatering if necessary, and curing complete (shuttering where necessary shall be measured and paid separately). b 1:3:6 (1 Cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size)									
	PCC	cum		1	41.40	6.50	0.10	26.91		
								26.91	7601.00	204542.91
4/4.2	Centering and shuttering including strutting, propping etc. and removal of form for all heights complete and as directed by Engineer in charge Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc (using steel)									
	Raft	Sqm		2	41.40		0.45	37.26		
	End side of raft	Sqm		2	6.30		0.45	5.67		
	Counterfort Wall - heel side	Sqm	2	10	2.40		10.25	492.00		
	face	Sqm		10	0.30		11.10	33.30		
	Toe Side	Sqm	2	10	0.75		2.95	44.25		
	face	Sqm		10	0.30		3.30	9.90		
	Stem Wall	Sqm		2	41.40		10.25	848.70		
	End side of wall	Sqm		2	0.30		10.25	6.15		
		Sqm						1477.23	490.00	723842.70
5/6.7	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge.a All works upto plinth level									
	Raft	cum		1	41.40	6.30	0.45	117.37		
	Stem Wall	cum		1	41.40	0.30	2.95	36.64		
	Couterfort - heel side	cum		10	3.90	0.30	2.95	34.52		
	Toe Side	cum		10	0.75	0.30	2.95	6.64		
		Cum						195.16	10452.00	2039817.55

6	Extra labour for providing and laying cement concrete for RCC works	Cum		1				195.16	0.00	0.00
b All works above plinth level upto first floor level										
	Stem Wall	cum		1	41.40	0.30	7.3	90.67		
	Couterfort - heel side	cum		10	1.80	0.30	7.3	39.42		
		Cum						130.09	11021.00	1433677.81
6/6.11	Supplying, fitting and fixing in position reinforcement bars upto 1st floor level, conforming to relevant I.S. Code for R.C.C. work/ R.B. walling including straightening, cleaning, cutting and bending to proper shapes and length as per details, supplying and binding with 20G annealed black wire and placing in position with proper blocks, supports, chairs, spacers etc. complete. (Rates inclusive of all wastage, lappage, hooks, chairs, anchorage etc. and no measurement for the same is required) c Thermo-Mechanically Treated bars									
	Footing: raft									
	In base of stem wall 4-16 T longitudinal	kg		4	37.40		1.58	236.37		
	Transverse - 12mmø @ 150mm c/c at top & bottom	kg	2	225	6.9		0.89	2763.45		
	Longitudinal - 12mmø @ 150mm c/c at top & bottom	kg	2	42	34.20		0.89	2556.79		
	Side face bar 12mmø @ 125mm c/c both side	kg	1	4	80.00		0.89	284.80		
	Stem Wall - upto FGL									
	Vertical - 20mmø @ 150mm c/c both side (below FGL)	kg	2	225	5.35		2.47	5946.53		

	Horizontal - 20mmø @ 150mm c/c both side (below FGL)	kg	2	21	33.90		2.47	3516.79		
	Stem Wall - above FGL									
	Vertical - 16mmø @ 150mm c/c both side (Above FGL)	kg	2	225	7.45		0.89	2983.73		
	Horizontal - 16mmø @ 150mm c/c both side (Above FGL)	kg	2	49	33.90		0.89	2956.76		
	Counterfort heel side All									
	Vertical - 10mmø @ 150mm c/c both side (full height)	kg	10	31	12.08		0.62	2321.78		
	Horizontal - 12mmø @ 140mm c/c both side (Below FGL)	kg	10	22	8.80		0.89	1723.04		
	Horizontal - 12mmø @ 150mm c/c both side (Above FGL)	kg	10	25	6.10		0.89	1357.25		
	Horizontal - 10mmø @ 150mm c/c both side (Above FGL)	kg	10	25	3.10		0.62	480.50		

	Side face bar									
	full length 3-20mm	kg	10	3	12.90		2.47	955.89		
	upto 3.65 from top	kg	10	4	9.30		2.47	918.84		
	upto 7.3 from top	kg	10	5	5.70		2.47	703.95		
	Counterfort toe side All									
	Vertical - 10mmø @ 150mm c/c both side (full height)	kg	10	11	4.58		0.62	312.36		
	Horizontal - 10mmø @ 150mm c/c both side (Below FGL)	kg	10	21	2.45		0.62	318.99		
	Side face bar									
	full length 3-16mm	kg	10	3	5.00		1.58	237.00		
		kg						30338.43		
		Qntl.						303.38	11026.00	3345115.07
7/6.19	Providing and fixing in position 12mm thick bitumen impregnated fibre board conforming to IS:1838, including cost of primer, sealing compound Grade-A in expansion joints.									
	PCC	Sqm		1	6.50		0.1	0.65		
	Raft	Sqm		1	6.30		0.45	2.84		
	Counter Fort	Sqm		1	2.40		10.25	24.60		
	Trangular area Heel side									
	Toe Side	Sqm		1	0.75		2.95	2.21		
	Stem Wall	Sqm		1	0.30		10.25	3.08		
		Sqm						33.37	551.00	18388.25
	Total cost								INR	80,67,487.24
	Rounded off to								INR	80,67,500.00
Total Cost of RCC Counter Fort Retaining Wall (8.65 M Ht for 33 m& 10.7 M Ht for 33 m)									INR	1,30,98,100.00

SECTION - IX									
BILL OF QUANTITIES (BOQ)									
Schedule of Rates for Road and Bridge Works (Other than National Highway Works) 2020-21									
Sl. no	Particulars	No	L	B	H	Quantity	Unit	Rate	Amount
1/	Clearing and Grubbing Road Land.								
2.2	Clearing and grubbing road land including uprooting wild vegetation, grass, bushes, shrubs, saplings and trees of girth upto 30 mm, removal of stumps of such trees cut earlier and disposal of unserviceable material to be used or auctioned upto a lead of 1000 m including removal and disposal of top organic soil not exceeding 150 mm in thickness as per Technical Specification Clause 201.A. By Manual means								
	i. In area of non -thorny jungle								
	Approach From Gate to Plant		150	5.00		750.00			
	From Plant to Vermi Compost Shed		50	5.00		250.00			
						1000.00	Sqm		
						0.06	Hc		Rs. 0.00
2/	(iii) Excavation in Soil using Hydraulic Excavator and Tippers with disposal upto 1000 m.								
3.5	Excavation for roadway in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirement of lines, grades and cross-sections and transporting to the embankment location with a lift upto 1.5 m and lead upto 1000 m as per Technical Specification Clause 302.3.								
	Approach From Gate to Plant		150	4.00	0.3	180.00			
	From Plant to Vermi Compost Shed		50	4.00	0.3	60.00			
						240.00	cum	Rs. 105.00	Rs. 25,200.00
3/	Dismantling of flexible pavements and disposal of dismantled material upto a lead of 100 m stacking of serviceable and unserviceable materials separately as per Technical Specification Clause 202.								
2.14	By Manual Means (A)Bituminous Courses								

	Approach from Colony to Plant Gate		1000	4.50	0.15	675.00			
						675.00	cum	Rs. 1,316.00	Rs. 8,88,300.00
4/ 4.1	<p>Granular Sub-base with Well Graded Material (Table 400.1) (B) By Plant Mix Method Construction of granular sub-base by providing well graded material, mixing in mechanical mix plant at OMC carriage of mixed material to work site upto a lead of 1000 m, spreading in uniform layers with motor grader on prepared surface and compacting with smooth wheel roller to achieve the desired density, complete as per Technical Specification Clause 401. (iii) For Grading III Material.</p>								
	Soling								
	Approach From Gate to Plant		150	5.00	0.15	112.50			
	From Plant to Vermi Compost Shed		50	5.00	0.15	37.50			
						150.00	cum	Rs. 4,085.00	Rs. 6,12,750.00
5/ 4.7	<p>Water Bound Macadam Sub-base/Base 3) WBM Grading 3 Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with three wheel 80-100 kN static roller in stages to proper grade and camber, applying and brooming stone screenings /binding materials to fill up the interstices of coarse aggregate, watering and compacting to the required density Grading 2 as per Technical Specification Clause 405.</p>								
	(A) By Manual Means.								
	Metalling								
	Approach From Gate to Plant		150	4.90	0.1	73.50			

	From Plant to Vermi Compost Shed		50	4.90	0.1	24.50			
	Approach from Colony to Plant Gate		1000	4.40	0.1	440.00			
			500	4.40	0.05	110.00			
						648.00	cum	Rs. 5,248.00	Rs. 34,00,704.00
6/	Prime Coat								
5.1	(iii) High porosity								
	Providing and applying primer coat with bitumen emulsion (SS-1) on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 1.20 - 1.50 kg/sqm using mechanical means as per Technical Specification Clause 502.								
	Primer Coat								
	Approach From Gate to Plant		150	4.90		735.00			
	From Plant to Vermi Compost Shed		50	4.90		245.00			
	Approach from Colony to Plant Gate		1000	4.40		4400.00			
						5380.00	sqm	Rs. 91.00	Rs. 4,89,580.00
7/	Providing and laying semi dense bituminous concrete with Hot Mix plant using crushed aggregates of specified grading as per Table 500.14 (MORT&H Specification) premixed with bituminous binder, transported to site upto a lead of 1000 m, laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled to achieve the desired compaction as per Technical MORT&H Specification clause 508								
5.5	USING PENETRATION GRADE GRADE BITUMEN 80/100								

	A. Without Anti-Stripping Agent								
	10 MM NOMINAL SIZE GRADING								
	SDBC								
	Approach From Gate to Plant		150	4.90	0.05	36.75			
	From Plant to Vermi Compost Shed		50	4.90	0.05	12.25			
	Approach from Colony to Plant Gate		1000	4.40	0.05	220.00			
						269.00	cum	Rs. 12,872.00	Rs. 34,62,568.00
8/5.14	Seal Coat Type A								
	Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A, Type B and Type C as per Technical Specification Clause 510								
	By Manual Means								
	Without Anti-Stripping Agent								
	(I) Bitumen 80/100 grade Seal Coat								
	Approach From Gate to Plant		150	4.90		735.00			
	From Plant to Vermi Compost Shed		50	4.90		245.00			
	Approach from Colony to Plant Gate		1000	4.40		4400.00			
						5380.00	sqm	Rs. 106.00	Rs. 5,70,280.00
								Total =	Rs. 94,49,382.00
								Say =	Rs. 94,54,000.00

SECTION - IX
BILL OF QUANTITIES (BOQ)

Rate as per Govt.Meghalaya(MPWD) Schedule of Rate for Building Work 2021-2022 for East Khasi Hill Distrist.

