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## Tashi InfoComm Private Limited

Ref: TIPL/SPPD/Civil-04/2025/

Date: 09-01-2025

To,

The Aspiring Bidder/s

**Sub: Requesting quotation for Construction of Tower Foundations and Site Development Works at Ney and Phetakha**

Sir/madam,

Tashi InfoComm Private Ltd. would like to invite your firm to provide your quotations for the above-mentioned work.

A complete set of bidding documents (*Standard bidding document, drawings, bid declaration form and BoQ*) can be downloaded from the Tashicell website (<https://www.tashicell.com>, Tender/announcement) from **09/01/2025 to 20/01/2025**. The last date of submission is on **20/01/2025** until 01:00 pm and shall be opened on same day at 2:00 pm at TIPL NetOps Building, Thimphu.

The Bidder/s must submit 2% bid security with the bid and must submit 10% performance security in the form of Demand Draft or Bank Guarantee after the issuance of letter of acceptance, drawn in favor of the Managing Director, Tashi InfoComm Private Limited, Samten Lam, Thimphu.

You are requested to go through all the bidding documents and sign with seal in every page and submit the bid/s accordingly with the guidelines for documentation/submission of bids which are attached herewith.

Sincerely,

Karma Wangchuk

Technical Officer, Civil Section

**77376779 Extn- 8805**

[civil@tashicell.com](mailto:civil@tashicell.com)



+975 77889977



P.O Box 1502, Samten Lam, Thimphu, Bhutan



<https://www.tashicell.com>



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# Tashi InfoComm Private Limited

## Guidelines for Documentation/Submission of bids: -

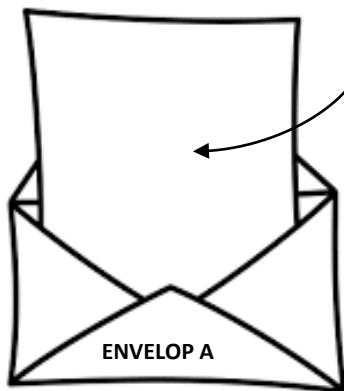
1. The Bid must consist of **one envelop (Envelop A)** and shall be marked as follows:
  - a. Envelop A

### **Tender for:**

*“CONSTRUCTION OF TOWER FOUNDATIONS AND SITE DEVELOPMENT WORKS  
AT NEY AND PHETAKHA ”*

***‘Do Not Open Before 2:00 Pm (Bst), 20<sup>th</sup> Jan 2025.***

1. The bidder shall submit only the original bid (only one copy) and it is not necessary to submit a duplicate copy.



- |      |   |
|------|---|
| I.   | Bidding documents                                     |
| II.  | Bill of Quantity (BoQ)                                |
| III. | Drawings  |
| IV.  | Trade license   |
| V.   | Contractor Registration certificate (CDB certificate) |
| VI.  | Tax clearance certificate                             |
| VII. | Experience certificate (if available)                 |



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**Tashi InfoComm Private Ltd.**

**BIDDING DOCUMENT**

**FOR “CONSTRUCTION OF TOWER FOUNDATIONS AND SITE  
DEVELOPMENT WORKS AT NEY AND PHETAKHA”**

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## Section – I Invitation of Bids

1. Tashi InfoComm Private Limited invites limited tender from the eligible Bhutanese Contractors who have **W4-category, Power and telecommunications works (Classification-Small)**, holding valid license for work of *Site Development and Construction of Foundations for Telecommunication Structures* as mentioned below.

SL.No.	Package	Dzongkhag	Site Name after survey by SPPD	Tower height	Bid Security (Mandatory)
1	1	Lhuntse	Ney	35	16,637.891
2		Wangdi	Phethekha	15	

2. A complete set of bidding documents can be downloaded from the Tashicell website (<https://www.tashicell.com>, **Tender/announcement**) from **09/01/2025 to 20/01/2025**. The last date of submission is on **20/01/2025** until **01:00 pm** and shall be opened on same day at **2:00 pm** at TIPL NetOps Building, Thimphu.
3. **The Bidder/s must submit 2% bid security with the bid and must submit 10% performance security in the form of Demand Draft or Bank Guarantee after the issuance of letter of acceptance**, drawn in favor of the **Managing Director, Tashi InfoComm Private Limited, Norzin Lam, Thimphu**.
4. Late applications will be rejected and returned unopened to the bidder. It is the sole responsibility of the bidders to ensure delivery of their bids before the time stated above.
5. The Employer will not be responsible for costs or expenses incurred by bidders in connection with the preparation or delivery of bids.
6. The Employer reserves the right to cancel/withdraw the invitation for Bids without assigning any reason and shall bear no liability whatsoever consequent upon such a decision.
7. Invited bidders may obtain further information, if required, from the office of the Technical Officer, Civil at the address as provided under Para 10.0 below.
8. The sealed bids and any other correspondence including clarification requests shall be addressed to the following address:

**Karma Wangchuk**  
(Technical Officer, Civil Section)  
**TASHI INFOCOMM PRIVATE LIMITED**  
Phone: +97577376779 Extn- 8805  
Email: [civil@tashicell.com](mailto:civil@tashicell.com)

## **Section – II**

### **Instructions to Bidders (ITB)**

#### **A. General**

##### ***1. Scope of Bid***

1.1 The Scope of bid shall include Construction of Foundations and Site Development works for Telecommunication structures.

Throughout these Tender documents, the terms “writing” means any handwriting, typewritten, or printed communication, including telex, cable and facsimile transmission, and “day” meaning a calendar day. Singular also means plural. The word “bid” is synonymous to “tender” and the words “bidding documents” synonymous to “tender documents.”

***The scope of work in brief shall include RCC works, ground leveling, Chain-link, concertina and barbed wire fencing, supply and construction of foundation for tower, APM and Solar base.***

1.2 Commissioning for the purpose of the Work Schedule shall mean successful completion of all site tests on all the goods and services that shall be installed by the Contractor after the successful pre-commissioning tests as per technical specifications.

1.3 Operational Acceptance for the purpose of work schedule shall mean successful completion of the Site Acceptance Test (SAT) and submission of all documents as per the contract.

##### ***2. Source of Funds***

2.1 Tashi InfoComm Private Ltd. shall wholly finance the works/supply of goods named in the Invitation to Bid under the contract for which these tender documents are issued.

##### ***3. Eligibility***

3.1 Works and supply of goods shall be contracted depending upon the qualification and evaluation of the bidders and their bids. One bidder may bid for more than one package.

3.2 The invitation to Bid is open to only selected bidders having valid license and CDB certifications.

3.3 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices.

3.4 A bidder shall not have a conflict of interest. All bidders found to be in conflict of interest shall be disqualified. A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if they:

- a) have controlling shareholders in common; or
- b) receive or have received any direct or indirect subsidy from any of them or
- c) have the same legal representative for purposes of this Bid; or
- d) have a relationship with each other directly or through common third parties, that puts them in position to have access to information about or influence on the Bid of another bidder, or influence the decisions of the Employer regarding this bidding process; or
- e) Submit more than one bid in this bidding process
- f) Participate as a consultant to other bidders in the preparation of the design or technical specifications of goods and related services that are subject to the Bid.

3.5 Bids submitted by a joint venture of two or more firms as partners shall comply with the following requirements:

- (a) The bid, and in case of the successful bid, the Form of Agreement, shall be signed so as to be legally binding on all partners;
- (b) One of the partners shall be authorized to be in charge; and shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners;
- (c) The partner in charge shall be authorized to incur liabilities and receive instructions for and on behalf of any or all partners of the joint venture and entire execution of the contract including payment shall be done exclusively with the partner in charge;
- (d) All partners of the joint venture shall be jointly and severally liable for the execution of the contract in accordance with the contract terms, and relevant statement to this effect shall be included in the authorization mentioned under (b) above as well as in the Bid Form and the Form of Agreement (in case of a successful bid); and
- (e) A copy of the agreement entered into by the joint venture partners shall be submitted with the bid.

**4. Eligible Goods and Services**

4.1 The provision and use of the Goods and services shall not infringe or violate any industrial property or intellectual property rights or claim of any third party.

**5. Cost of Bidding**

5.1 The Bidder shall bear all costs associated with the preparation and delivery of its Bid, and the Employer will in no case be responsible or liable for those costs.

**6. Site Visit**

6.1 **The free walking distance provided may or may not be accurate since it's a one-man study and the Bidder, at the Bidder's own responsibility and risk, is encouraged to visit the sites of works and its surroundings to obtain any information that may be necessary for preparing the Bid and a contract for the Works. The cost of visiting the sites shall be at the Bidder's own expense. The Employer will assist in arranging site visits.**

**B. The Bidding Documents**

**7. Bidding Documents**

7.1 The Goods and Services required, Bidding procedures and Contract terms are prescribed in the Bidding Documents comprising of the following:

- i) Invitation of Bids ----- Section-I
- ii) Instruction to Bidders (ITB) ----- Section-II
- iii) Commercial Conditions of Contract----- Section-III
- iv) Technical Specifications----- Section IV
- v) Contract Forms----- Section –V
- vi) Bill of Quantity, Site information  
and drawings----- Section –VI

7.2 The Bidder is expected to examine the Bidding Documents, including all instructions, forms, terms and specifications. Failure to furnish all information required by the Bidding Documents or submission of a Bid not substantially responsive to the bidding documents in every respect will result in rejection of the Bid.

**8. Clarification of Bidding Documents**

8.1 Invited Bidders requiring any further information or clarification of the Bidding Documents may notify the Employer in writing or by fax at the contact address indicated in the Invitation of Bids. Telephone and email enquiries will not be accepted. The Employer will respond in writing to any request for information or clarification of the Bidding Documents, which it receives no later than five (5) calendar days prior to the deadline for the submission of Bids prescribed in clause no. 20. The anonymous questions and the Employer's response will be sent in writing or by fax to all



prospective Bidders who have been provided with bidding documents without naming the originator of the clarification within one week after receipt of the request for information

### ***9. Amendment of Bidding Documents***

- 9.1 At any time prior to the deadline for submission of Bids, the Employer may for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents by amendment.
- 9.2 The amendment shall be part of the bidding documents and will be notified in writing or by fax to all prospective Bidders who have received the bidding documents and will be binding on them.
- 9.3 To afford prospective bidders reasonable time in which to take the amendment into account for preparing their bids the Employer may at its discretion, extend the deadline for the submission of Bids.

### **C. Preparation of Bids**

#### ***10. Language of Bid***

10.1 The Bid prepared by the Bidder, and all correspondence and documents relating to the Bid exchanged by the Bidder and the Employer, shall be written in English. Any printed literature furnished by the Bidder may be written in another Language, provided that this literature is accompanied by an English translation, in which case, for purposes of interpretation of the Bid, the English translation shall govern.

#### ***11. Documents Comprising the Bid***

- 11.1 The Bid prepared by the Bidder shall comprise the following components:
- 11.2 Bid Forms and other Schedules completed in accordance with clause 12, 13, 14 and Technical Specifications;
- 11.3 Compliance statement to bidding documents in accordance to clause 15; The Employer shall treat that the bidder has complied to all the clauses if the form is not filled up.
- 11.4 Documentary evidence establishing, in accordance with clause 17, that the Goods and Services to be supplied by the Bidder conform to the Bidding Documents;
- 11.5 Power of Attorney indicating that the person(s) signing the Bid have the authority to sign the Bid and thus that the Bid is binding upon the Bidder during the full period of its validity, in accordance with clause 20.