Sl. no	SOR Code	Particulars	Nos	L	B	H	Area Content	Amount	
1	2.1	Earthwork in excavation by manual means up to a depth of 2m below the existing ground level for foundation trenches of foundations, footings of column/ walls, retaining walls, septic tank etc. including bailing out water where necessary and removal of surplus earth with all lead and lifts as directed and specified for the following classification of soils.							
	b	In ordinary rock (soft rock/ medium rock/ hard shale)							
		RRM Wall	1	240	2.05	0.45	0.50	110.70	
		Column	1	241	0.45	0.45	0.50	24.40	
		Column for Gate	1	2	1.35	1.35	1.65	6.01	
							Total=	141.11	
							@	Rs. 0.00	
							Per Cum		
2	12.5	Providing soling with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete							
	b	Stone soling							
	(i)	100mm							
		Column for Gate	1	2	1.35	1.35	-	3.65	
							Total =	3.65	
							@	Rs. 415.00	
							Per Sqm	Rs. 1,514.75	
3	5.1	Plain cement concrete works in foundation bed for footing steps, walls, brick works etc below plinth level as directed and specified including dewatering if necessary, and curing complete (shuttering where necessary shall be measured and paid separately).							
	b	1:3:6 (1 Cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size)							
		RRM Wall	1	240	2.05	0.45	0.10	22.14	
		Column	1	241	0.45	0.45	0.10	4.88	
		Column for Gate	1	2	1.35	1.35	0.10	0.36	
							Total =	27.38	
							@	Rs. 7,601.00	
								Rs. 2,08,115.38	

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount
								Per Cum	
4	6.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement- All work up to plinth level:							
	a	M15 or Prop. 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size)							
		Column below ground	1	241	0.45	0.45	0.60	29.28	
		Column Above ground	1	241	0.20	0.20	1.80	17.35	
		Column for Gate (Foundation)	1	2	1.35	1.35	0.15	0.55	
			1	2	0.90	0.90	0.30	0.49	
			1	2	0.30	0.30	1.00	0.18	
		Column for Gate Above GL	1	2	0.30	0.30	2.10	0.38	
							Total =	48.23	
							@	Rs. 8,658.00	Rs. 4,17,575.34
								Per Cum	
5	4.16	SHUTTERING/ FORMWORK Centering and shuttering including strutting, propping etc. and removal of form for all heights complete and as directed by Engineer in charge. Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12 mm thick							
		Column Above ground	241	4	0.45	-	0.60	260.28	
		Column for Gate (Foundation)	2	4	0.30	-	1.00	2.40	
		Column for Gate Above GL	2	4	0.30	-	2.10	5.04	
							Total =	267.72	
							@	Rs. 595.00	Rs. 1,59,293.40
								Per Sqm	

Sl. no	SOR Code	Particulars	Nos	L	B	H	Area Content	Amount	
6	8.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement: 6 coarse sand:12 graded stone aggregate 20 mm nominal size) upto plinth level with:							
	a.	Cement mortar 1:6 (1 cement : 6 coarse sand).							
		RRM Wall	240	1	2.05	0.45	0.70	154.98	
							Total =	154.98	
							@	Rs. 6,098.00	
								Rs. 9,45,068.04	
							Per Cum		
7	7.9	Half brick masonry with common burnt clay (non modular) 1st class bricks in foundations and in plinth: b). Cement mortar 1:4 (1 cement: 4 coarse sand)							
		Boundary Wall	240	1	2.30	-	1.80	993.60	
							Total =	993.60	
							@	Rs. 1,203.00	
								Rs. 11,95,300.80	
							Per Sqm		
8	15.3	20 mm cement plaster of mix: 1:4 (1 cement: 4 fine sand)							
		Boundary Wall	240	2	2.30	-	1.80	1987.20	
		Top	240	2	2.30	0.15	-	165.60	
		Column	241	2	0.25	-	1.80	216.90	
		Top	241	1	0.20	0.20	-	9.64	
		RRM Wall & Footing Above ground	2	1	600.00	-	0.46	552.00	
		Column for Gate Above GL	2	4	0.30	-	2.10	5.04	
		Top	2	1	0.30	0.30	-	0.18	
							Total =	2936.56	
							@	Rs. 331.00	
								Rs. 9,72,001.36	
							Per Sqm		

Sl. no	SOR Code	Particulars	Nos	L	B	H	Area Content	Amount	
9	6.11	Supplying, fitting and fixing in position reinforcement bars upto 1st floor level, conforming to relevant I.S. Code for R.C.C. work/ R.B. walling including straightening, cleaning, cutting and bending to proper shapes and length as per details, supplying and binding with 20G annealed black wire and placing in position with proper blocks, supports, chairs, spacers etc. complete. (Rates inclusive of all wastage, lappage, hooks, chairs, anchorage etc. and no measurement for the							
	c	Thermo-Mechanically Treated bars							
		Column - 4nos - 12mm	241	4	2.50	@	0.89	2144.90	
		Stirrups - 8mm @ 150mm c/c	241	17	0.60	@	0.39	958.70	
		Gate foundation jali 12mm@150mm c/c	2	20	1.35	@	0.89	48.06	
		Gate Post - 4-16mm	2	4	3.95	@	1.58	49.93	
		Gate Post - 4-12mm	2	4	3.95	@	0.89	28.12	
		Stirrups - 8mm @ 125mm c/c	24	29	0.78	@	0.39	211.72	
							Total in kg=	3441.43	
							Total in qnt=	34.41	
							@	Rs. 11,026.00	
							Per Quintals	Rs. 3,79,452.07	
10	11.15	Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. b In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.							
		Main V - 50x25mm rec.pipe	2	2	2.00	@	3.24	25.92	
		H Member - 50x25mm rec.pipe	2	4	2.00	@	3.24	51.84	
		V member - 25x25mm Sq. pipe	2	14	0.50	@	1.98	27.72	
			2	5	1.05	@	1.98	20.79	
		MS Sheet	2	1	2.00	1.00	15.70	62.80	

Sl. no	SOR Code	Particulars	Nos		L	B	H	Area Content	Amount
		Connecting member	2	3	0.70	@	4.98	20.92	
		Angle for Barbed wire 40 x 40	241	1	0.90	@	2.40	520.56	
							Total =	730.55	
							@	Rs. 128.00	Rs. 93,510.40
								Per Kgs	
11	19.4	Fencing with angle iron post placed at required distance embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with horizontal lines and two diagonals interwoven with horizontal wires, of barbed wire weighing 9.38 kg per 100 m (minimum), between the two posts fitted and fixed with G.I. staples, turn buckles etc. complete. (Cost of posts, struts, earth work and concrete work to be paid for separately). Payment to be made per metre cost of total length of barbed wire used. a With G.I. barbed wire							
		Barbed Wire	4	1	600.00	-		2400.00	
							Total =	2400.00	
							@	Rs. 18.00	Rs. 43,200.00
								Per Sqm	
12	16.22	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications, including scaffolding: c Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @ 0.80 ltr/10 sqm of approved brand and manufacture							
		Gate	2	2	2.00	2.00		16.00	
		Angle for Barbed wire 40 x 40	241	1	0.60	0.10		14.46	
							Total =	30.46	
							@	Rs. 116.00	Rs. 3,533.36
								Per Sqm	
								Total Cost =	Rs. 44,18,564.90
								Say =	Rs. 44,77,000.00

SECTION - IX						
BILL OF QUANTITIES (BOQ)						
Electrical Works in SWM Facility						
Existing Plant area in Sqm					1130.00	
Existing Compost Shed area in Sqm					405.00	
MRF area in Sqm					120.00	
Existing Rest room area in Sqm					40.00	
Total Build up Area in Sqm					1695.00	
Cost of the Plant As per Plinth Area rate @ 23517					3,98,61,315.00	
Electrical Cost @ 7.5%					29,89,598.63	
Say					29,89,600.00	

SECTION - IX
BILL OF QUANTITIES (BOQ)

Estimate based on MPWD Schedule of Rates (Building) 2021-22

Sl.No.	Particulars	Nos	L	W	H/D	Qty.	Unit	Rate	Amount in Rs
CIVIL WORK - A. Drain - 500 x 500 for 300 Meter									
1/ 2.1	Earthwork in excavation by manual means up to a depth of 2m below the existing ground level for foundation trenches of foundations, footings of column/walls, retaining walls, septic tank etc. including bailing out water where necessary and removal of surplus earth with all lead and lifts as directed and specified for the following classification of soils. b In ordinary rock (soft rock/ medium rock/ hard shale)								
	Drain	1	300.00	0.90	0.80	216.00			
					Total =	216.00	Cum	414.00	89424.00
2/ 12.5	Providing soling with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete. b Stone soling (i) 100 mm								
	Drain	1	300.00	0.90		270.00			
					Total =	270.00	Sqm	415.00	112050.00
3/ 5.1	Plain cement concrete works in foundation bed for footing steps, walls, brick works etc below plinth level as directed and specified including dewatering if necessary, and curing complete (shuttering where necessary shall be measured and paid separately). b 1:3:6 (1 Cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size)								
	Drain	1	300.00	0.90	0.10	27.00			
					Total =	27.00	Cum	7601.00	205227.00
4/ 6.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement- All work up to plinth level: b M20 or 1:1½:3 (1 cement: 1½ coarse sand: 3 graded stone aggregate 20 mm nominal size)								
	Sub-structure								
	Drain - base	1	300.00	0.70	0.10	21.00			
	Side	2	300.00	0.50	0.10	30.00			
					Total =	51.00	Cum	9336.00	476136.00
5/ 4.16	Centering and shuttering including strutting, propping etc. and removal of form for all heights complete and as directed by Engineer in charge. Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12 mm thick								
	Drain both side	2	300.00		0.50	300.00			
		2	300.00		0.60	360.00			

						Total =	660.00	Sqm	595.00	392700.00
6/ 15.8	15 mm cement plaster on rough side of single or half brick wall finished with a floating coat of neat cement of mix: a. 1:3 (1 cement: 3 fine sand)									
	Drain both side		2	300.00		0.50	300.00			
	base		1	300.00		0.50	150.00			
						Total =	450.00	Sqm	351.00	157950.00
7/ 6.11	Supplying, fitting and fixing in position reinforcement bars up to 1st floor level, conforming to relevant I.S. Code for R.C.C. work/ R.B. walling including straightening, cleaning, cutting and bending to proper shapes and length as per details, supplying and binding with 20 G annealed black wire and placing in position with proper blocks, supports, chairs, spacers etc. complete. (Rates inclusive of all wastage, lappage, hooks, chairs, anchorage etc. and no measurement for the same is required) c Thermo-Mechanically Treated bars									
		Nos	L/H	Nos of bar	W/kg	Total	Unit	Rate	Amount	
	SUB STRUCTURE									
	steel-10mm @ 125mmc/c	1	1	300.00	13	0.62	2418.00			
	Main	1		1.70	2400	0.62	2529.60			
						Total =	4947.60	Kg		
						Total in qtl=	49.48	Qntl	11026.00	545522.38
									Total (A) =	19,79,009.38
									Say =	19,79,000.00
<u>CIVIL WORK - B. Drain - 250 x 250 for 300 Meter</u>										
1/ 2.1	Earthwork in excavation by manual means up to a depth of 2m below the existing ground level for foundation trenches of foundations, footings of column/walls, retaining walls, septic tank etc. including bailing out water where necessary and removal of surplus earth with all lead and lifts as directed and specified for the following classification of soils. b In ordinary rock (soft rock/ medium rock/ hard shale)									
	Drain		1	300.00	0.65	0.55	107.25			
						Total =	107.25	Cum	414.00	44401.50
2/ 12.5	Providing soling with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete. b Stone soling (i) 100 mm									
	Drain		1	300.00	0.65		195.00			

					Total =	195.00	Sqm	415.00	80925.00
3/ 5.1	Plain cement concrete works in foundation bed for footing steps, walls, brick works etc below plinth level as directed and specified including dewatering if necessary, and curing complete (shuttering where necessary shall be measured and paid separately). b 1:3:6 (1 Cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size)								
	Drain		1	300.00	0.65	0.10	19.50		
						Total =	19.50	Cum	7601.00
									148219.50
4/ 6.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement- All work up to plinth level: b M20 or 1:1½:3 (1 cement: 1½ coarse sand: 3 graded stone aggregate 20 mm nominal size)								
	Sub-structure								
	Drain - base		1	300.00	0.45	0.10	13.50		
	Side		2	300.00	0.25	0.10	15.00		
						Total =	28.50	Cum	9336.00
									266076.00
5/ 4.16	Centering and shuttering including strutting, propping etc. and removal of form for all heights complete and as directed by Engineer in charge. Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12 mm thick								
	Drain both side		2	300.00		0.25	150.00		
			2	300.00		0.35	210.00		
						Total =	360.00	Sqm	595.00
									214200.00
6/ 15.8	15 mm cement plaster on rough side of single or half brick wall finished with a floating coat of neat cement of mix: a. 1:3 (1 cement: 3 fine sand)								
	Drain both side		2	300.00		0.25	150.00		
	base		1	300.00		0.25	75.00		
						Total =	225.00	Sqm	351.00
									78975.00
7/ 6.11	Supplying, fitting and fixing in position reinforcement bars up to 1st floor level, conforming to relevant I.S. Code for R.C.C. work/ R.B. walling including straightening, cleaning, cutting and bending to proper shapes and length as per details, supplying and binding with 20 G annealed black wire and placing in position with proper blocks, supports, chairs, spacers etc. complete. (Rates inclusive of all wastage, lappage, hooks, chairs, anchorage etc. and no measurement for the same is required) c Thermo-Mechanically Treated bars								

		Nos	L/H	Nos of bar	W/kg	Total	Unit	Rate	Amount
	SUB STRUCTURE								
	steel-10mm @ 125mmc/c	1	1	300.00	11	0.62	2046.00		
	distribution	1		1.00	2400	0.62	1488.00		
						Total =	3534.00	Kg	
						Total in qtl=	35.34	Qntl	11026.00
Total B=									12,22,455.84
Say =									12,22,500.00
Grand total (A + B) =									32,01,500.00

SECTION - IX
BILL OF QUANTITIES (BOQ)

SL. No	Particular	Quantity	Unit	Rate (in Rupees)	Total (in Rupees)
A	Equipment for Composting				
1	Shovels	4	Nos.	500	2,000
2	Rakes	4	Nos.	500	2,000
3	Spades	4	Nos.	500	2,000
4	Sieve	4	Nos.	2100	8,400
5	Spray Cans	4	Nos.	2000	8,000
6	Watering Cans	4	Nos.	700	2,800
7	Weighing and Sealing Machine	2	Nos.	26,000	52,000
8	Wheel Burrows	4	Nos.	5500	22,000
Total (A)					Rs. 99,200.00
B	Machineries for Material Recovery Facility				
1	Shredder for MRF	1	No.	7,50,000.00	7,50,000.00
2	Vibrated conveyer	1	No.	25,00,000.00	25,00,000.00
3	Baling Machine	1	No.	7,50,000.00	7,50,000.00
4	HDPE wheeled container bin	4	Nos.	25,000.00	1,00,000.00
Total					Rs. 41,00,000.00
Add 10% Transportation Cost					Rs. 4,10,000.00
Total (B)					Rs. 45,10,000.00
C	Back Hoe Loader (C)	1	No.	37,61,303.00	37,61,303.00
D	Household Bins	5000	Pairs	837.50	41,87,500.00
Total (A+B+C+D)					Rs. 1,25,58,003.00

SECTION - IX
BILL OF QUANTITIES (BOQ)

Estimate based on MPWD Schedule of Rates (Building) 2021-22

Sl.No.	Particulars	Nos	L	W	H/D	Qty.	Unit	Rate	Amount in Rs
	Civil Work - Security Room								
1/ 2.1	Earthwork in excavation by manual means up to a depth of 2m below the existing ground level for foundation trenches of foundations, footings of column/ walls, retaining walls, septic tank etc. including bailing out water where necessary and removal of surplus earth with all lead and lifts as directed and specified for the following classification of soils. b In ordinary rock (soft rock/ medium rock/ hard shale)								
	Foundation (F1)	6	1.50	1.50	1.50	20.25			
	Plinth Wall	1	23.40	0.35	0.20	1.64			
					Total =	21.89	Cum	414.00	9061.63
2/ 2.6	Earthwork in filling (excluding rock) in trenches, plinth, sides of foundation etc in layers not exceeding 20 cm thick including breaking of clods, consolidating each layer by ramming and watering, lead up to 50 m and lift up to 1.5 m. a With available excavated earth								
	Foundation (F1)	6	1.50	1.50	0.97	13.10			
	Deduct column	6	0.30	0.30	0.95	-0.51			
	Building Area	1	8.10	3.90	0.15	4.74			
					Total =	17.32	Cum	141.00	2442.19
3/ 2.8	Disposal of surplus earth/ unserviceable material from the work site including loading and unloading complete as directed. a First 5 Km								
	Balance earth		21.89	17.32		4.57			
					Total =	4.57	Cum	153.00	698.83
4/ 8.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement: 6 coarse sand: 12 graded stone aggregate 20 mm nominal size) up to plinth level with: a Cement mortar 1:6 (1 cement: 6 coarse sand)								
	Plinth Wall	1	23.40	0.35	0.30	2.46			
					Total =	2.46	Cum	6098.00	14982.79
5/ 12.5	Providing soling with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete. b Stone soling (i) 100 mm								

	Foundation (F1)		6	1.50	1.50		13.50			
	Building		2	3.60	3.00		21.60			
	Plinth Protection Veranda		1	3.90	0.90		3.51			
						Total =	38.61	Sqm	415.00	16023.15
6/6.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement- All work up to plinth level: b M20 or 1:1½:3 (1 cement: 1½ coarse sand: 3 graded stone aggregate 20 mm nominal size)									
	Sub-structure									
	Foundation (F1)		6	1.50	1.50	0.10	1.35			
			6	1.50	1.50	0.20	2.70			
			6	0.95	0.95	0.35	1.90			
	Column		6	0.30	0.30	1.15	0.62			
	plinth beam			23.40	0.25	0.30	1.76			
	Building		2	3.60	3.00	0.07	1.51			
	Plinth Protection Veranda		1	3.90	0.90	0.07	0.25			
						Total =	10.08	Cum	9336.00	94097.08
7/6.2	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, fillets, columns, pillars, posts and struts etc. above plinth level up to first floor level, excluding cost of centering, shuttering, finishing and reinforcement: b M20 or 1:1½:3 (1 cement: 1½ coarse sand: 3 graded stone aggregate 20 mm nominal size)									
	Column(super structure)									
	Ground Floor		6	0.30	0.30	3.00	1.62			
							1.62	Cum	9923.00	16075.26
8/6.3	Reinforced cement concrete work in beams, slabs, roofs having slope up to 15o,landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to first floor level, excluding the cost of centering, shuttering, finishing and reinforcement. b M20 or 1:1½:3 (1 cement: 1½ coarse sand: 3 graded stone aggregate 20 mm nominal size)									
	Ground Floor									
	Sill Band			6.60	0.13	0.10	0.08			
	Lintel Band			23.40	0.13	0.10	0.29			

	Beam									
	B-1		4	3.60	0.25	0.35	1.26			
	B-2		3	3.00	0.25	0.35	0.79			
	CB 1		5	0.90	0.25	0.35	0.39			
	Slab - 1		2	3.60	3.00	0.10	2.16			
	Cantilever Slab		1	3.90	0.90	0.10	0.35			
			1	3.60	0.90	0.10	0.32			
	Projection slab		1	8.40	0.30	0.10	0.25			
			1	4.20	0.30	0.10	0.13			
	Drop slab		1	9.25	0.35	0.07	0.23			
						Total =	6.26	Cum	10335.00	64654.47
9/ 4.16	Centering and shuttering including strutting, propping etc. and removal of form for all heights complete and as directed by Engineer in charge. Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12 mm thick									
	Column	6	4	0.30			1.30	9.36		
	plinth beam		2	23.40			0.30	14.04		
	Super Structure									
	Ground Floor									
	Column	6	4	0.30			3.00	21.60		
	Sill Band		2	6.60			0.10	1.32		
	Lintel Band		2	23.40			0.10	4.68		
	Beam									
	B-1		4	3.60			0.75	10.80		
	B-2		3	3.00			0.75	6.75		
	CB 1		5	0.90			0.75	3.38		
	Slab - 1		2	3.60	3.00			21.60		
	Cantilever Slab		1	3.90	0.90			3.51		
			1	3.60	0.90			3.24		
	Projection slab		1	8.40	0.30			2.52		
			1	4.20	0.30			1.26		
	Drop slab		1	9.25			0.70	6.48		
						Total =	110.53	Sqm	595.00	65765.35
10/ 7.10	Half brick masonry with common burnt clay (non modular) 1st class bricks in superstructure above plinth level up to first floor level. a Cement mortar 1:3 (1 cement:3 coarse sand)									
	(ii) Thickness 12.50cm									
	Ground Floor Wall		1	25.85			2.80	72.38		

	Deduct Door (D)		2	0.90			2.10	-3.78			
	Deduct Door (D1)		1	0.75			2.10	-1.58			
	W		4	1.20			1.65	-7.92			
	W1		1	0.60			1.20	-0.72			
							Total =	58.39	Sqm	1247.00	72806.10
11/	CEMENT PLASTER (IN FINE SAND)										
15.3	20 mm cement plaster of mix: (a) 1:4 (1 cement: 4 fine sand)										
	Ground Floor										
	Ground Floor Wall		2	1	25.85		2.70	139.59			
	Deduct Door (D)		2	2	0.90		2.10	-7.56			
	Deduct Door (D1)		2	1	0.75		2.10	-3.15			
	W		2	4	1.20		1.65	-15.84			
	W1		2	1	0.60		1.20	-1.44			
	Column		6	4	0.30		3.00	21.60			
	Beam										
	B-1		4	3.60			0.75	10.80			
	B-2		3	3.00			0.75	6.75			
	CB 1		5	0.90			0.75	3.38			
	Ceiling		2	3.60	3.00			21.60			
	Ceiling		1	3.90	0.90			3.51			
			1	3.60	0.90			3.24			
	Projection slab		1	8.40	0.30			2.52			
			1	4.20	0.30			1.26			
	Drop slab		1	9.25			0.70	6.48			
							Total =	192.73	Sqm	331.00	63793.63
12/	Supplying, fitting and fixing in position reinforcement bars up to 1st floor level, conforming to relevant I.S. Code for R.C.C. work/ R.B. walling including straightening, cleaning, cutting and bending to proper shapes and length as per details, supplying and binding with 20 G annealed black wire and placing in position with proper blocks, supports, chairs, spacers etc. complete. (Rates inclusive of all wastage, lappage, hooks, chairs, anchorage etc. and no measurement for the same is required) c Thermo-Mechanically Treated bars										
6.11			Nos	L/H	Nos of bar		W/kg	Total	Unit	Rate	Amount
	SUB STRUCTURE										