#### ***12. Bid Form***

12.1 The Bidder shall complete an original Bid Form and the appropriate price, BOQ Bid Schedule and other Schedules furnished in Section-V. All the necessary forms required for bidding shall be submitted along with the bid.

#### ***13. Bid Prices***

- 13.1 The bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or prices is entered by the bidder will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities.
- 13.2 All duties, taxes and other levies payable by the contractor under the Contract, or any other Clause, shall be included in the rates and the total bid price submitted by the bidder, and the evaluation and comparison of bids by the Employer shall be made accordingly.
- 13.3 The rates and prices quoted by the bidder are fixed for the duration of the Contract and not subject to adjustment during the performance of the Contract.

#### ***14. Bid Currencies***

14.1 All unit rates and prices shall be quoted only in Ngultrum.

**15. Compliance to Bidding Document**

15.1 The Bidder shall provide a Table of Compliance statement. If this information is not provided, the Employer shall treat that the bidder has complied with all the clauses of this document.

**15.2 Sufficiency of Contract Price**

15.2.1 The Contractor shall be deemed to have satisfied himself and in his Bid taken into account:

- i. all the conditions and circumstances affecting the Contract Price;
- ii. the possibility of carrying out the Works as described in the Contract;
- iii. the general circumstances at the Site and weather conditions during the contract period;
- iv. the general labor position at the Site;
- v. With respect to the above provision, the Contractor shall be deemed to have also satisfied himself, before bidding, with
  - a) existing conditions, nature of existing roads and bridges and other means of access to the Site;
  - b) Presence of artificial obstructions on ground, underground or in air; boulders, or released water and structures constructed for the existing telecommunication facilities, or of the like.
  - c) Stability of existing slopes in the Site.
  - d) nature of the surface and sub-surface on or in which the Works are to be executed or in the immediate vicinity of the Works, and the nature and extent of surface water or water contained in the sub-soil by which the Works may be affected under all possible climatic conditions.
- vi. If the Specification does not contain particulars of materials and Works, which are obviously necessary for the proper completion of the Works, all such materials and works shall be supplied and executed by the Contractor without any extra charge. The Contractor shall be responsible for checking the information given in writing by the Employer for obvious omissions or inconsistencies, and for his interpretation of information received from whatever source.

**16. Bid Security**

16.1 The bidder is mandatory to provide 2% bid security and the 10% performance security after the letter of acceptance.

**17. Period of validity of Bids**

17.1 In accordance to clause 16.

**18. Format and Signing of Bid**

18.1 The Bid form and accompanying documents (as specified in Clause 12), clearly marked "Original Bid"

18.2 The Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to sign on behalf of the Bidder. Such authorization shall be indicated by written power of attorney accompanying the Bid. All pages of the Bid, except for un-amended printed literature, shall be initialed by the person or persons signing the Bid. The name and position held by each person signing must be typed or printed below the signature.

18.3 The Bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.

18.4 The Bidder shall furnish the information as described in the Form of Bid on commissions or gratuities, if any, paid or to be paid relating to this Bid and to contract execution if the Bidder is awarded the contract.

#### **D. Submission of Bids**

#### **19. Sealing and Marking of Bids**

19.1 The Bid must consist of one envelop (Envelop A) and shall be marked as follows:

##### **19.1.1. Envelop A**

*Tender for:*

**“CONSTRUCTION OF TOWER FOUNDATIONS AND SITE DEVELOPMENT WORKS AT NEY AND PHETAKHA”**

***‘Do Not Open Before 2:00 Pm (Bst), 20<sup>th</sup> Jan 2025.***

19.3. The bidder shall submit only the original bid, and it is not necessary to submit a copy of duplicate bid.

#### **20. Deadline For the Submission of Bids**

20.1 The original Bid, together with the required copies, must be received by the Employer at the address specified in Clause 8 under “Invitation of Bids” no later than the time and date specified in the Invitation of Bids. It is the sole responsibility of the bidder to ensure that the bid is delivered on time.

20.2 The Employer may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Documents in accordance with clause 9.0, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

#### **21. One Bid per Bidder**

21.1 Each bidder shall submit only one bid per Package.

#### **22. Late Bids**

22.1 Any bid received by the Employer after the deadline for submission of Bids prescribed by the Employer, will be declared “Late” and rejected and returned unopened to the Bidder.

#### **23. Modification and Withdrawal of Bids**

23.1 The Bidder may modify or withdraw its bid after the Bid’s submission, provided that written notice of the modification or withdrawal is received by the Employer prior to the deadline prescribed for submission of Bids.

23.2 The Bidder’s modification or withdrawal notice shall be prepared, sealed, marked and dispatched in accordance with the provisions of clause 20. A withdrawal notice may also be sent by fax but must be followed by an original signed confirmation copy.

23.3 No bid may be withdrawn in the interval between 90 days from the deadline for submission of Bids as specified by the Bidder in the bid form.

23.4 Bidders may only offer discounts to, or otherwise modify the prices of their bids by submitting Bid modification in accordance with this clause or included in the Bid submission.

## **E. Bid Opening and Evaluation**

### ***24. Opening of Bids by the Employer***

- 24.1 The Employer shall open Bids, in the presence of Bidder's representatives who choose to attend the Bid Opening, as per the time, date and venue specified in the Invitation of Bids. The bidders' representatives who are present shall sign a register evidencing their attendance.
- 24.2 Envelopes marked "WITHDRAWAL" shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause 23 shall not be opened.
- 24.3 The Bidder's name, modifications and Bid withdrawals and such other details as the Employer, at its discretion, may consider appropriate will be announced and recorded at the opening.
- 24.4 The Employer will prepare minutes of the Bid opening; including the information disclosed to those present in accordance with clause no 24.3.

### ***25. Process to be Confidential***

- 25.1 Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process. Any effort by a Bidder to influence the Employer's and/ or the Employer's processing of bids or award decisions may result in the rejection of the bidder's bid.

### ***26. Clarification of Bids***

- 26.1 To assist in the examination, evaluation and comparison of bids, the Employer may, at its discretion, ask the bidder for a clarification of its bid. All responses to requests for clarification shall be in writing and no change in the price or substance of the bid shall be sought, offered or permitted.

### ***27. Preliminary Examination of Bids***

- 27.1 The Employer will examine the bids to determine whether they are complete, whether required valid license have been furnished, whether it is technically substantially responsive according to the bidding documents.
- 27.2 A Bid determined as not substantially responsive will be rejected by the Employer and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

### ***28. Correction of Errors***

- 28.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows.
- i. where there is a discrepancy between the amounts in figures and in words, the amount in words will govern; and
  - ii. where there is a discrepancy between the unit rate and the line-item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the Employer there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line item total as quoted will govern, and the unit rate will be corrected.
- 28.2 The amount stated in the Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount, the Bid will be rejected, and the bidder will debar for 2 years or more at an employer decision.

## **29. Evaluation and Comparison of Bids**

- 29.1 The Employer will evaluate and compare the bids previously determined to be substantially responsive, pursuant to clause 27.0
- 29.2 In evaluating the Bids, the Employer shall determine for each Bid the evaluated Bid price by adjusting the Bid price as follows:
- a. making any correction for errors pursuant to ITB Clause 28;
  - b. excluding provisional sums and the provision (unless no rates have been asked from the bidders), if any, for contingencies in the Bill of Quantities, but including Day work, were priced competitively.
  - c. making appropriate adjustments to reflect discounts or other price modifications offered in accordance with ITB Sub-Clause 23.4.
- 29.3 Bid Evaluation Criteria

*The bids shall be evaluated based on 100% financial aspects. However, employer may evaluate the bids on technical aspects only if the two or more lowest bidders have the same quoted bid.*

- 29.4 *The employer reserves the right to accept or reject any variation, deviation or alternative offer. Variations, deviations and alternative offers and other factors which are in excess of the requirements of the Bidding Documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in the Bid evaluation.*

## **F. Award of Contract**

### **30. Contacting The Employer**

- 30.1. From the time of Bid opening to the time of contract award, Bidders are not allowed to contact the Employer on any matter related to the Bid unless requested to do so by the Employer.
- 30.2. Any effort by a Bidder to influence the Employer in the decisions in respect of Bid evaluation, Bid comparison or contract award, will result in the rejection of the bidder's bid.

### **31. The Employer's Right to Accept or Reject any or All Bids**

- 31.1 The Employer reserves the right to accept or reject any Bid without citing any reason whatsoever and to annul the Bidding process and reject all Bids at any time prior to award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the Employer' action.

### **32. Post Qualification and Award**

- 32.1 The Employer will determine to its satisfaction whether the bidder selected as having submitted the lowest-evaluated, responsive bid is qualified to satisfactorily perform the contract.
- 32.2 The determination will take into account the bidder's information on his financial and technical situation as submitted as part of the bid.
- 32.3 An affirmative determination will be the prerequisite for award of the contract to the Bidder. A negative determination will result in rejection of the bidder's bid.
- 32.4 The Employer will award the contract to the successful bidder whose bid has been determined to be lowest-evaluated responsive Bid, provided further that the Bidder has been determined to be qualified to satisfactorily perform the contract.

32.5 The award of contract shall be through one contract. The Employer reserves the right to request the successful bidder to a meeting at TIPL Office in Thimphu for clarifications of issues related to his bid or his alternate bid. If the successful bidder declines the request for a meeting or does not attend a meeting agreed upon his bid will be rejected and the debar for 2 years or more.

**Further the award of contract shall be governed by following criteria:**

- a. **If the bidder/s quoted rate is less than 20% of TIPL's estimate, the bidder/bidders shall not be awarded the work.**
- b. **Bidder/s shall be awarded a maximum of two packages decided by TIPL committees.**
- c. **If the bidder have two incomplete packages from an existing site at the time of bid submission (at the time of bid opening), their bid will be rejected and returned unopened.**
- d. **If the rates quoted by bidders for any of the items in the BOQ are found to be unreasonably high or low, TIPL has the right to ask for justification or reject the bids.**
- e. **Failure to submit a bid with a valid trade license, CDB license and tax clearance certificates will lead to rejection of bids.**

### **33. *The Employer's Right to vary Quantities***

- a. The Employer reserves the right to increase or decrease up to 30% (Thirty percent only) of contract value, the quantity of Goods and services specified without any change in unit price or other terms and conditions during the execution of the contract. However, the quantities of individual items and services may vary to any extent. The bidder should be responsible for executing any of the extra work at the same quoted rate after he/she is awarded the work.

### **34. *Notification of Award***

34.1 The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex, or facsimile. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution and completion, or supply of Goods by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract price").

34.2 The Notification of Award/ letter of Award will constitute the formation of the contract.

34.3 Upon furnishing the performance security by the successful Bidder, the Employer shall promptly notify the other bidders that their bids have been unsuccessful.

### **35. *Signing of Contract***

35.1 At the time of Notification of Award/ letter of Award, the Employer will send the successful Bidder the Contract form provided in these Bidding Documents, incorporating all agreements between Employer and the successful bidder.

35.2 Within ten (10) days of receipt of such contract form, the successful Bidder shall sign the contract and return it to the Employer or shall come in person to sign the contract at the location agreed by the parties.

### **36. *Performance Security***

36.1 The Contractor shall, under the terms of the contract, at the notification of award provide a performance security in the form of a guarantee on first demand issued by the Contractor's bank. The guaranteed amount shall be 10% of the contract price denominated in the proportions of currencies in the Letter of Acceptance and in accordance with the Conditions of Contract.

36.2 The performance security shall, under the terms of the contract, expire when a clean verification certificate has been issued at the end of the guarantee period and no later than six (6) months after commissioning.