F1(jali) 1.65mx1.65m- 11mmdia @ 120mmc/c	6	2	1.50	12	0.62	133.92			
Column C (300x300) 4-16mmdia	6		1.75	4	1.58	66.36			
Development length	6		0.45	4	1.58	17.06			
Column C (300x300) 4-12mmdia	6		1.75	4	0.89	37.38			
Development length	6		0.45	4	0.89	9.61			
8mm ϕ Stirrups @ 120mm c/c and 75mmc/c in near junction	6		1.04	17	0.39	41.37			
Tie beam (250x300) 4- 16mm ϕ			23.40	4	1.58	147.89			
8mm ϕ Stirrups @ 125mm c/c			1.06	156	0.39	64.49			
Ground Floor									
Column C (300x300) 8-16mmdia	6		3.00	4	1.58	113.76			
Column C (300x300) 4-12mmdia	6		3.00	4	0.89	64.08			
8mm ϕ Stirrups @ 120mm c/c and 75mmc/c in near junction	6		1.04	28	0.39	68.14			
SILL	1		6.60	3	0.62	12.28			
8mm ϕ Stirrups @ 150mm c/c	1		0.31	45	0.39	5.44			
lintel	1		25.85	3	0.62	48.08			
8mm ϕ Stirrups @ 150mm c/c	1		0.31	157	0.39	18.98			
Beam									

B-1 (250x350) 4-16mm ϕ		4	3.60	4	1.58	91.01			
2-16 mm ϕ extra Crank		4	4.14	2	1.58	52.33			
8mm ϕ Stirrups @ 123mm c/c		4	1.16	28	0.39	50.67			
B-2 (250x350) 4-16mm ϕ		3	3.00	4	1.58	56.88			
2-12 mm ϕ extra Crank		3	3.45	2	0.89	18.42			
8mm ϕ Stirrups @ 123mm c/c		3	1.16	28	0.39	38.00			
CB-1 (250x350) 4- 16mm ϕ		5	0.90	4	1.58	28.44			
2-12 mm ϕ extra top		5	0.90	2	1.58	14.22			
8mm ϕ Stirrups @ 123mm c/c		5	1.16	8	0.39	18.10			
Slab Bottom althrough 10mm ϕ @ 240mm c/c		2	3.60	13	0.62	58.03			
Crank +10%		2	3.96	13	0.62	63.84			
Top extra (L/3) 10mm ϕ @ 240mm c/c		2	2	1.20	13	0.62	38.69		
Slab along shorter span Bottom althrough 10mm ϕ @ 240mm c/c		2	3.00	16	0.62	59.52			
Crank +10%		2	3.30	16	0.62	65.47			
Top extra (L/4) 10mm ϕ @ 240mm c/c		2	2	1.00	16	0.62	39.68		
Cantilever slab									

	1. bottom bar			3.90	4	0.62	9.67			
				0.90	17	0.62	9.49			
	top bar			3.90	8	0.62	19.34			
				0.90	34	0.62	18.97			
	2. bottom bar			3.60	4	0.62	8.93			
				0.90	16	0.62	8.93			
	top bar			3.60	8	0.62	17.86			
				0.90	32	0.62	17.86			
	Projection Slab									
	1. bottom bar			8.40	3	0.62	15.62			
				0.30	36	0.62	6.70			
	top bar			8.40	6	0.62	31.25			
				0.30	72	0.62	13.39			
	2. bottom bar			4.20	2	0.62	5.21			
				0.30	18	0.62	3.35			
	top bar			4.20	4	0.62	10.42			
				0.30	36	0.62	6.70			
	Drop slab			9.25	3	0.62	17.21			
				0.35	40	0.62	8.68			
						Total =	1771.69	Kg		
						Total in qtl	17.72	Qntl	11026.00	195347.02
13/1 0.1	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required diameter& length. b Sal wood									
	Ground Floor Door (D)		2	5.1	0.08	0.13	0.11			
	Ground Floor Door (D1)		1	4.95	0.08	0.13	0.05			
						Total =	0.16	Cum	124318.00	19587.54
14/1 0.5	Providing and fixing panelled or panelled and glazed shutters for doors, windows and clerestory windows fixing with butt hinges of required size with necessary screws, excluding panelling which will be paid for separately, all complete as per direction of Engineer-in-charge. (Note:- Butt hinges and necessary screws shall be paid separately) b Sal wood (i) 35 mm thick shutters									
	Ground Floor Door (D)		2	0.9		2.1	3.78			
	Ground Floor Door (D1)		1	0.75		2.1	1.58			
						Total =	5.36	Sq.m	3277.00	17548.34
15/2 7.18	Providing and fixing bright finished brass butt hinges with necessary screws etc. complete: b 125x70x4 mm (ordinary type)									
	All Doors		3	3			9.00	Each	151.00	1359.00

16/2 7.20	Providing and fixing bright finished brass tower bolts (barrel type) with necessary screws etc. complete: b 200x10 mm									
	All Doors	2	3				6.00	Each	299.00	1794.00
17/2 7.27	Providing and fixing bright finished brass handles with screws etc. complete: a 125 mm									
	All Doors	2	3				6.00	Each	204.00	1224.00
18/2 7.24	Providing and fixing bright finished brass night latch of approved quality including necessary screws etc. complete.									
	All Doors	1	3				3.00	Each	977.00	2931.00
19/1 1.22	Providing, fitting and fixing steel windows (including ventilators) of standard rolled steel sections as per relevant I.S. Code, joints mitred and welded with 15x3x100 mm lugs embedded in cement concrete block of M-10 grade including providing and fixing of projecting hinges (not more than 65 mm and not less than 15 mm wide) bolting device, steel handles, pegs, stays of 300 mm long etc. complete including providing 12x12 mm square bars duly welded to steel frame at not more than 12 cm c/c applying a priming coat of red-lead paint etc. complete as per drawing. a Openable									
	Ground Floor W		4	1.20		1.65	7.92			
	Ground Floor W1		1	0.60		1.20	0.72			
						Total =	8.64	Sqm	3941.00	34050.24
20/1 1.19	Providing & fixing glass panes with putty and glazing clips in steel doors, windows, clerestory windows, all complete with: b 5.5 mm thick glass panes									
	Quantity as sl no. 19/11.22						8.64	Sqm	1563.00	13504.32
21/1 2.8	Cement concrete floor topping 1:1:2 (1 cement: 1 coarse sand: 2 stone aggregate) finished with a floating coat of neat cement, including cement slurry, complete. b 20 mm thick									
	Ground Floor		2	3.60	3.00		21.60			
	Veranda		1	3.90	0.90		3.51			
						Total =	25.11	Sqm	377.00	9466.47
22/1 6.12	Applying priming coat: a With ready mixed pink or Grey primer of approved brand and manufacture on wood work (hard and soft wood)/ with ready mixed aluminium primer of approved brand and manufacture on resinous wood and plywood									
	Quantity as sl no. 14/10.5 multiplying factor (2.6)			5.36	2.6		13.92	Sqm	54.00	751.84

23/1 6.22	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications, including scaffolding: b Painting wood work with Deluxe Multi Surface Paint of required shade. Two or more coats applied @ 0.90 ltr/10 sqm over an under coat of primer applied @ 0.75 ltr/10 sqm of approved brand and manufacture									
	Quantity as sl no. 14/10.5 multiplying factor (2.6)			5.36	2.6		13.92	Sqm	140.00	1949.22
24/1 6.22	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications, including scaffolding: c Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @ 0.80 ltr/10 sqm of approved brand and manufacture									
	Quantity as sl no. 19/11.22 multiplying factor (0.67)			8.64	0.67		5.79			
						Total =	5.79	Sqm	116.00	671.50
25/1 6.11	Applying one coat of water thinnable cement primer of approved brand and manufacture on surfaces: Water thinnable cement primer									
	Quantity as Sl. No 11/15.3 (plaster)						192.73			
						Total =	192.73	Sqm	56.00	10792.88
26/1 6.19	Wall painting with acrylic emulsion paint of approved brand and manufacture to give an even shade: New work (two or more coats)									
	Quantity as Sl. No 11/15.3 (plaster)						192.73			
						Total =	192.73	Sqm	105.00	20236.65
Total =									7,51,614.49	
Add Electrification L.S =									15,000.00	
Add Water Supply & Sanitary Fittings @ 7.5 % =									56,371.09	
Grand Total =									8,22,985.58	
Say =									8,23,000.00	

SECTION - IX
BILL OF QUANTITIES (BOQ)

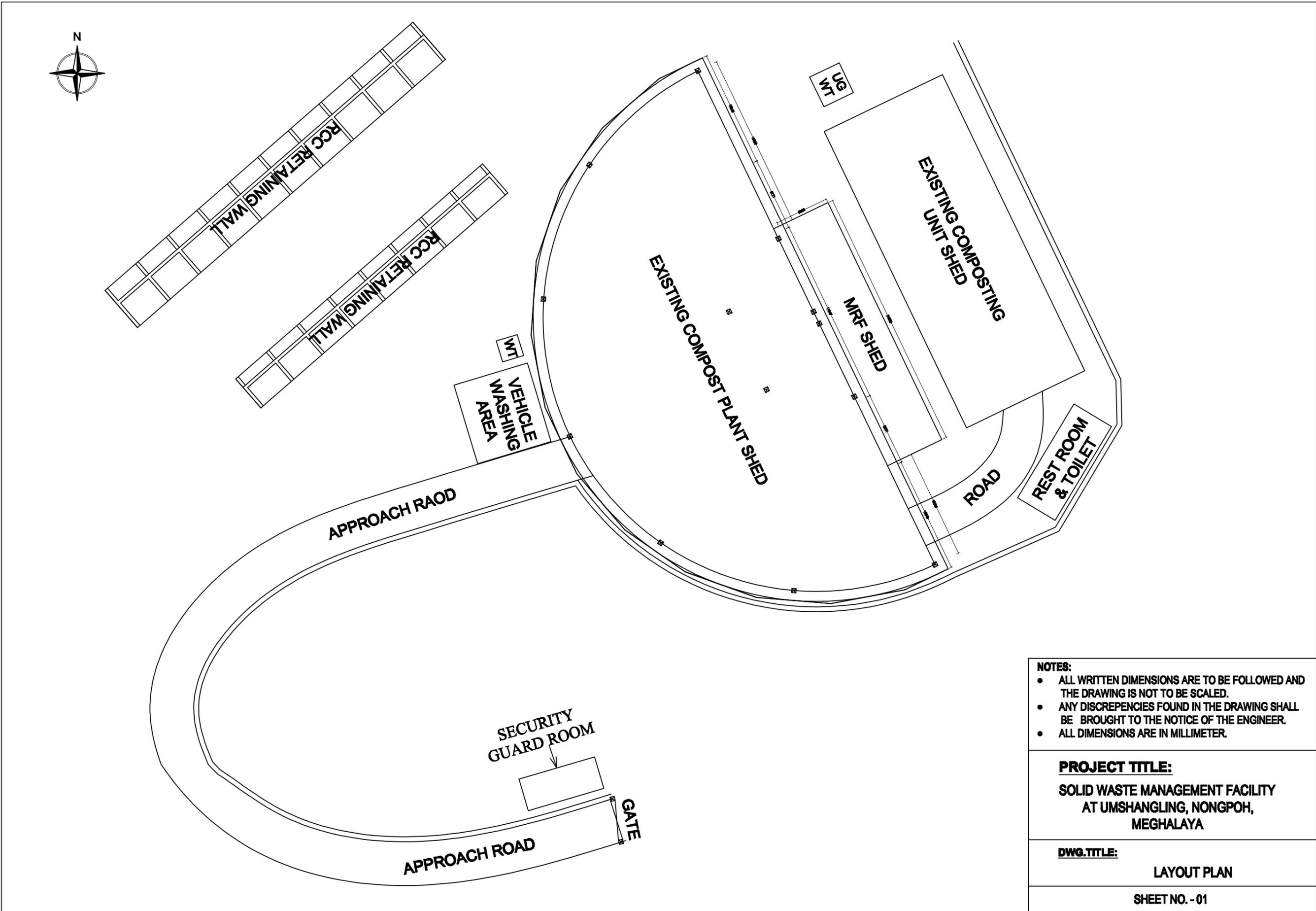
Estimate based on MPWD Schedule of Rates (Building) 2021-22

Sl. No.	Particulars	Nos	L	W	H/D	Qty.	Unit	Rate	Amount in Rs
	CIVIL WORK - WATER TANK								
1/2.1	Earthwork in excavation by manual means up to a depth of 2m below the existing ground level for foundation trenches of foundations, footings of column/ walls, retaining walls, septic tank etc. including bailing out water where necessary and removal of surplus earth with all lead and lifts as directed and specified for the following classification of soils. b In ordinary rock (soft rock/ medium rock/ hard shale)								
	Water tank	1	3.8	1.8	2.70	18.47			
					Total =	18.47	Cum	414.00	7645.75
2/12.5	Providing soling with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering, complete. b Stone soling (i) 100 mm								
	Water tank	1	3.80	1.80		6.84			
					Total =	6.84	Sqm	415.00	2838.60
3/6.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement- All work up to plinth level: b M20 or 1:1½:3 (1 cement: 1½ coarse sand: 3 graded stone aggregate 20 mm nominal size)								
	Water tank (base slab)		3.80	1.80	0.10	0.68			
	Wall	2	3.80	0.15	2.50	2.85			
		2	1.80	0.15	2.50	1.35			
	cover slab		3.80	1.80	0.10	0.68			
	PCC for Proper Drainage of water with proper Slope (Vehicle Wash)		7.00	7.50	0.10	5.25			
			21.50	0.15	0.15	0.48			
					Total =	11.30	Cum	9336.00	105513.14
4/4.16	Centering and shuttering including strutting, propping etc. and removal of form for all heights complete and as directed by Engineer in charge. Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12 mm thick								
	Wall	2	3.80		2.50	19.00			
		2	1.80		2.50	9.00			
	cover slab		3.80	1.80		6.84			
					Total =	34.84	Sqm	595.00	20729.80

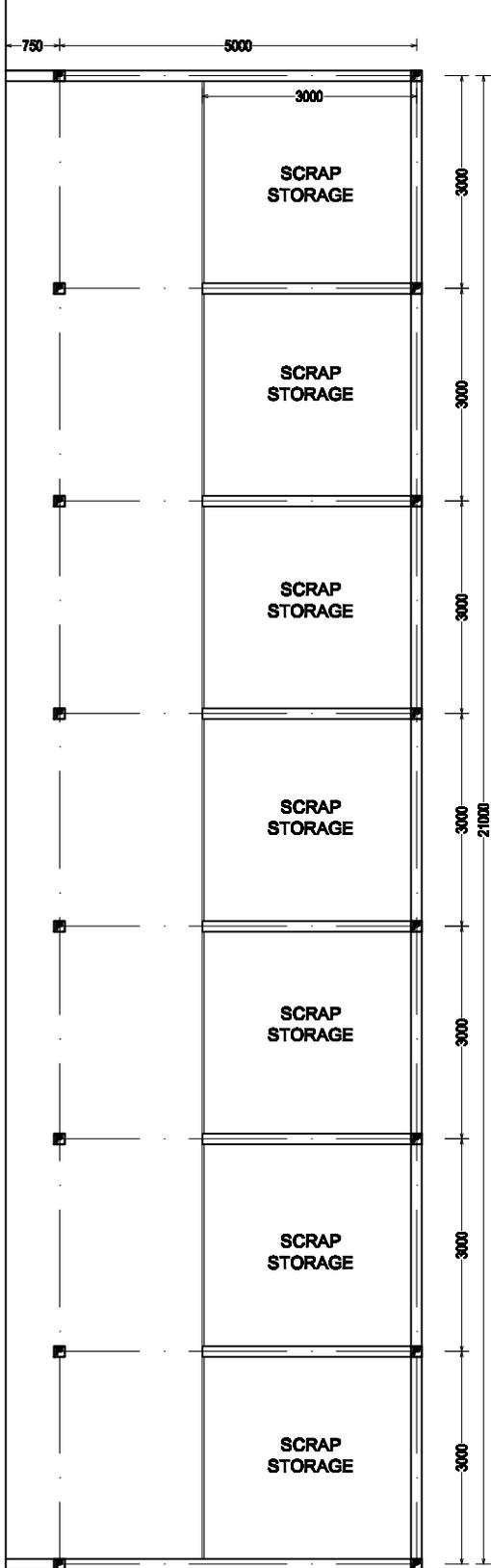
5/	CEMENT PLASTER (IN FINE SAND)									
15.3	20 mm cement plaster of mix: (a) 1:4 (1 cement: 4 fine sand)									
	Wall		2	3.50		2.50	17.50			
			2	1.50		2.50	7.50			
	Bottom and Top slab		2	3.50	1.50		10.50			
	Staging		1	2.00	2.00		4.00			
			4	2.00		1.50	12.00			
						Total =	51.50	Sqm	331.00	17046.50
6/	Supplying, fitting and fixing in position reinforcement bars up to 1st floor level, conforming to relevant I.S. Code for R.C.C. work/ R.B. walling including straightening, cleaning, cutting and bending to proper shapes and length as per details, supplying and binding with 20 G annealed black wire and placing in position with proper blocks, supports, chairs, spacers etc. complete. (Rates inclusive of all wastage, lappage, hooks, chairs, anchorage etc. and no measurement for the same is required) c Thermo-Mechanically Treated bars									
6.11										
		Nos	L/H	Nos of bar	W/kg	Total	Unit	Rate	Amount	
	SUB STRUCTURE									
	Base slab jali - 12mmdia @ 125mmc/c		3.80	12	0.89	40.58				
			1.65	26	0.89	38.18				
	Wall vertical bar - 12mmdia @ 250mmc/c double	2	2.60	45	0.89	208.26				
	Wall Horizontal bar - 10mmdia @ 250mmc/c double	2	10.90	11	0.62	148.68				
	Slab Cover bottom & top 10mm @ 240mm C/C	1	3.80	8	0.62	18.848				
		1	1.65	17	0.62	17.391				
	Slab Cover bottom & top 10mm @ 240mm C/C	1	3.80	16	0.62	37.696				
		1	1.65	34	0.62	34.782				
	16mm bar for Steps	1	1.20	7	1.58	13.272				
					Total =	557.69				
				Total in quintals		5.58	Qntl	11026.00	61490.90	

7/ 8.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement: 6 coarse sand:12 graded stone aggregate 20 mm nominal size) upto plinth level with: a. Cement mortar 1:6 (1 cement : 6 coarse sand).									
	Syntex Staging		1	2.00	2.00	1.50	3.00			
						Total =	3.00	Cum	6098.00	18294.00
8/21. 10	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings. This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge. (iii)25 mm nominal outer diameter Pipes									
	CPVC Pipes			30			30.00	Rm	331.00	9930.00
9/21. 18	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end): c 32 mm nominal bore.									
	gate valve			4			4.00	Each	591.00	2364.00
10/ 17 Ch3	Water Storage tank									
				1000			1000.00	lit	10.00	10000.00
11	Water Pump 2 HP									
				1			1.00	Each	15000.00	15000.00
12	High Pressur Water spray Pump (GeM)									
				2			2.00	Each	6000.00	12000.00
									Total =	2,82,852.69
									Say =	2,82,900.00

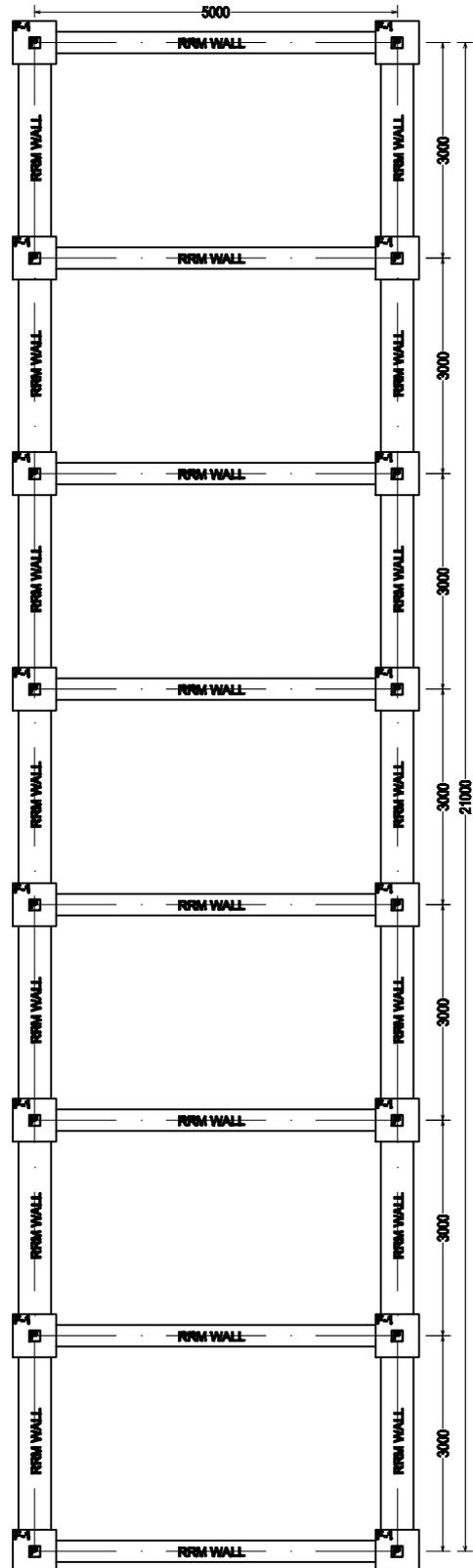
SECTION - X TECHNICAL DRAWINGS



<p>NOTES:</p> <ul style="list-style-type: none"> ALL WRITTEN DIMENSIONS ARE TO BE FOLLOWED AND THE DRAWING IS NOT TO BE SCALED. ANY DISCREPANCIES FOUND IN THE DRAWING SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER. ALL DIMENSIONS ARE IN MILLIMETER.
<p>PROJECT TITLE:</p> <p style="text-align: center;">SOLID WASTE MANAGEMENT FACILITY AT UMSHANGLING, NONGPOH, MEGHALAYA</p>
<p>DWG.TITLE:</p> <p style="text-align: center;">LAYOUT PLAN</p>
<p style="text-align: center;">SHEET NO. - 01</p>



MATERIAL RECOVERY FACILITY PLAN



POST FOUNDATION AND RRM WALL LAYOUT

NOTES:

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- ALL DIMENSIONS ARE IN MILLIMETER.