### **37. *Corrupt/Fraudulent Practices***

37.1 The Employer requires that the Bidders/ Contractors observe the highest standard of ethics during the procurement and execution of such contract. In pursuance of this policy, the Employer;

- a) defines, for the purpose of this provision, the terms set forth below as follows:
  - i) “corrupt practice” means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and
  - ii) “Fraudulent practice” means misrepresentation of facts in order to influence a procurement process, or the execution includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.
- b) will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
- c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract.

### **38. *Necessary Documents to be Submitted Along with Bid***

The following documents must be submitted along with the bid.

- i) Valid CDB certificate
- ii) Valid Trade License
- iii) Tax clearance certificate
- iv) Form of Bid
- v) Contractor’s Declaration form
- vi) Experience certificates(not mandatory)
- vii) Bill of quantity
- viii) Drawings

### **39. Adjudicator**

39.1 The Employer may propose the person named in the BDS to be appointed as Adjudicator under the Contract. If the Bidder disagrees with this proposal, the Bidder should so state in the Bid. If, in the Letter of Acceptance, the Employer has not agreed on the bidder’s nomination of the Adjudicator, the Adjudicator may be appointed by mutual consent.

## Section – III Commercial Conditions of Contract (CCC)

### 1. Definition

In the context of the Bidding documents, the following terms shall be interpreted as indicated:

**“The Bid”** means the proposal submitted by the Bidder

**“Bidder”** means any legal entity representing vendors, systems integrators, manufacturer, etc submitting a Bid.

**“The Contract”** means the agreement entered into between the Employer and the Contractor, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

**“The Contract Price”** means the price payable to the Contractor under the Contract for the full and proper performance of its contractual obligations.

**“The Goods”** means all the equipment, machinery, its spare parts, materials and accessories which the Contractor is required to supply to the Employer under the Contract.

**“The Services”** means those services ancillary to the supply of the Goods, such as transportation and insurance and any other incidental services, such as installation, commissioning, provisions of technical assistance, training and other such obligations of the Contractor under the Contract.

**“The Employer”** means Tashi InfoComm Limited, a company incorporated under the Companies act of Bhutan

**“The Employer’s country”** is the Kingdom of Bhutan

**“Day”** means a calendar day.

**“Commencement Date”** means the date of signing of contract agreement

**“Contractor”** means *[name & address of the contractor to be inserted]*

**“Contractor's Equipment”** means all plant, equipment, machinery, tools, appliances or things of every kind required in or for the purposes of execution of the works and which are to be provided by the Contractor, but does not include goods/equipment or other things intended to form or forming part of the works.

**“Warranty Period” or “Defect Liability Period”** means the period of validity of guarantee following taking over certificate/final acceptance, during which the Contractor is responsible for making good, at his own cost, the defects and damages occurred to the works or part thereof, in accordance with Clause 15.

**“Employer's Representative”** means any representative of the Employer appointed in writing by the Employer to perform the duties of the Employer.

**“Notification of Award/Letter of Award”** means the formal award by the Employer incorporating all the adjustments or variations to the Bid agreed between the Employer and the Contractor. The Notification of Award/Letter of Award will constitute the formation of Contract until the signing of the Contract Agreement.

**“Works”** means and includes Goods, Plant & Equipment and Materials to be supplied and installed (the Goods supplied by both the Contractor and the Employer) as well as all the Services to be carried out by the Contractor under the Contract.

**“Site”** means the Land & other place or places upon which works is to be carried out by the Contractor and such other land or places as may be specified in the Contract as forming part of the site.

**“Specification”** means the technical and functional specifications of the Supplies, Services, and Works included in Chapter-II of the Bidding Documents as included in the Contract including any modification thereof by the Employer during the tender period.



**"Government"** means the Royal Government of Bhutan.

**"Project"** means the project for the site development works and construction of tower, shelter and DG foundation under the terms and conditions contained in the Bidding Documents

**"Pre-commissioning"** means tests and verifications on the equipment and associated accessories as per specification which is required to be carried out by the Contractor in preparation of commissioning.

**"Commissioning"** means tests on all power supply facilities for powering up GSM base stations/ repeater stations to be performed by the Contractor after the successful pre-commissioning tests as per requirement stipulated in Technical Specification.

**"Site Acceptance Test (SAT)"** shall refer to the satisfactory completion of commissioning tests as per Technical Specification at a site.

**"Operational Acceptance"** means completion of all SAT and submission of all documents as per Technical Specification.

### **Interpretation**

Words importing persons or parties shall include Firms and Corporations and any Organization having legal entity. Words importing the singular also include the plural and vice versa where the context requires.

### **Communications**

Wherever in the Contract provision is made for a communication to be "written" or "in writing" this means any hand written, type written or printed communication including facsimile transmission. Wherever in the Contract provision is made for the giving of notice, consent or approval by any person, such consent or approval shall not be unreasonably withheld, unless otherwise specified, such notice, consent or approval shall be in writing and the word "notify" shall be construed accordingly. Communication related to this Contract shall be between the Employer's representative and the Contractor's Representative, unless otherwise agreed upon between the parties.

### **Unit of Measures**

The Metric System of measurement shall be used exclusively in the Contract.

## ***2. Use of Contract Documents and Information***

- 2.1 The Contractor shall not, without the Employer's prior written consent, disclose the contract, or any specification, drawings, pattern, sample or information furnished by or on behalf of the Employer in connection therewith, to any person other than a person employed by the Contractor in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only, so far as may be necessary for purposes of such performance.
- 2.2 The Contractor shall not, without the Employer's prior written consent, make use of any Document or information specified in Clause 2.1 above, except for purpose of performing the contract.
- 2.3 Any Document, other than the contract itself, specified in Clause 2.1 above, shall remain the property of the Employer and shall be returned (in all copies) to the Employer, on completion of the Contractor's performance under the contract, if so required by the Employer.
- 2.4 The Contract shall consist of duly executed Contract Form and the following documents including other documents referred to therein (hereinafter referred as the "Contract Documents"):
  - a. Notification of Award/Letter of Award;

- b. Commercial Conditions of Contract;
- c. Technical Specifications of Contract;
- d. Bill of Quantities, site information and Drawings;
- e. The Contractor's bid.

The aforesaid documents shall be taken as complimentary and mutually explanatory of one another. However, in the event of any discrepancy or inconsistency within the Contract Documents, then the Documents shall prevail in the order listed above.

### **3 Change Orders**

- 3.1 The Employer may at any time, by written notice to the Contractor, make changes within the general scope of the contract in any one or more of the following:
- a. Drawings, designs or specifications, where Goods to be furnished under the contract are to be specifically manufactured for the Employer.
  - b. The method of installation.
  - c. The place of delivery.
- 3.2 Upon notification by the Employer of such change, the Contractor shall submit to the Employer an estimate of costs for the proposed change (hereinafter referred to as the Change), within ten (10) calendar days of receipt of notice of the change, and shall include an estimate of the impact (if any) of the change on the delivery dates under the contract, as well as a detailed schedule for the execution of the change, if applicable.
- 3.3 The Contractor shall not make changes in accordance with clause 3.1 above until the Employer has authorized a change order in writing based on the estimate provided by the Contractor as described in clause 3.2 above.
- 3.4 Changes mutually agreed upon as a change shall constitute a part of the work under this contract, and the provisions and conditions of the contract shall apply to the said change.
- 3.5 The Employer, in addition to situation described in clause 3.1 above, reserves the right to increase or decrease the quantity of goods and services specified to the extent of 30% (Thirty percent) of original contract price, by way of a suitable amendment to the Contract, without any change in unit price or other terms and conditions during the execution of the Contract. However, the quantities of individual items and services may vary to any extent. The provisions of sub-clause 3.2, 3.3 and 3.4 shall not be applicable in case of the Employer's decision to exercise its right under this sub-clause for quantity variation.

### **4 Contract Amendment**

- 4.1 Subject to clause 3, no variation in or modification of the conditions and terms of the contract shall be made except by written amendment signed by the parties and agreed by the Employer.
- 4.2 All changes to the Contract, including Change Orders in accordance with clause 3 shall have the Employer's approval before becoming effective.

### **5 Sub-Contracts**

- 5.1 The Contractor shall not sub-contract all or any part of the contract without first obtaining the Employer's approval in writing of the sub-contracting and the sub-contractor.
- 5.2 The Contractor guarantees that any and all sub-contractors of the Contractor for performance of any part of the work under the contract will comply fully with the terms of the contract applicable to such part of the work under the contract.

## **6 Country of Origin**

- 6.1 All goods and services supplied under the contract shall originate from any country.
- 6.2 For purposes of this clause, "Origin" shall be considered to be the place where the goods were mined, grown or produced. Goods are produced when, through manufacturing, processing or substantial and major assembling of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

## **7 Inspections and Tests.**

- 7.1 The Employer or its representative shall have the right to inspect and/or to test the Goods and quality of work to confirm their conformity to the Specifications. The Employer shall notify the Contractor in writing of the identity of any representatives retained for these purposes. All the field tests required shall be done as per technical specifications
- 7.2 The Inspections and tests may be conducted on the premises of the Contractor or its sub-contractor at point of delivery or at the Goods' final destination. When conducted on the premises of the Contractor, or its sub-contractor all reasonable facilities and assistance including access to drawing and production data, shall be furnished to the inspectors at no charge to the Employer.
- 7.3 Should any inspected or tested Goods/works fail to conform to the Specifications, the Employer may reject them, and the Contractor shall either replace the rejected Goods or make all alterations necessary to meet the requirements of the Specifications, free of cost to the Employer.
- 7.4 The Employer's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at site shall in no way be limited or waived by reason of the Goods' having previously been inspected, tested and passed by the Employer or its representatives prior to the Goods' shipment from the country of origin
- 7.5 Nothing in Clause 7 shall in any way release the Contractor from any Warranty or other obligations under the Contract.
- 7.6 The Contractor shall give the Employer reasonable notice in writing, at least thirty (30) days in advance, of the date on and the place at which any Goods/Works will be ready for testing as provided in the Contract. The Employer shall attend at the place so named within fifteen (15) days of the date which the Contractor has stated in his notice. The Employer shall give the Contractor twenty-four (24) hours of notice in writing of his intention to attend the tests.

## **8 Transportation**

- 8.1 The Contractor shall at its own risk and expense transport all the goods and the Equipment to the site by the mode of transport which the Contractor judges most suitable under all circumstances.
- 8.2 Unless otherwise provided in the contract, the Contractor shall be entitled to select any safe mode of transport operated by any person to carry the goods and the Contractor's equipment.
- 8.3 The Contractor shall be responsible for obtaining, if necessary, approvals, from the authorities for transportation of the goods and the equipment to the site. The Employer shall use its best endeavours in a timely and expeditious manner to assist the Contractor in obtaining such approvals, if requested by the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against any claim for damage to roads, bridges or any other traffic facilities that may be caused by the transport of the goods and the Contractor's equipment to the site.

## **9 Patent and Intellectual Property Rights**

- 9.1 The Contractor shall indemnify and hold the Employer harmless against all third-party claims of infringement of patent, trademark, industrial design rights or intellectual property rights arising from use of the goods or any part thereof.