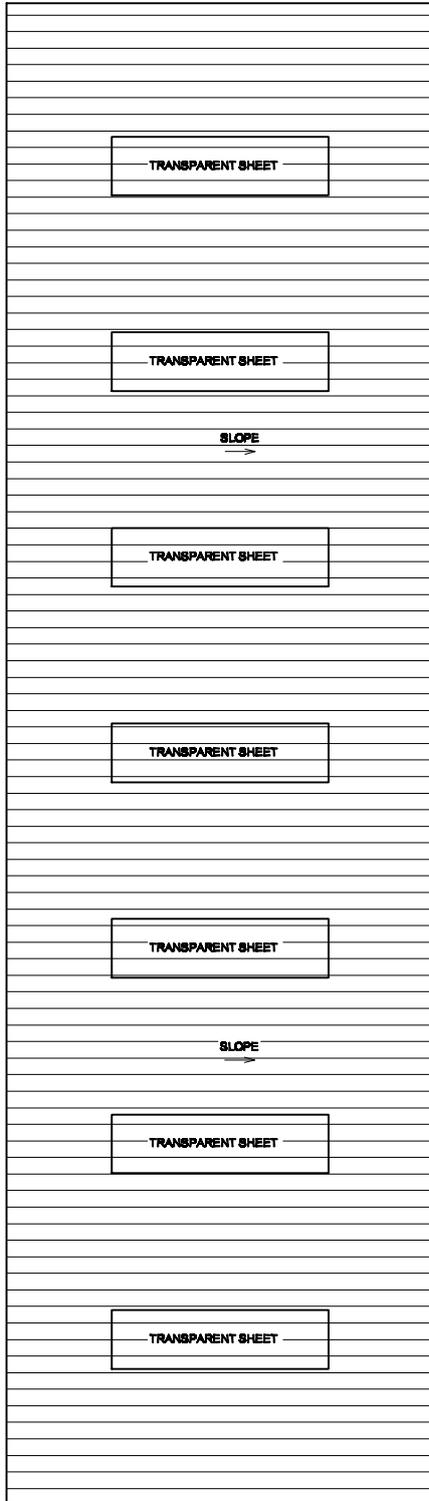
PROJECT TITLE:

SOLID WASTE MANAGEMENT FACILITY
AT UMSHANGLING, NONGPOH,
MEGHALAYA

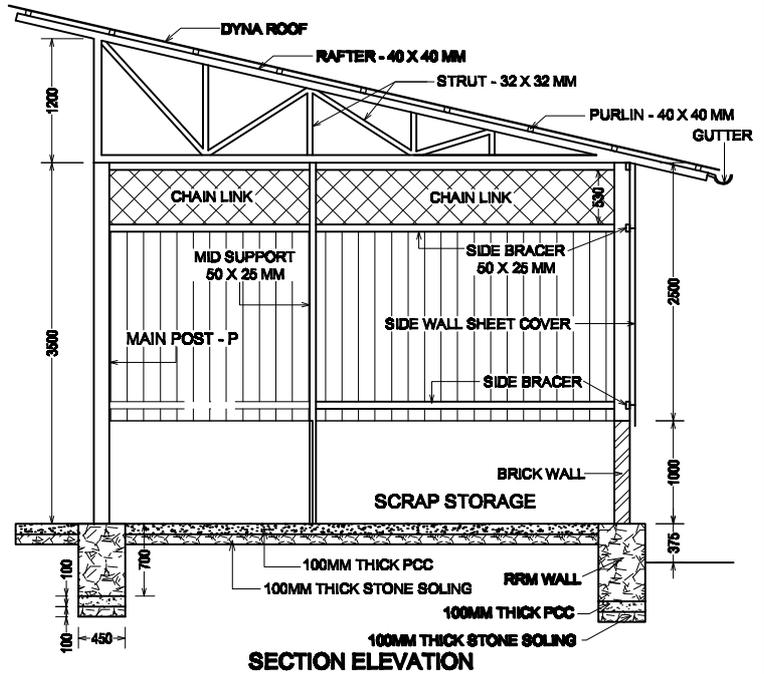
DWG. TITLE:

MATERIAL RECOVERY FACILITY
PLAN

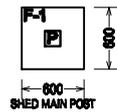
SHEET NO. - 02



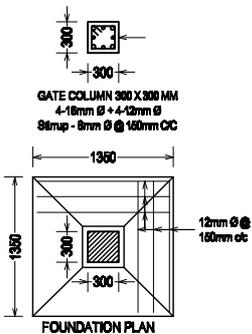
ROOF PLAN



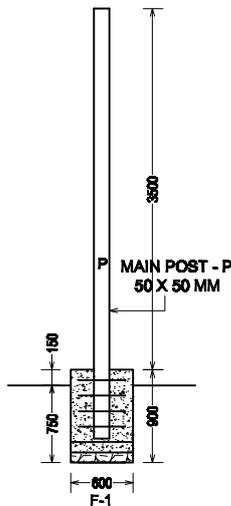
SECTION ELEVATION



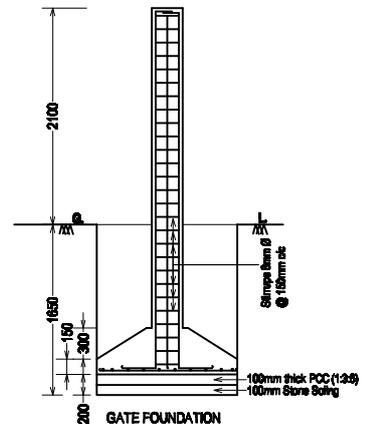
SHED MAIN POST



FOUNDATION PLAN



P MAIN POST - P
50 X 50 MM



GATE FOUNDATION

NOTES:

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- ALL DIMENSIONS ARE IN MILLIMETER.

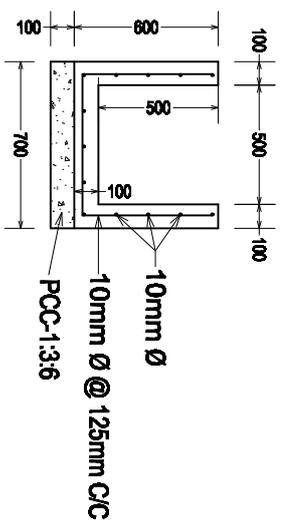
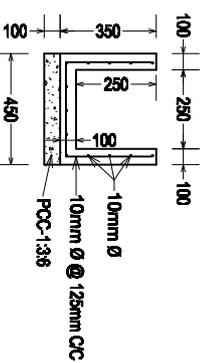
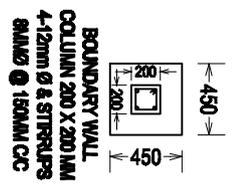
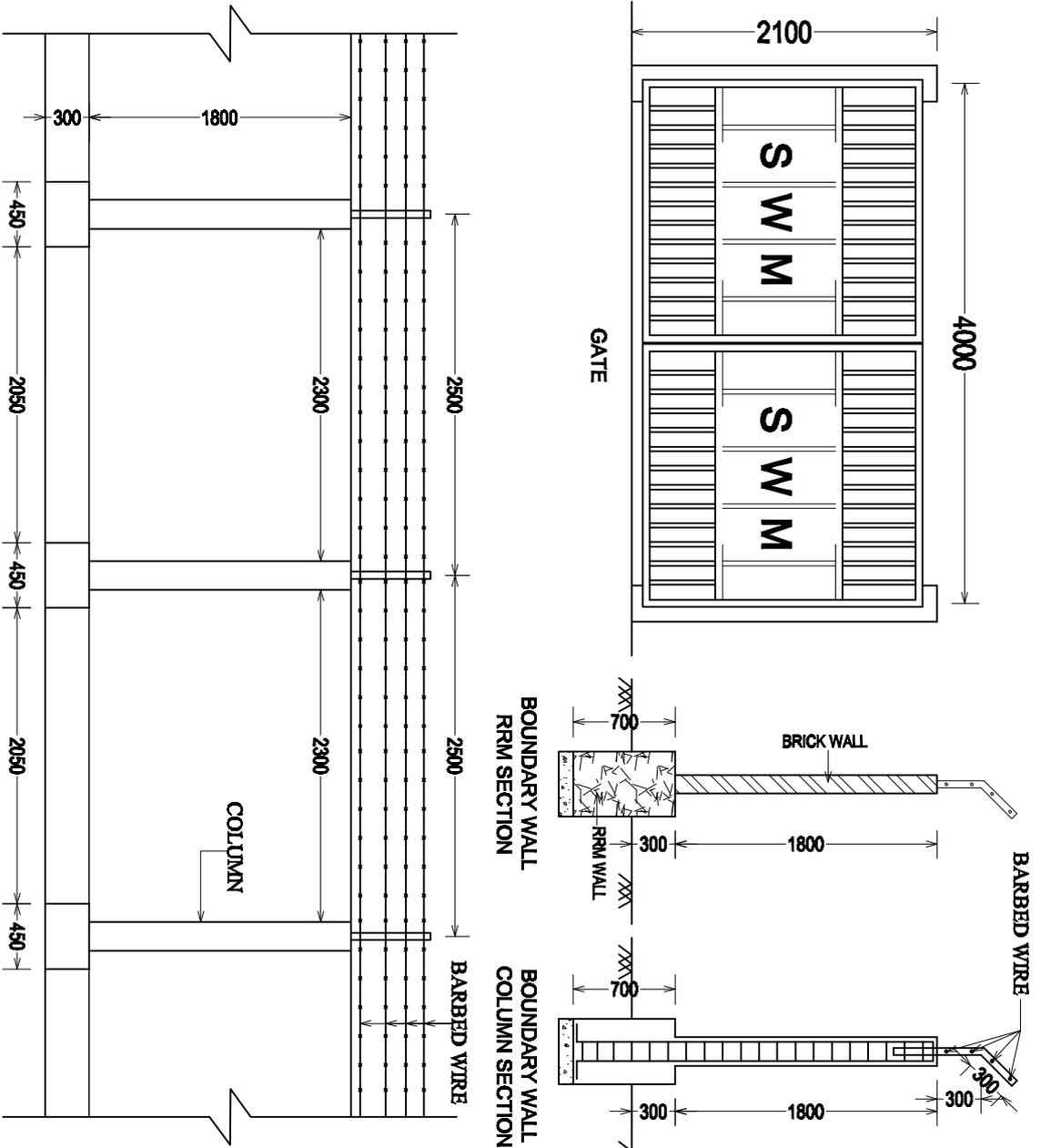
PROJECT TITLE:

SOLID WASTE MANAGEMENT FACILITY
AT UMSHANGLING, NONGPOH,
MEGHALAYA

DWG. TITLE:

MATERIAL RECOVERY FACILITY
ROOF PLAN & SECTION ELEVATION
AND GATE FOUNDATION

SHEET NO. - 03



NOTES:

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- ANY DISCREPANCIES FOUND IN THE DRAWING SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER.
- ALL DIMENSIONS ARE IN MILLIMETER.

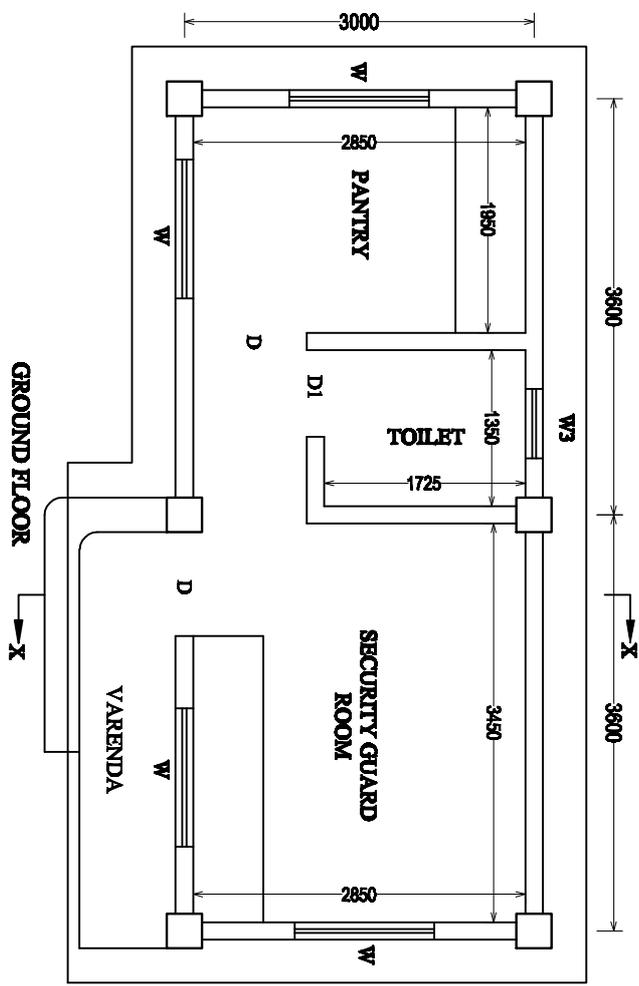
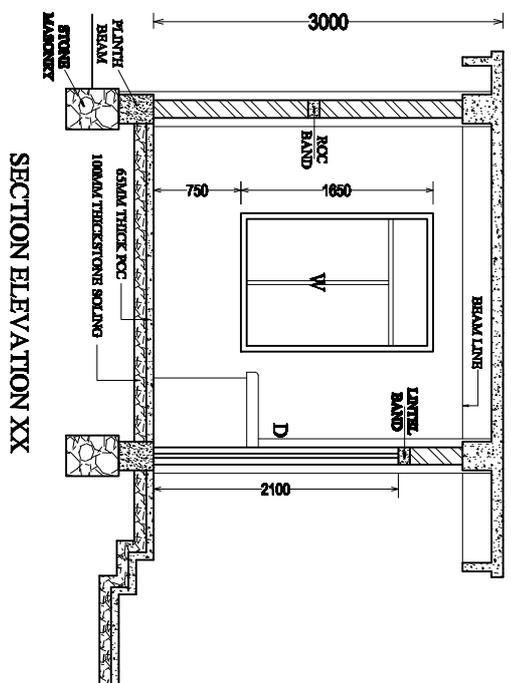
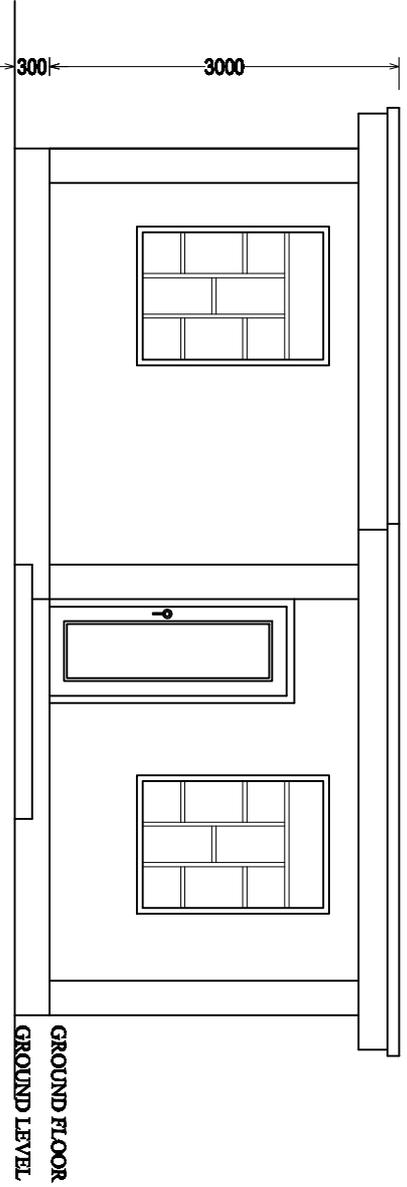
PROJECT TITLE:

SOLID WASTE MANAGEMENT FACILITY
AT UMSHANGLING, NONGPOH,
MEGHALAYA

DWG. TITLE:

BOUNDARY WALL, GATE & DRAIN

SHEET NO. - 04

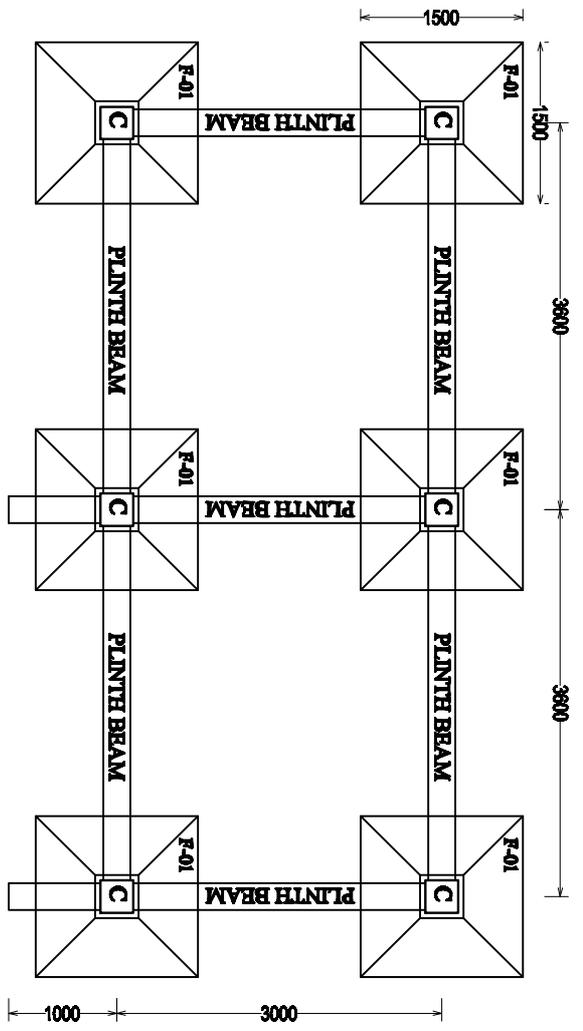


- NOTES:**
- ALL WRITTEN DIMENSIONS ARE TO BE FOLLOWED AND THE DRAWING IS NOT TO BE SCALED.
 - ANY DISCREPANCIES FOUND IN THE DRAWING SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER.
 - ALL DIMENSIONS ARE IN MILLIMETER.

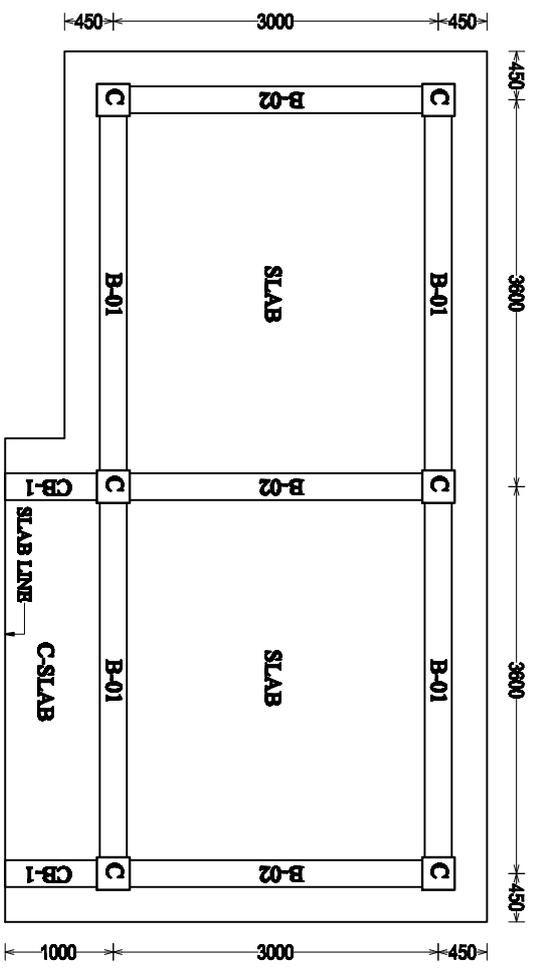
PROJECT TITLE:
 SOLID WASTE MANAGEMENT FACILITY
 AT UMSHANGLING, NONGPOH, MEGHALAYA

DWG. TITLE:
 SECURITY GUARD ROOM
 PLAN & ELEVATION

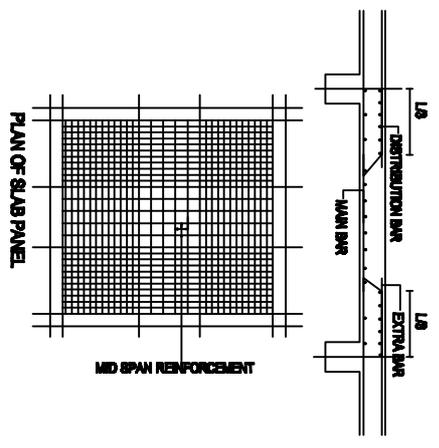
SHEET NO. - 05



FOUNDATION AND PLINTH BEAM LAYOUT PLAN



BEAM LAYOUT PLAN



- NOTES:**
- ALL WRITTEN DIMENSIONS ARE TO BE FOLLOWED AND THE DRAWING IS NOT TO BE SCALED.
 - ANY DISCREPANCIES FOUND IN THE DRAWING SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER.
 - ALL DIMENSIONS ARE IN MILLIMETER.