## ***10 Performance Security***

- 10.1 The Contractor, at his own cost, shall cause an unconditional Performance Security to be furnished to the Employer in the amount of ten percent (10%) of the Contract Price. Such Performance Security shall be provided, in the form satisfactory to the Employer, within **ten (10)** days after the Contractor's receipt of the Notification of Award of Contract/Letter of Award.
- 10.2 The proceeds of the Performance Security shall be payable to the Employer as compensation for any loss resulting from the Contractor's failure to complete its work under the Contract. The Performance Security shall be payable on first demand itself without conditions or proof.
- 10.3 The Performance Security shall be denominated in the currency of the Contract and shall be in the form of a bank guarantee or cash warrant, issued by a bank acceptable to the Employer as per the form enclosed in Section-V of this document.
- 10.4 The Performance Security shall be initially valid till 90 days after the expiry of the Warranty Period, and shall be extended appropriately as the Warranty Period is extended in accordance with Clause 14. The Performance Security shall be kept valid until the Contractor has executed, completed and remedied defects in the Works in accordance with the Contract. No claim shall be made against the Performance Security after the issue of the Defect Liability Certificate and the Performance Security shall be returned to the Contractor within 30 days of the issue of the Defects Liability Certificate.

## ***11 Indemnity***

- 11.1 The Contractor shall indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages and costs and expenses of whatsoever nature, including attorney's fees and expenses, in respect of the death or injury of any person or loss or damage to any property (other than the works whether accepted or not), arising in connection with the execution of the work and by reason of the negligence of the Contractor or its Sub-Contractors, or their employees, officers or agents, except any injury, death or property damage caused by the negligence of the Employer, its other Contractors, employees, officers or agents.
- 11.2 If any proceedings are brought or any claim is made against the Employer which might subject the Contractor to liability under Clause 11.1 above, the Employer shall promptly give the Contractor a notice thereof and the Contractor may at its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. If the Contractor fails to notify the Employer within thirty (30) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Employer within the thirty (30) days period, the Employer shall make no admission which may be prejudicial to the defense of any such proceedings or claim.

The Employer shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim, and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing.

## ***12 Insurance***

- 12.1 The Contractor, at his own cost, shall arrange, secure and maintain all insurance as may be pertinent to the Works and obligatory in terms of law to protect his interest and interests of the Employer against all perils detailed herein. The form and the limit of such insurance as defined herein together with the under writer in each case shall be acceptable to the Employer. However, irrespective of such acceptance, the responsibility to maintain adequate insurance coverage at all times during the period of Contract shall be of the Contractor alone. The Contractor's failure in this regard shall not relieve him of any of his contractual responsibilities and obligations. The insurance covers to be taken by the Contractor shall be in the joint name of the Employer and the Contractor. The Contractor shall, however, be authorized to deal directly with the Insurance Company or Companies and shall be responsible in regard to maintenance of all insurance covers. Further the insurance should be in freely convertible currency.

12.2 All costs on account of insurance liabilities covered under the shall be on the Contractor's account and will be included in Contract Price. However, the Employer may from time to time, during the duration of the Contract, asks the Contractor in writing to limit the insurance coverage, risks and in such a case, the parties to the Contract will agree for a mutual settlement, for reduction in Contract price to the extent of reduced premium amount. The Contractor, while arranging the insurance, shall ensure to obtain all discounts on premium which may be available for higher volume or for reason of financing arrangement of the project.

It will be the responsibility of the Contractor to lodge, pursue and settle all claims (for all the equipment and materials including the Employer supplied items) with the Insurance Company and the Employer shall be kept informed about it. The Contractor shall replace the lost/damaged goods (own or the Employer supplied both) promptly irrespective of the settlement of the claims by the underwriters and ensure that the work progress is as per agreed schedules. The losses, if any, in such replacement will have to be borne by the Contractor.

### ***13 Acceptance***

13.1 Upon completion of the work under the contract, a meeting shall be held for the purpose of accepting the goods and services (hereinafter called the Final Acceptance). Such meeting shall constitute the final acceptance of the goods and services under the contract, unless the Employer during the meeting shows defects or shortcomings or both. In case of defects or shortcomings or both which in the Employer's opinion are considered essential, a new meeting shall be convened when the Contractor has given notice of completion of the corrective work carried out with regard hereto. Otherwise, the Employer may accept the goods if the defects or shortcoming or both are not considered essential and the Contractor have agreed to carry out the repairs in conformity with this contract.

13.2 Upon final acceptance of the Work, the Employer shall issue a "Final Acceptance Certificate" in the form of "Taking over Certificate" to the Contractor. Separate certificates may be issued for each of the three packages of the project.

### ***14 Warranty***

14.1 The Contractor warrants to the Employer that the Goods and services supplied under the Contract will comply strictly with the technical specifications and it shall be free of any manufacturing defects. The Contractor warrants to the Employer that all equipment, materials and supplies furnished by the Contractor or its sub-contractors for the purpose of the goods will be new, merchantable of the most suitable grade, and fit for their intended purposes. The Contractor further warrants that the services to be carried out under this contract will confirm with generally accepted professional standards and engineering principles.

14.2 This Warranty shall remain valid for six months after the Final Acceptance test of the works.

14.3 The Employer shall promptly notify the Contractor in writing of any claim arising under this warranty.

14.4 Upon receipt of such notice, the Contractor shall promptly repair or replace the defective goods or parts thereof, inclusive of, where applicable, the cost of inland delivery of the repaired or replaced goods or parts from the port of entry to the destination and their installation.

14.5 The Contractor shall promptly correct, at no cost to the Employer any defect in any work of correction performed pursuant to clauses 14.2 and 14.4 above upon receipt of written notice of defect within six (6) months from acceptance of the indicated defect.

14.6 If the Contractor, having been notified, fails to remedy the defect(s) in accordance with the contract, the Employer may proceed to take such remedial action as may be necessary, at the Contractor's expense. The Contractor's warranty pursuant to this clause 15 is without prejudice to any other rights or remedies which the Employer may have against the Contractor under the contract.

14.7 A verification certificate must be issued and approved by the Employer in accordance with the Employer's "Guidelines for inspection/verification" at the end of the warranty period. In case of defects the Contractor must remedy any such defects as part of his warranty obligations until no defects are found. The warranty period is extended correspondingly without any costs for the Employer.

## **15 Payment**

15.1 The payments to the Contractor for the performance of the Contract will be made by the Employer in the currency identified in the Contract as per the methods, terms and conditions specified herein.

### **a. Advance Payment:**

Ten Percent (10%) of the Contract price shall be paid as an advance only upon of submission of (i) Advance Payment Bank Guarantee and (ii) Performance Security pursuant to clause 10 above. The advance payment shall be made within one week from the date of submission of above documents

### **b. Material Secured Payment**

Thirty percent (30%) of the Contract Price shall be paid to the Contractor upon delivery of all construction materials or equipment to the site.

### **c. Final Payments**

The balance sixty percent (60%) of the contract price shall be paid after final acceptance of the work.

## **16 Prices**

16.1 Prices charged by the Contractor for work performed under the contract shall not vary from the prices quoted by the Contractor in its bid, except for any change in price resulting from a change order issued in accordance with clause 3.0 or if applicable, adjustments authorized in accordance with the price adjustment provisions agreed by the parties.

## **17 Extensions in the Contractor's Performance.**

17.1 The Contractor may claim extension of the time limits as set forth in the work schedule in case of:

- a. Changes in the goods ordered by the Employer pursuant to clause 3.0
- b. Delay of any materials, drawings or services which are to be provided by the Employer; services shall be interpreted to include all approvals by the Employer under the contract;
- c. Force majeure pursuant to clause 23; and
- d. Delay in performance of work caused by orders issued by the Employer.

The Contractor shall demonstrate to the Employer's satisfaction that it has used its best endeavors to avoid or overcome such causes for delay, and the parties will mutually agree upon remedies to mitigate or overcome such causes for delay.

17.2 Notwithstanding clause 17.1 above, the Contractor shall not be entitled to an extension of time for completion, unless the Contractor, at the time of such circumstances arising, immediately has notified the Employer in writing of any delay that it may claim as caused by circumstances pursuant to clause 17.1 above; and upon request of the Employer, the Contractor shall substantiate that the delay is due to the circumstances referred to by the Contractor.

## **18 Liquidated Damages**

18.1 Subject to Clause 23, Force Majeure, if the Contractor fails to comply with the Time for Completion in accordance with agreed Work Schedule for the whole of the Works or, if applicable, for any part thereof then the Employer shall without prejudice to its other remedies under the Contract, deduct from the Contract Price a sum equivalent to one percent **(0.1%) of the Contract Price** as liquidated damages for such default and not as a penalty, for **each day** or part thereof of delay, until actual performance up to a maximum deduction of ten 10% of Contract Price. The Payment or deduction of such damages shall not relieve the Contractor from its obligation to complete the works or from any other of its obligations and liabilities under the Contract. Once the maximum is reached, the Employer may consider termination of the Contract pursuant to Clause 19, Termination for Default.

## ***19 Termination for Default***

19.1 The Employer may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Contractor, terminate the contract in whole or in part:

- a. If the Contractor fails to deliver any or all the Goods and to perform Services within the time period(s) specified in the Contract, or any extension thereof granted by the Employer, pursuant to Clause 17; or
- b. if the Contractor fails to perform any other obligations(s) under the contract; and
- c. if the Contractor, in either of the above circumstances, does not cure its failure within a period of ten (10) calendar days (or such longer period as the Employer may authorize in writing) after receipt a notice of default from the Employer specifying the nature of the default(s).
- d. if the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

19.2 In the event the Employer terminates the Contract in whole or in part, pursuant to Clause 19.1(a) above, the Employer may procure, upon such terms and in such manner as it deems appropriate, goods, services and any other obligations similar to those undelivered, and the Contractor shall be liable to the Employer for any excess costs for such procurement. Notwithstanding the above, the Contractor shall continue performance of the Contract to the extent not terminated.

## ***20 Termination for Insolvency***

20.1 The Employer may at any time terminate the Contract by giving written notice to the Contractor, without compensation to the Contractor, if the Contractor becomes bankrupt or otherwise insolvent. Notwithstanding the above, such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Employer.

## ***21 Resolution of Disputes***

21.1 Disputes arising from the implementation of the provisions of the Contract shall be settled first by negotiations between the parties in order to arrive at an amicable settlement. If negotiations fail, the matter will be settled by arbitration, whereby each of the parties will be entitled to appoint one arbitrator, whereby each of the parties will be entitled to appoint one arbitrator, and a third one to be appointed by mutual agreement of the parties. If either the Employer or Contractor fails to appoint a representative or if both of them cannot agree on the appointment of a third member within 30 days from the date of agreement to refer the matter for arbitration, then the case will be referred to the proper court in Bhutan for settlement.

## ***22 Applicable Law***

22.1 The Contract shall be governed by and interpreted in accordance with the laws of the Bhutan.

## ***23 Force Majeure***

23.1 In the event, which are beyond the reasonable control of the Contractor and the Employer, it is delayed in performing any of their respective obligations under the Contract, and such delay is caused by Force Majeure, including but not limited to war, civil insurrection, fires, floods, epidemics, earthquakes, quarantine restrictions and freight embargoes, such delay may be excused as provided in Clause 17, the period of such delay may be added to the time of performance of the obligation delayed.

23.2 If a Force Majeure situation arises; the Contractor shall promptly notify the Employer in writing of such condition and the cause thereof within 15 days after the occurrence of such event. Unless otherwise directed by the Employer in writing, the Contractor shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

23.3 The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed.

- 23.4 No delay or non-performance by either party hereto caused by the occurrence of any event of Force Majeure shall:
- a. constitute a default or breach of the Contract; or
  - b. give rise to any claim for damages or additional cost or expense occasioned thereby.
- If and to the extent that such delay or non-performance is caused by the occurrence of an event of Force Majeure.

23.5 Notwithstanding Clause 23.4 above, Force Majeure shall not apply to any obligation of the Employer to make payments to the Contractor hereunder.

#### ***24 Assignment***

24.1 The Contractor shall not assign, in whole or in part its obligations to perform under the contract, except with the Employer's prior written consent.

#### ***25 Contract Language***

25.1 The Contract shall be in the English language, and all documentation related hereto will also be in the English language, except if otherwise specifically agreed in writing between the parties.

#### ***26 Taxes and Duties***

26.1 The Contractor shall be entirely responsible for payment of all taxes, duties, license fees etc. incurred per performing the contract as per law in Bhutan.

26.2 The Contractor shall be solely responsible for the taxes that may be levied on the Contractor's persons or on earnings of any of his employees and shall hold the Employer indemnified and harmless against any claims that may be made against the Employer. The Employer does not take any responsibility whatsoever regarding taxes under Bhutan Income Tax Act, for the Contractor or his personnel.

#### ***27 Waiver***

27.1 Failure of either party to insist upon strict performance by the other party of any provision of the Contract shall in no way be deemed or construed to affect in any way the right of that party to require such performance.

#### ***28 Care of Work***

28.1 The Contractor shall be responsible for the care and custody of the work or any part thereof until the date of taking over certificate pursuant to Clause 13 hereof and shall make good at its own cost any loss or damage that may occur to the work or the relevant part thereof from any cause whatsoever during such period. The Contractor shall also be responsible for any loss or damage to the works caused by the Contractor or its Sub-Contractors in the course of any work carried out pursuant to Clause 15 (Warranty) hereof. Notwithstanding the foregoing, Contractor shall not be liable for any loss or damage to the works or that part thereof caused by any use or occupation by the Employer or any third party (other than a Sub-contractor) authorized by the Employer of any part of the works.

#### ***29 Responsibilities of the Employer***

29.1 The Employer shall be responsible for acquiring and providing the following services and facilities:

- a. Acquisition and access to all sites required for the project
- b. Environment Clearance required for project execution
- c. Storage yards wherever the Employer's facilities exist
- d. Communication facilities on payment

29.2 The Employer shall use its best endeavors to assist the Contractor in obtaining in a timely and expeditious manner all permits, approvals and/or licenses necessary for the execution of the Contract, including work permits, visas, etc. from all local, state or national government authorities or public service undertakings that such authorities or undertakings require the Contractor to obtain.



### ***30 Obligations of the Contractors***

30.1 The Contractor shall, in accordance with the Contract, with due care and diligence, carry out the Works as per the scope of work defined in the Technical Specifications and within the specified Time for Completion. The Contractor shall also provide all necessary Contractors' equipment, superintendence, labor and all necessary facilities thereof.

The Contractor shall be deemed to have carefully examined the Bidding Documents, the Site and the existing installations, as applicable, and to have satisfied himself to the nature and character of the Work to be executed, the prevailing meteorological conditions as well as the local uses and conditions and any other relevant matters and details. Any information received from the Employer shall not in any way relieve the Contractor from his responsibility for supplying the Goods and executing his work in terms of the Contract, including all details and incidental work and supply of accessories or apparatus which may not have been specifically mentioned in the Contract but are necessary for ensuring the complete installation and a safe and efficient operation of the structures.

30.2 The Contractor shall, pursuant to clause 22, acquire in its name all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located that are necessary for the performance of the Contract, including, without limitation, visas for the Contractor's and Subcontractor's personnel and entry permits for all imported Contractor's Equipment. The Contractor shall acquire all other permits, approvals and/or licenses that are necessary for the performance of the Contract.

30.3 The Contractor shall comply with all laws in force in the country where goods are to be supplied and the Installation Services are to be carried out. The laws will include all national, provincial, municipal or other laws that affect the performance of the Contract and bind upon the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against all liabilities, damages, claims, fines, penalties and expenses of whatever nature arising or resulting from the violation of such laws by the Contractor or its personnel, including the Sub-Contractors and their personnel.

### ***31 Contractor / Contractor's Representatives***

31.1 The Contractor shall, in addition to the Project Manager as his representative, employ one or more representatives to superintend the carrying out of the Works on Site. Their names shall be communicated in writing to the Employer before work on the Site begins.

Any instruction or notice which the Employer gives to the Contractor's Representative shall be deemed to have been given to the Contractor.

31.2 The Contractor shall, upon the Employer's written instruction, remove from the Works any person employed by him in the execution of the Works, who misconducts himself or is incompetent or negligent.

### ***32 Contractor / Contractor's Management***

#### **32.1 Contractor's Equipment**

The Contractor shall provide all Equipment, haulage and power necessary to complete the Works, including transport at his own cost. The contractor shall provide construction plant and tools that best meet the job requirements and maintain the same in good working conditions so as to be used effectively and to eliminate accidents.

The Contractor shall not remove from the Site any such equipment, except:

- a. when it is no longer required for the completion of the Works, or
- b. when the Employer has given his consent immediately after the Contractor has informed the Employer on the completion of the work

#### **32.2 Safety Precautions**

The Contractor shall observe all applicable regulations regarding safety on the Site.

Unless otherwise agreed, the Contractor shall, from the commencement of work on Site until taking over, provide:

- a. fencing, lighting, guarding and watching the Works, and
- b. temporary roadways, footways, guards and fences which may be necessary for the accommodation and protection of Owners and occupiers of adjacent property, the public and others.

**c. Disaster Prevention**

Proper measures shall be taken to prevent hazards, fire, storm, flood, etc., occurring in connection with the construction works, in accordance with the relevant laws and regulations. When there is any fear of endangering life, properties, etc., both inside and outside the site, the contractor shall prevent hazardous conditions from being encountered due to the drop of materials by providing protective steel nets or protective sheets and fences or by other equivalent methods so as not to endanger life and properties.

**32.3 Electricity and Water**

The Contractor shall be entitled to use for the purposes of the Works such supplies of electricity and water as may be available on the Site and shall provide any apparatus necessary for such use. The Contractor shall pay the Employer at the applicable tariff plus the Employer's overheads, if any, for such use. Where such supplies are not available, the Contractor shall make his own arrangement for the provision of any supplies he may require.

**32.4 Employer's Equipment**

The Contractor shall pay hire charges as may reasonably be levied for the Employer's equipment, if any, and provide the transport, haulage, power etc. thereof at his own cost.

**32.5 Clearance of Site**

The Contractor shall from time to time during the progress of the Works clear away and remove all surplus materials and rubbish. On completion of the Works the Contractor shall remove all Contractor's Equipment and surplus material and garbage and leave the whole of the Site and the Works clean and in a workmanlike condition, to the satisfaction of the Employer. The Contractor shall obtain prior approval of the Employer to remove surplus materials.

**32.6 Opportunities for Other Contractors**

The Contractor shall in accordance with the Employer's instructions, cooperate with and afford to other Contractors engaged by the Employer to work on the Site and persons lawfully so engaged upon the Site all reasonable opportunities for carrying out their work provided that the same shall not obstruct or disturb the progress of the Works. The Contractor shall also afford such opportunities to the employees of the Employer.

**32.7 Authority for Access**

No persons other than the employees of the Contractor and his Sub-Contractors shall be allowed on the Site except with the written consent of the Employer. Facilities to inspect the Works shall always be afforded by the Contractor to the Employer and his representatives, authorities and officials.

**32.8 Information for Import Permits and Licenses**

The Contractor shall submit to the Employer in good time such details of all Goods and Contractor's Equipment as will enable the Employer to assist the Contractor in obtaining all necessary import permits or licenses.

32.9 The contractor shall leave the site after proper cleaning as per the instruction of the employer

**33 Labour**

**33.1 Engagement of Labour**

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all labor and for their payment, housing, feeding and transport. The use of Bhutanese laborers for the execution of contract is highly encouraged by the Employer.

The Contractor shall pay rates of wages and allowances according to the nature of the Works and observe hours and working conditions of his employees, so as to be no less favorable to the employees than those generally prevailing in the region where the Works are to be carried out. At the same time, the Contractor shall observe all regulations prescribed by the Laws of the Government and shall strictly comply with any agreement, custom, practice or award relating to the wages.

The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labor with the required qualifications and experience from sources within the region of work.

### **33.2 Returns of Labor**

The Contractor shall submit detailed returns showing the supervisory staff and the numbers of the several classes of labor from time to time employed by the Contractor and Sub-Contractors on the Site. The return shall be submitted in such form and at such intervals as the Employer may prescribe.

33.3 In the event of an accident, the Contractor shall, within twenty-four (23) hours of the occurrence of any accident at or about the Site or in connection with the execution of the Works report such accident to the Employer. The Contractor shall also report such an accident to the competent authority whenever such report is required by the law.

33.4 The Contractor shall keep proper wages books and time sheets showing the wages paid to and the time worked by all workmen employed by him in and for the performance of the Contract and shall produce such wages books and time sheets on demand for inspection by any persons duly authorized by the Employer and shall furnish such information relating to the wages and conditions of employment of such workmen as the Employer or his duly authorized representative may from time to time require.

### **33.5 Restriction On Working Hours**

No work shall be carried out on the Site outside normal working hours or on the locally recognized days of rest, unless:

- a. the Contract so provides, or
- b. the work is unavoidable or necessary for the saving of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Employer, or
- c. The Employer gives his consent.

33.6 The Contractor will be expected to employ on the work only regular skilled employees with experience of the particular type of work.

33.7 In case the Employer becomes liable to pay any wages or dues to the labor or any Government agency under any of the provisions of the laws of Bhutan or any other law due to act of omission of the Contractor, the Employer may make such payments and shall recover the same from the Contractor's bills.

33.8 As per the existing laws of the Bhutan all foreign nationals and expatriate personnel entering Bhutan to execute the Project works need to obtain visa and work permit. The Contractor shall submit detail of persons to be deployed for this project along with the schedule of implementation at least 15 days in advance before starting the work to allow the Employer to process and obtain necessary clearances from the Government. The Employer shall not be held responsible for any delays whatsoever if the application for obtaining the required clearances does not reach the Employer specified above.

## **34 Frustration of Contract**

34.1 In the event of frustration of the Contract because of supervening impossibility in terms of **laws of Bhutan**, the parties shall be absolved of their responsibility to perform the balance portion of the Contract, subject to provisions contained in Clause 34.3 below.

34.2 In the event of non-availability or suspension of funds for any reasons whatsoever (except for reason of willful or flagrant breach by the Employer and/or Contractor) then the works under the Contract shall be suspended. Furthermore, if the Employer is unable to make satisfactory alternative arrangements for financing to the Contractor in accordance with the terms of the Contract within three months of the event, the parties hereto shall be relieved from carrying out further obligations under the Contract treating it as frustration of the Contract.

34.3 In the event referred to in Clause 34.2 above the parties shall mutually discuss to arrive at reasonable settlement on all issues including amounts due to either party for the work already done on "quantum merit" basis which shall be determined by mutual agreement between the parties.

**35 Notices**

**35.1 Notices to Contractor**

All certificates, notices or written orders to be given to the Contractor by the Employer under these Conditions shall be sent by mail post or facsimile transmission to or left at the Contractor's principal place of business or such other address as the Contractor shall notify for that purpose or may be handed over to the Contractor's Representative.

**35.2 Notices to Employer**

Any notice to be given to the Employer under these Conditions shall be sent by airmail post or facsimile transmission to or left at the respective addresses notified for that purpose in the Letter of Award or handed over to the Employer's Representative authorized to receive it.