PROJECT TITLE:

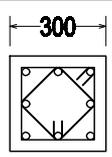
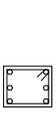
SOLID WASTE MANAGEMENT FACILITY
AT UMSHANGLING, NONGPOH, MEGHALAYA

DWG. TITLE:

SECURITY GUARD ROOM
STRUCTURE DETAILS

SHEET NO. - 08

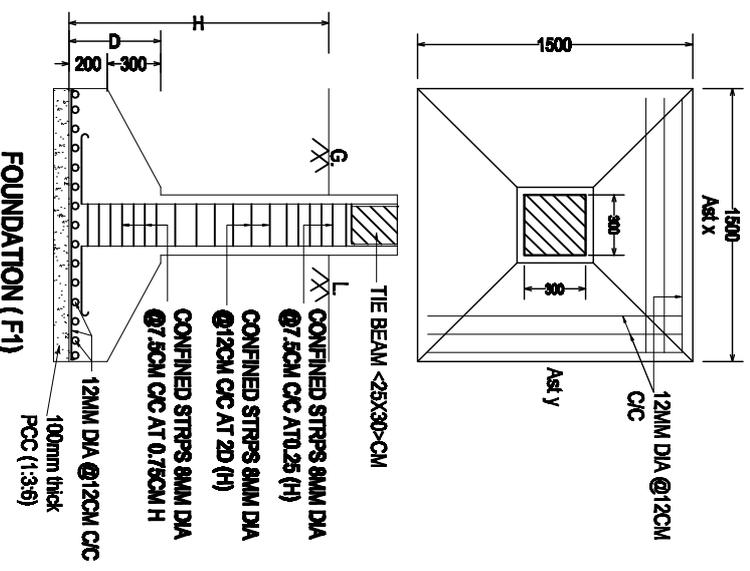
Detail of beam

SCHEDULE OF COLUMN		Beam	Size	reinforcement detail
COLUMN TYPE ↓ FLOOR LVL ↑ FDN. LVL TO FIRST FLOOR LVL	COLUMN - C1 	PLINTH BEAM	250x300	
		B-01	250x350	near the support at the midspan
		B-02	250x350	
		CB-01	250x350	

8MM DIA LATERAL TIES @12CM C/C, AND TO BE CONFINED @7.5CM OVER A LENGTH OF 75CM FROM JUNCTION TOWARDS MID HEIGHT.

NOTE : COLUMN CLEAR COVER 40mm

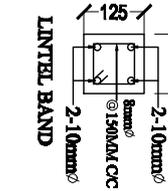
NOTE : BEAM CLEAR COVER 25mm



FOUNDATION (F1)

SCHEDULE OF FOOTING

FOOTING TYPE	L	B	D	As _t -x-x	As _t -y-y	FDN. DEPTH
F-01	1500	1500	500	12MM DIA @12CM C/C	12MM DIA @12CM C/C	MINIMUM DEPTH 1.05 M, TO BE ADJUSTED DEPENDING UPON THE SITE CONDITION

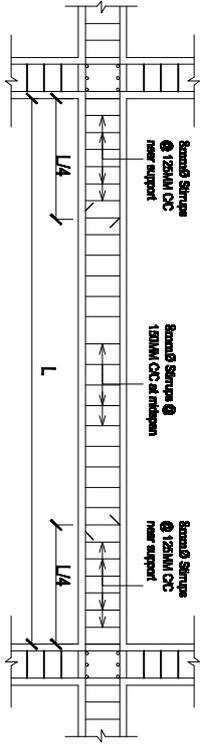


LINTEL BAND

SLAB REINFORCEMENT TABLE

SLAB THICKNESS	X- DIRECTION				Y- DIRECTION			
	MID SPAN	AT SUPPORT	MID SPAN	AT SUPPORT	MID SPAN	AT SUPPORT	MID SPAN	AT SUPPORT
ALL SLAB	10 CM	NIL	10MM DIA BAR @12CM C/C	10MM DIA BAR @24CM C/C	NIL	10MM DIA BAR @12CM C/C	10MM DIA BAR @12CM C/C	10MM DIA BAR @24CM C/C

BEAM DETAIL



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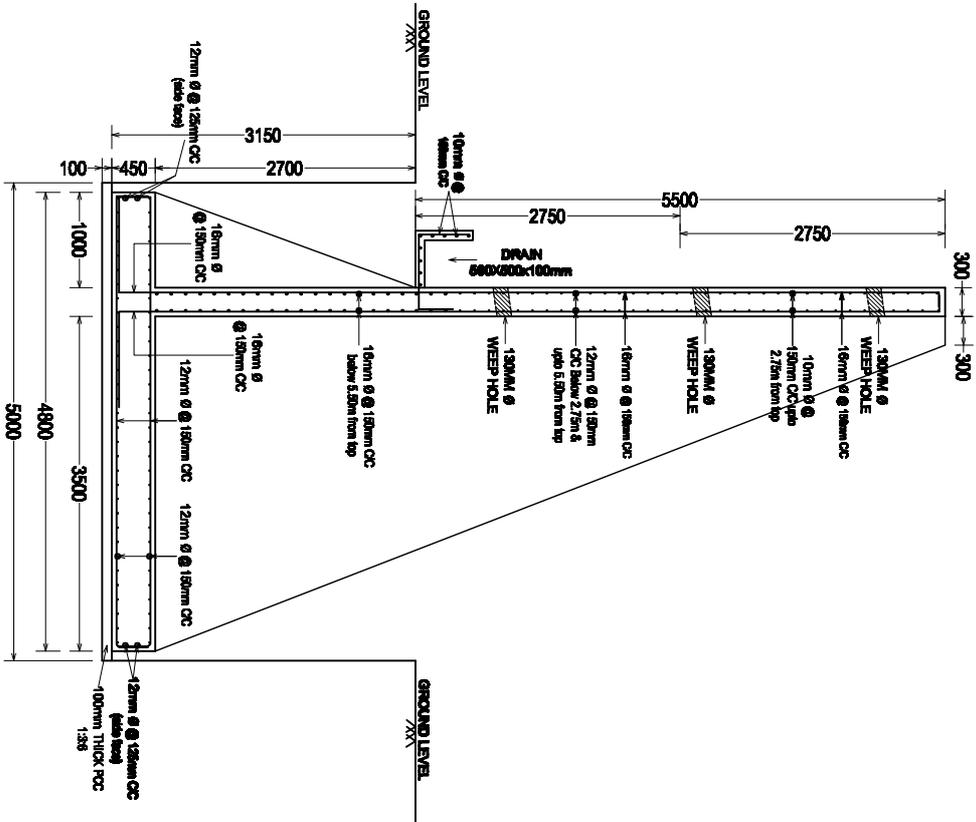
PROJECT TITLE:

SOLID WASTE MANAGEMENT FACILITY AT UMSHANGLING, NONGPOH, MEGHALAYA

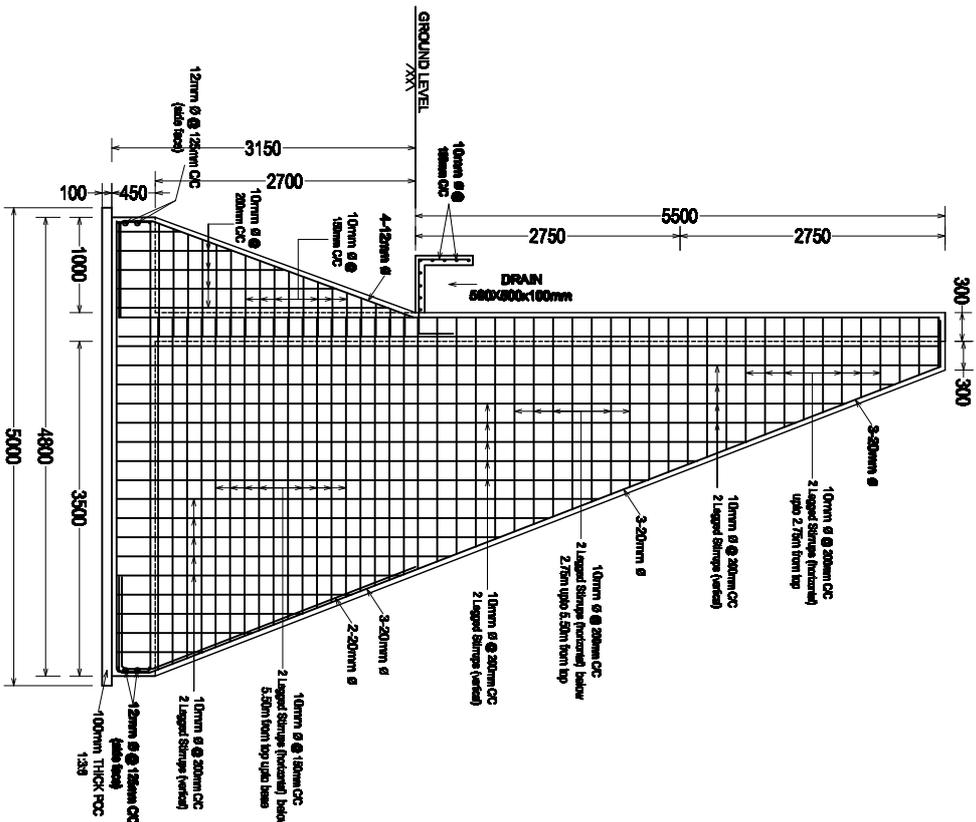
DWG TITLE:

SECURITY GUARD ROOM STRUCTURE DETAILS

SHEET NO.- 07



STEM WALL AND RAFT DETAILS



COUNTER FORT - HEEL AND TOE DETAILS

RCC RETAINING WALL SECTION ELEVATION STEEL REINFORCEMENT DETAILED FOR 8.65M HEIGHT

- NOTES:**
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PROJECT TITLE:
SOLID WASTE MANAGEMENT FACILITY
AT UMSHANGLING, NONGFOH,
MEGHALAYA

DWG. TITLE:
RCC COUNTERFORT RETAINING WALL
8.65M HEIGHT

SHEET NO. - 08