**35.3 Minutes of Meetings**

Instructions or notices to the Contractor and notices from the Contractor to the Employer recorded in a minute or protocol signed by the authorized representative of the giver and of the recipient of such notice or instruction shall be valid notice or instruction for the purposes of the Contract. All minutes of meetings shall form part of the contract.

35.4 Copies of all notices and other relevant correspondence between the Employer and the Contractor shall be forwarded to the Employer. The Employer has the right to ask for additional information deemed necessary in order to assess the status and progress of the project.

**36 Completion of Work**

**36.1. Completion of Work**

The completion of work for the following listed packages shall be as below from one week after the date of handover of the sites to the bidder after the award of contract.

SL.No.	Package	Dzongkhag	Site Name after survey by SPPD	Tower height	Contract Durations (Days)
1	1	Lhuntse	Ney	35	35
2		Wangdi	Phethekha	15	

## SECTION-IV Technical Specification of Contract (TSC)

### 1. *General Information*

- 1.1 The Employer's staff or its representative shall attend every layout of site before commencement of earthwork upon request by the contractor.
- 1.2 Specifications for Building and Roads Works –2024 published by the Department of Infrastructure Development, Ministry of Infrastructure and Transport shall be followed in case some important information is not included in the technical specifications provided below.
- 1.3 Materials and workmanship shall meet or exceed the minimum specified standards. As and when required, the contractor shall submit samples of the materials for approval of the employer. All the construction materials used should correspond to the list of the list of approved brands of materials as issued by Department of Infrastructure Development, Ministry of Infrastructure and Transport. Any materials not corresponding to the above list will be rejected.
- 1.4 Any additional work overlooked in this contract and if in the opinion of the contractor the works need to be carried out or is necessary to complete this contract; such works shall be permitted to be carried out with the prior approval of the employer. The contractor shall inform in writing to the employer the advantages or benefits of executing these additional works.
- 1.5 All earth works in this contract shall be in accordance with the requirement of the specification and as per the design and drawings. The contractor shall not be entitled for additional payment with regard to the mode of execution. The excess earth shall be disposed at proper place as instructed by the engineer in charge with no additional payment.
- 1.6 Unless stated otherwise or separate approval is obtained/ given, all concrete works shall be in accordance with the requirement of the specification.
- 1.7 The Specifications given in the tender drawings, or the execution drawings and the Bill of Quantities are to be strictly followed.
- 1.8 Wherever the drawings or the BOQ have not specified the specifications, the instruction of the Employer's representative shall be followed.
- 1.9 **Any additional amounts due to the Occupational Health and Safety(OHS), Construction of the camp at sites and any extra items related to the same scope of works that are missing from the Bill of Quantities (BoQ) will not be entertained. Therefore, bidders should take all aspects into account and quote accordingly.**
- 1.10 No part of the works should be covered before the employer carries out the final inspection.

### 2. *Earthworks*

#### 2.1 *General*

The earthwork specified in this section consists of excavation, grading, filling, backfilling and related earthwork necessary to complete the facilities to be provided. Surplus excavated earth which is beyond the requirement of the TIPL shall have to be disposed of by the contractor at his own cost beyond the municipal limits or at places identified by the local bodies or as directed by the Engineer-in-Charge after obtaining written permission of the Engineer-in-Charge and no payment will be made by the Department for such disposal of this surplus excavated earth.

#### 2.2 *Excavation*

Excavation for all the foundations shall be executed either by mechanical facilities or by hand. However, the portion of a depth of at least 30 cm above the level of bottom of excavation shall carefully be executed by hand in order not to disturb or destroy the surface of the layer. In the case where any part of the surface of excavation is disturbed or destroyed, tamping or substitution, such as cast-in-site plain concrete shall be carried out so as to make the part stronger than the natural condition. To ensure safety at work, the contractor shall provide shoring, sheet piling or waling, if necessary. Shoring shall be removed as back filling progresses but only after confirming that banks are safe against collapse or carving on slopes. The Contractor shall completely remove all existing obstructions against the construction of the facilities. All the excavated materials that are not required at site shall be properly disposed off in coordination with the Employer and the local municipal authorities. The payment shall be made considering the vertically excavation only.

### **2.3 Drainage**

The contractor shall control the grading around the facilities to be provided so as to prevent water from running into the excavated areas and damaging the facilities. The Contractor shall also maintain all pits and trenches where footings are to be placed, free of water at all times. Water pumps, wherever required, shall be provided to keep the excavated spaces clear of water during the construction. It's the responsibility of the contractor to coordinate with local municipal authorities to carry out proper drainage works for every site.

### **2.4 Backfilling for Structures**

Before placing backfill, the Contractor shall remove all debris subject to termite attack, rot, or corrosion, and all other deleterious materials from areas to be backfilled. The Contractor shall deposit backfills in layers of not more than 30 cm thick and compact each layer to the satisfaction of the Employer. The contractor shall not backfill the structures before the Employer inspects the site.

### **2.5 Ground Leveling**

The Employer shall carry out all ground leveling works as per the instruction of the Employer. This part of the work shall be paid under a separate heading. It will be paid per volume of soil excavated for leveling the site.

### **2.6 Slope Protection**

The contractor shall carry out works related to slope protection as per the instruction of the Employer at sites by constructing concrete or masonry retaining structures. This part of the work shall be paid under a separate heading.

### **2.7 Disposal of Excavated Materials**

#### **2.7.1 Antiquities**

Any finds of archaeological interest such as relics of antiquity, coins, fossils or other articles of value shall be delivered to the Engineer-in-Charge and shall be the property of the Government.

#### **2.7.2 Useful Materials**

Any material obtained from the excavation which in the opinion of the Engineer-in-charge is useful shall be stacked separately in regular stacks as directed by the Engineer-in-Charge and shall be the property of TIPL. No material excavated from foundation trenches of whatever kind they may be are to be placed even temporarily nearer than about 3 m from the outer edge of excavation. Discretion of the Engineer-in-Charge in such case is final. All materials excavated will remain the property of TIPL. Rate for excavation includes sorting out of the useful materials and stacking them separately as directed within the specific lead. Materials suitable and useful for backfilling or other use shall be stacked in convenient place but not in such a way as to obstruct free movement of materials. Workers and vehicles or encroach on the area required for constructional purposes. It shall be used to the extent required to completely backfill the structure to original ground level or other elevation shown on the plan or as directed by the Engineer-in-Charge. Materials not useful in anyway shall be disposed off, leveled and compacted as directed by the Engineer-in-charge within a specified lead. The site be left clean of all debris and leveled on completion.

### 3. Concrete

#### 3.1 Cement

The Cement approved by the Engineer/Employer, shall be ordinary Portland cement. Laboratory and physical tests for the cement shall be carried out by the Contractor at his own expenses when required by the Employer. Contractor will have to make his own arrangements for proper storage of adequate quantity of cement. Cement in bulk may be stored in bins or silos which will provide complete protection from dampness, contamination and minimize caking and false set. Damaged or reclaimed or partly set cement will not be permitted to be used and shall be removed from the site. The storage bins and storage arrangements shall be such that there is no dead storage. No more than 12 bags shall be stacked in any tier. The storage arrangement shall be approved by the Employer. Consignments of cement shall be stored as received and shall be consumed in the order of their delivery. Cement held in storage for a period of ninety (90) days or longer shall be tested. Should at any time the Engineer have reasons to consider that any cement is defective, then irrespective of its origin, manufacturer's test certificate, such cement shall be tested immediately at a National Test Laboratory/approved Laboratory, and until the results of such tests are found satisfactory, it shall not be used in any works.

#### 3.2 Quality of concrete

All the concrete shall be machine mixed. Hand mixing shall be permitted only in places when transportation of the concrete mixer machine is extremely difficult as verified by the Employer. All concrete used shall be as per the instruction of the site engineer of the Employer. The contractor shall submit 28 days test results of concrete of 150mmx150mmx150mm cube, if required by the Employer. The contractor shall make at least three test cubes of the concrete used for every site. The design strength of concrete after 28 days shall be achieved, and the contractor is responsible for it. An average of three tests shall be taken to assess the strength of concrete. In situations where the concrete fails in compressive strength test at laboratory, the contractor shall propose for other field tests like nondestructive test (Such as Ultrasonic Pulse Velocity Test etc) universally accepted, core test etc., to test the concrete at site. If the entire field test and the laboratory test fail, the contractor shall redo the whole work at no extra cost to the Employer. In the designation of concrete mix letter M refers to the mix and the number to the specified characteristic compressive strength of 15cm-Cube at 28 days expressed in N/mm<sup>2</sup>.

Adequate mixed ratios of cement, sand and aggregates shall be used to achieve the strength requirements. The concrete shall be compacted with the aid of mechanical vibrators applied directly to the concrete. No concreting works will be allowed without the use of the vibrators. The contractor shall ensure proper and complete curing of concrete irrespective of the availability of water at site. **The concrete shall be cured for a minimum of 14 days.**

Pouring of the concrete foundations for each site shall not proceed until the employer gives final approval.

### 4. Aggregate

#### 4.1 General

"Aggregate" in general designates both fine and coarse inert materials used in the manufacture of concrete. Coarse aggregate for concrete except as noted above and for other than light weight concrete shall conform to IS 383. This shall consist of natural or crushed stone and gravel, and shall be clean and free from elongated, flaky or laminated pieces adhering coatings, clay lumps, coal residue, clinkers, slag, alkali, mica, organic matter or other deleterious matter. "Fine Aggregate" is aggregate most of which passes through 4.75mm IS sieve. "Coarse Aggregate" is aggregate most of which is retained on 4.75mm IS sieve.

All fine and coarse aggregates proposed for use in the work shall be subject to the Engineer's approval and after specific materials have been accepted, the source of supply of such materials shall not be changed without prior approval of the Employer. The laboratory tests shall be carried out by the contractor at his own cost if required by the Employer. Machine made sand will be acceptable, provided the constituent rock/gravel composition shall be sound, hard, dense, non-organic, un-coated and durable against weathering. Laboratory tests of crushed aggregates shall be submitted to Employer prior to the use of above aggregates.

## **5. Water**

### **5.1 General**

Water used for both mixing and curing shall be free from injurious amounts of deleterious materials. Potable waters are generally satisfactory for mixing and curing concrete. The water used for concreting purpose shall be used only after the approval of the Employer. In case of doubt, the suitability of water for making concrete shall be ascertained by the compressive strength and initial setting time test specified in IS 456.

## **6. Formwork**

The formwork shall be able to withstand loads that may be forced by concrete weight and pressure, vibration and shock during concrete works and shall not distort or warp to the poured concrete. The formwork shall include all spacers, chairs, bolsters, cover blocks, ties, and other devices necessary for properly placing, spacing, supporting and fastening reinforcement in place. The formwork shall remain in position until the concrete gains adequate compressive strength as per the internationally accepted norms and practices. The formwork shall be so constructed that it is rigid enough to remain free from any bulging, sagging or any movement during the placing of the concrete and that it can be subsequently removed without damaging concrete. The formwork shall be sufficiently watertight to prevent loss of liquid from the concrete. All formworks shall be fixed to proper elevation. No concrete work shall be undertaken by the contractor until the level, size, suitability etc. is approved by the Engineer. No forms shall be removed or staging struck until it is safe to do so and approved by the Engineer. All vertical centering members shall be sufficiently braced with stiff members. Bamboo shall not be used as bracing members. All formworks shall be removed without shock or vibration and without damaging the new concrete. The side forms shall be so fixed that removing the supporting forms and posts is not disturbing to any extent. In no circumstances should the supporting forms be struck until the concrete reaches strength of at least twice the stress to which the concrete may be subject at the time of striking. Under normal conditions the periods shown below are the minimum which should be allowed between the placing of the concrete and removal of the forms. In the case of horizontal members, it is desirable that the supports or props should be kept for sufficiently long period to prevent sagging of the members.

## **7. Reinforcement**

### **7.1 General**

All the reinforcements used shall be tested for relevant strength if desired by the Employer. However, test certificates from renowned laboratory shall be accepted. Only the reinforcement steel approved by Royal Government of Bhutan shall be used. All reinforcement bars supplied by the contractor shall be of grade Fe 500 TMT bars conform strictly to I.S 432/1786 latest revision or confirming to equivalent renowned standards. Reinforcing rods shall be fabricated to shapes and dimensions shown and shall be placed where indicated on the drawings or required to carry out intent of drawing and specifications. Before being placed, reinforcement shall be thoroughly inspected and cleaned. Reinforcement shall not be bent or straightened in a manner that injures to the material. Bars with kinks or bends not shown on drawings shall not be placed. The reinforcement shall be cleaned of dirt and scales at all stages of work without extra cost to the Employer. Reinforcement shall not be spliced at points of maximum stress. Laps for reinforcement shall not be permitted unless otherwise specified in the drawing or approved by the engineer in-charge of the Employer. All reinforcement shall be made clean, free from grease, oil, paint, dirt, loose mill scale, loose rust, dust, bituminous materials or any other substances that will destroy or reduce the bond. All rods shall be thoroughly cleaned before being fabricated. Pitted and defective rods shall not be used. All bars shall be rigidly held in position before concreting. No welding of rods to obtain continuity shall be allowed unless approved by the Employer. If welding is approved, the work shall be carried out as per IS2751 or equivalent according to best modern practices and as directed by the Engineer. In all cases of important connections, strength of bars welded, Special precautions, as specified by the Engineer shall be taken in the welding of cold worked reinforcing bars and bars other than mild steel. All bars shall be accurately bent according to the sizes and shapes shown on the detailed working drawings/bar bending schedules (prepared by the Contractor and approved by the Employer). They shall be bent gradually by machine or other approved means. Reinforcing bars shall not be straightened and re-bent in a manner that will injure the material, bars containing cracks or splits shall be rejected. They shall be bent cold, except bars of over 25mm in diameter, which may be bent hot, if specifically approved by the Employer. Bars, which depend for their strength on cold working, shall not be bent hot. Bars bent hot shall not be heated beyond cherry red color (not exceeding 645° C) and after bending shall



be allowed to cool slowly without quenching. Bars incorrectly bent shall be used only if the means used for straightening and re-bending will be such that it shall not, in the opinion of the Employer, injure the material. No reinforcement shall be bent in position in the works without approval, whether it is partially embedded in hardened concrete, bars having kinks or bends other than those required by design shall not be used. Unless indicated otherwise in the drawings, clear concrete cover for reinforcement shall be 50mm at all sections. Increased cover thickness may be provided when surfaces of concrete members are exposed to the action of harmful chemicals (as in the case of concrete in contact with earth faces contaminated with such chemicals, acid, vapor, saline atmosphere, etc. and such increase of cover may be 30mm specified by the Engineer. The correct cover shall be maintained by cement mortar briquettes or other approved means. Reinforcement for footings grade beams and slabs on sub-grade shall be supported on pre-cast concrete blocks as approved by the Engineer.

## **8. *Random Rubble Masonry***

- 8.1 The rubble shall be of the best quality trap/granite/ballast stones obtained from the approved quarry. The sample of the stone to be used shall be approved from the engineer-in-charge. All stones shall, generally, be freshly quarried and shall be sound, dense, hard, free from segregation, cracks, weathered portions and other structural defects or imperfections, tending to offset soundness and strength. The percentage of water absorption shall generally not exceed 5 % by weight.
- 8.2 All stones shall be wetted before use. Stones shall be neatly worked to requisite sections and forms and shall have fully dressed beds and joints. At least 50% of the stones shall be 0.015 Cu.m, in content when reckoned individually. The length of stones for stonemasonry shall not exceed three times the height and the breadth or base shall not be greater than three fourth the thickness of wall, or not less than 15 cm. The height of stone may be up to 30 cm. Stones shall be laid on the natural beds and shall run sufficiently inside the wall thickness.
- 8.3 No hollow space shall be left out and inter spaces of stones being filled with mortar and stone chips, driven hard and not with mortar only. All mortar to be used shall be of the type and proportion mentioned in the item. Cement, sand and water to be used shall conform to their relevant specifications as described under other clauses of this document.
- 8.4 The masonry shall be laid to plumb, lines levels, curves, shapes as shown in drawings. All required holes for passage of water or pipes are to be embedded during construction as specified. All stones shall be wetted before laying in masonry. Concrete surfaces any RCC structure coming in contact with masonry shall be properly chipped washed and wetted before start of masonry work. The concrete surface coming in contact with masonry shall be given a thick coat of cement slurry as the masonry work progresses in height. Clean chips and spraws, carefully selected to fit in the space shall be wedged into the mortar joints and beds wherever necessary to avoid thick beds or joints or mortar. However, proper shaping and dressing of stones shall be done prior to their laying in masonry and hammering shall not be resorted to often after the stones are laid in position.
- 8.5 The bond stones shall be used in every square meter area of masonry wall and shall extend from front to back to thin walls having width of 600 mm and shall overlap by at least 150 mm. in walls having thickness more than 600 mm when laid from both sides.
- 8.6 When the work has to be started on the old or the one completed a long while ago or in the previous working seasons, care shall be taken to roughen and clean the old surface satisfactorily without disturbing the masonry before laying the new. It shall be wetted before laying the bedding mortar. When practicable, the whole masonry in any structure shall be carried out up to uniform level throughout. But when breaks are unavoidable in carrying the work continuously at a uniform level, sufficiently long steps shall be left.
- 8.7 All junctions of walls shall be formed at the time when walls are being built. Cross walls should be carefully bonded into the main walls. All masonry built in cement mortar shall be kept continuously wet for 14 days from date of laying.
- 8.8 Should the mortar perish i.e. becomes dry, white or powder through neglect of watering and if the masonry shows hollow joints or non-adherence of mortar to the stones or if the work does not conform to drawings and specifications, the work shall be pulled down and rebuilt by the contractor at his own cost and risk. All masonry shall be thoroughly cleaned and washed down on completion and all stains, adhering mortar removed from the surface and raking of joints carried out as the scaffolding is being lowered and removed. Holes left in masonry for supporting scaffolding shall be filled and made good before pointing/plastering.

## **9. MS Posts**

All MS posts/angles shall be free from rust, scale, cracks, twists and other defects and shall be fabricated to the required shape and size out of specific sections. After casting the post in concrete, it shall be left at the same place and cured for 7 days. The exposed surfaces of the angles/posts shall be applied with a coat of approved primer.

## **10. Chain link**

The chain link shall be of approved manufacture and of correct size, gauge etc. It shall be of GI construction. The base material shall be of commercial quality mild steel. The wire shall be free be in circular section, free from scale, rust, cuts, welds and other defects and shall be uniformly galvanized. The GI chain link shall be fixed as per the instruction of the TIPL.

## **11. Inspection**

All the works shall be inspected by Employer. Erected and secured reinforcement shall be inspected and approved by Engineer prior to placement of concrete. No placement of shall take place with the permission of the Employer.

**SECTION-V**  
**Forms of Bid, Qualification Information, Letter of Acceptance, and Contract**

1. Contractor's Bid (Declaration Form)

*Notes on Form of Contractor's Bid: The Bidder shall fill in and submit this Bid form with the Bid.*

Name of Work: Site Development and *Construction of Foundation for Telecommunication Structures at (as sites listed in clause 1)*

**To**  
**Managing Director,**  
**Tashi InfoComm Private Ltd.**  
**Thimphu Bhutan**

Having examined all the Conditions of Contract, Specification, Drawings, and Bill of Quantities and addenda Nos. \_\_\_\_\_ or the execution of the above-named Works, we offer to execute and complete such works in accordance with the Conditions of Contract accompanying this Bid for the Contract Price of Nu..... [Ngultrum.....]

This Bid and your written acceptance of it shall constitute a binding Contract between us. We understand that you are not bound to accept the lowest or any Bid you receive.

We undertake, if our Bid is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Employer's notice to proceed, and to complete the whole of the Works comprised in the Contract within \_\_\_\_ months from the commencement date.

We agree to abide by this Bid for the period of 90 days from the date fixed for receiving the same, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

In case if I withdraw my bid after opening for whatsoever reasons, I agree to pay the 2% bid security amount as specified in table, clause 1 and also I shall be bound to pay the cost difference (positive) between my bid with that of the next lowest evaluated bidder and failure on my part to do so within 14 days from the date of notification by the employer, will authorize the client to debar my firm for a period of 2 years or more.

Authorized Signature:

(Affix Legal Stamp)

Name and Title of Signatory:

Name of Bidder:

Address:

Contact no (mandatory):

## 2. Qualification Information

**Notes on Form of Qualification Information:** The information to be filled in by Bidders in the following pages will be used for purposes of post qualification or for verification of prequalification as provided for in Clause 4 of the Instructions to Bidders. Attach additional pages as necessary.

### 1. Individual Bidders or Individual Members of Joint Ventures, Consortia or Associations

#### 1.1 Constitution or legal status of Bidder: [attach copy]

Name of Contractor [insert] : \_\_\_\_\_

Address and Tel. No. (If any) [insert] : \_\_\_\_\_

Place of registration [insert] : \_\_\_\_\_

Power of attorney of signatory of Bid: [attach copy]

Past Experience (not mandatory): [attach copy]

### 2. Additional Requirements

**2.1** Bidders should provide any additional information required in the Bidding Data Sheet.

3. Sample Form of Performance Bank Guarantee.

Ref.....

Date.....

To  
**Tashi InfoComm Private Ltd.**  
**Thimphu Bhutan**

Dear Sir,

WHEREAS \_\_\_\_\_ (name and address of Contractor) (hereinafter called “the Contractor “ ) has undertaken, in pursuance of Contract No.

\_\_\_\_\_ dated \_\_\_\_\_ to execute \_\_\_\_\_

(name of Contract & brief description of works hereinafter called “ the Contract“); AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee.

NOW THEREFORE we affirm that we are the Guarantor and responsible to you, on behalf of the Contractor up to a total of \_\_\_\_\_ (amount of Guarantee in Ngultrum) \_\_\_\_\_ (in words), and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of \_\_\_\_\_ (amount of Guarantee in Ngultrum) as aforesaid without your needing to prove or to show grounds or reason for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the works to be performed there under or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until the date of issue of the Taking-Over Certificate.

SIGNATURE AND SEAL OF THE GUARANTOR \_\_\_\_\_

NAME OF BANK \_\_\_\_\_

ADDRESS \_\_\_\_\_

DATE \_\_\_\_\_

4. SAMPLE FORM: BANK GUARANTEE FOR ADVANCE PAYMENT

Ref.....

Date.....

**To**  
**Tashi InfoComm Private Ltd.**  
**Thimphu Bhutan**

Dear Sir,

In accordance with the provisions of the Conditions of Contract, Clause *[insert Clause No.]* (“Advance Payment”) of the above-mentioned Contract, *[name and address of Contractor]* (hereinafter called “the Contractor”) shall deposit with *[name of Employer]* a Bank Guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of *[amount of Guarantee] [amount in words]*.<sup>1</sup>

We, the *[Bank or Financial Institution]*, as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to *[name of Employer]* on his first demand without whatsoever right of objection on our part and without his first claim to the Contractor, in the amount not exceeding *[amount of Guarantee] [amount in words]*.<sup>2</sup>

We further agree that no change or addition to or other modification of the terms of the Contract or of Works to be performed there under or of any of the Contract documents which may be made between *[name of Employer]* and the Contractor, shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any such change, addition, or modification.

This Guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until *[name of Employer]* receives full repayment of the same amount from the Contractor.

Yours truly,

Signature and seal: \_\_\_\_\_

Name of Bank/Financial Institution: \_\_\_\_\_

Address: \_\_\_\_\_

Date: \_\_\_\_\_

---

<sup>1</sup> An amount is to be inserted by the Bank or Financial Institution representing the amount of the Advance Payment, and denominated in the currency of the Advance Payment as specified in the Contract.

<sup>2</sup> An amount is to be inserted by the Bank or Financial Institution representing the amount of the Advance Payment, and denominated in the currency of the Advance Payment as specified in the Contract.

5. Sample Form: Extension of Bank Guarantee

Ref.....

Date.....

**To**  
**Tashi InfoComm Private Ltd.**  
**Post Box 1502**  
**Norzin Lam**  
**Thimphu, Bhutan**

Dear Sir,

Sub: Extension of Bank Guarantee No.....for an Amount.....favouring yourselves  
expiring on .....on account of M/s.....in respect of Contract  
No.....dated.....(hereinafter called Original Bank Guarantee).

At the request of M/s.....We.....Bank, Branch office  
at.....and having its Head Office at.....do hereby  
extend our liability under the above mentioned Guarantee No..... Dated.....for a  
further period of..... Years/Months from.....to expire on .....Except  
as provided above, all other terms and conditions of the Original Bank Guarantee  
No.....dated.....shall remain unaltered and binding.

Please treat this as an integral part of the Original Guarantee to which it would be attached.

Yours Faithfully,

For.....  
Manager/Agent/Accountant

Power of Attorney No.....

Dated.....

**SEAL OF BANK**

**NOTE:** The non-judicial stamp paper of appropriate value shall be purchased in the name of the Bank who has issued the Bank Guarantee.

6. Letter of Acceptance

*[Letterhead paper of the Employer]*

Ref.....

Date.....

To:

Dear Sir,

This is to notify you that your Bid dated [insert date] for execution of the [insert name of the Contract] for the Contract Price of the equivalent of [insert amount in number and words] as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

Disputes arising from the implementation of the contract shall be dealt as per the clause no ITB 39.1 in the BDS.

The Contract in duplicate is attached hereto. You are hereby instructed to:

- a) confirm your acceptance of this Letter of Acceptance by signing and dating both copies of it, and returning one copy to us no later than 10 days from the date hereof;
- b) proceed with the execution of the said Works in accordance with the Contract;
- c) sign and date both copies of the attached Contract and return one copy to us within 10 days of the date hereof; and
- d) forward the Performance Security pursuant to ITB Sub-Clause 36.1, i.e., within 10 days after receipt of this Letter of Acceptance, and pursuant to CCC under Clause 11.

Authorized Signature:

Name and Title of Signatory:

Name of Agency: \_\_\_\_\_

Attachment: Contract



## 7. Agreement

This Agreement made this [insert date] between the [insert name and address of employer](hereinafter called “the Employer”) of the one part and insert name and address of Contractor] (hereinafter called “the Contractor”) of the other part.

Whereas the Employer is desirous that certain works should be executed by the Contractor, Viz. [insert name of Contract](hereinafter called the “Works”) and the employer has accepted the Bid by the Contractor for the execution and completion of such works and remedying of any defects therein.

Now this Agreement witnessed as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, Viz.:
  - a) The letter of Acceptance;
  - b) The said bid; lieu
  - c) The condition of Contract;
  - d) The Technical Specifications and the scope of works;
  - e) The Drawings;
  - f) The priced Bill of Quantities;
  - g) The Schedules of Supplementary information
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the contractor hereby covenants with the Employer to execute and complete the works and remedy any defects therein in conformity in all respects with the Provisions of the contact.
4. The Employer hereby covenants to pay the contractor in consideration of the execution and completion of the works and remedying of defects therein the Contract price or such other sum as June become payable under the provisions of the contract at the times and in the manner prescribed by the Contact.
5. Any notice under this Contract shall be in the form of a letter, telex, cable or facsimile. Notice to either party shall be given to the following address, unless subsequently modified by either party in writing:

FOR THE EMPLOYER:

Technical Officer, Civil Section,  
Tashi InfoComm Private Ltd.,  
Thimphu: Bhutan.

(Address and Fax # etc.) (02) 322678

FOR THE CONTRACTOR:

[Insert name of Agency]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed in accordance with the laws of the Kingdom of Bhutan on the day and year written above.

---

Employer Contractor

---

Authorized Signature Authorized Signature

Signed in the presence of:

---

Witness to Employer's Signature Witness to Contractor's Signature

## SECTION-VI

### Site Information, Bill of Quantities & Drawings

#### 1. Site Information

Tentative free walking distance from the road end to the individual sites and sites to the road end(To-and-Fro) are mentioned in the table below. However, bidders are advised to visit the site for more information as the information given may not be accurate.

SL.No.	Package	Dzongkhag	Site Name after survey by SPPD	Tower height	Tentative free walking distance (To-and-Fro)- In mins
1	1	Lhuntse	Ney	35	10
2		Wangdi	Phethekha	15	Nil

2. The Bill of Quantities attached.

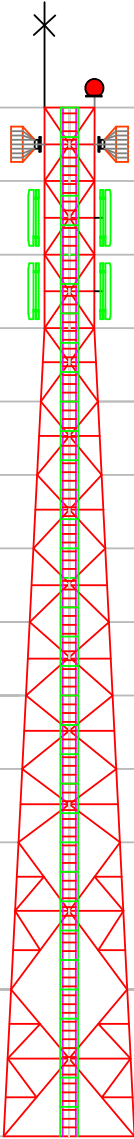
3. Drawings attached.

BoQ for site development works, construction of tower foundtions,solar foundation and APM plinth at Ney in Lhuntse(35m tower)- tentative free walking distance is 10mins(To and Fro.)					Ney, Lhuntse	
SI No	BSR Code	Item Descriptions	Unit	Qty	Rate	Amount
<b>Site Development</b>						
1	CG0002	Clearing jungle including uprooting of vegetation & trees of girth < 300mm & disposal within 50m of the site	sq.m	204.37		
2	CG0010 to CG0013	Felling trees including cutting of trunks and branches, removal of roots, stacking of serviceable materials and disposal of rubbish within 50m lead- Girth 300 to 2400mm (or) Girth > 2400mm	each	10.00		
3	EW0031+E W0034	Earth work in excavation over areas, depth >300mm, width >1.5m, area >10 Sq.m on plan, including disposal of excavated earth within 50m lead and 1.5m lift & disposed soil to be neatly dressed for ground cutting or levelling.- All types of soil (or) All types of rock requiring chiselling (where blasting is prohibited); payment will be not done for the unnecessary ground cutting without the consultation of site engineer or site site supervisor	cu.m	35.35		
4	EW0106+ EW0109	Excavation in foundation trenches or drains not exceeding 1.5m in width or area 10 sq.m on plan, including dressing & ramming, disposal of surplus soil within 50m lead & 1.5m lift. All types of Soil (or) All types of rock requiring chiselling (where blasting is prohibited)	cu.m	4.60		
5	SM0070	Providing and laying Hammer dressed dry stone soling in marshy area where ever necessary with the consultation of site engineer	cu.m	3.45		
6	SM0005	Providing & laying Random Rubble Masonry with hard stone in foundation & plinth- In cement mortar 1:4	cu.m	11.49		
7	CW0003	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level. 1:2:4 (1 cement : 2 sand : 4 graded crushed rock 20 mm nominal size)	cu.m	5.02		
8	RC0090	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork. Foundation and plinth etc.(Use only 10mm ply wood for shuttering), other than water proof red shuttering ply will not be entertained.	sq.m	35.33		
9	SW0003	Steel work in single section including cutting, hoisting, fixing and applying priming coat of red lead paint. In Tees, angles and channels as per drawingsa-MS Angle 50x50x6mm @ 4.5 kg/m and 40x40x5mm @ 3 kg/m	kg	655.87		
10	RW0213	Providing & fixing G.I chain-link mesh including fixing of post or struts, G.I staples (excluding the cost of posts/struts, earthwork, concrete etc.) 4mm (8 SWG) x 100mm	sq.m	114.98		
11	RW0202	Providing & fixing G.I barbed Wire Netting including fixing of post or struts, G.I staples, coal tarring in case of ballies complete(posts/struts, earthwork, concrete paid separately) 2.5mm , (12 SWG), 4 barbs form by twisting two point wires, each two turns, pitch of barbs 75mm	m	172.47		
12	Analyzed	Providing and fixing Complete Gate System as shown in the drawing. The price of built up steel sections, RCC Post, shuttering,G.I Chain-link mesh 4mm (8 SWG) x (100x100)mm, Sliding bolts, MS made hindges as per site engineer requirement, foundation works, earth work in foundation, Stone soling of 10cm thick below the location of shutter when closed (30cm wide), back filling,etc as per the drwaing.	each	1.00		
<b>Total for Site development(a)=</b>						
<b>35M Tower foundation</b>						
SI No	BSR Code	Item Descriptions	Unit	Unit	Qty	Rate
1	EW0021	Earth work in surface excavation, depth <300mm, width >1.5m, area >10 Sq.m in plan, including disposal of excavated earth within 50m lead & 1.5m lift and disposed soil to be neatly dressed	cu.m	0.90		
2	EW0106+ EW0109	Excavation in foundation trenches or drains not exceeding 1.5m in width or area 10 sq.m on plan, including dressing & ramming, disposal of surplus soil within 50m lead & 1.5m lift. All types of Soil (or) All types of rock requiring chiselling (where blasting is prohibited)	cu.m	51.23		
3	RC0090	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork. Foundation and plinth etc.(Use only 10mm ply wood for shuttering), other than water proof red shuttering ply will not be entertained.	sq.m	27.64		
4	CW0008	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level. 1:4:8 (1 cement : 4 sand : 8 graded crushed stone 40 mm nominal	cu.m	2.24		
5	RC0002	Providing & laying in position reinforced cement concrete excluding the cost of centering, shuttering and reinforcement - all work upto plinth level. 1:1.5:3 (1 cement : 1.5 sand : 3 graded crushed rock 20 mm nominal size)	cu.m	8.26		
6	EW0195	Filling of trenches, sides of foundations etc. in layers <200mm using selected excavated earth, ramming etc. within lead 50 m & lift 1.5m	cu.m	41.81		
7	RC0083	Providing & fixing Thermo-Mechanically Treated reinforcement bar (Yield Strength 500 MPa) for R.C.C work including cutting, bending, binding and placing in position complete.Chair should be provided as per the drawing.	kg	695.92		
8	Analysised	Providing and laying of concrete clear cover block as per the sample provided in the drawing or as per the site engineer's requirement.	each	48.48		

9	Analysised	Transportation of tower and shelter template and other necessary things from <b>Gelephu Store to the respective sites</b> and tower Grouting to be done after the erection of the Tower. If the Tower grouting is not done then the retention money will be not released or retention money with bank gurantee is not approved till the tower grouting is done.	each	1.00		
		<b>Total for Tower(b)=</b>				
		<b>Solar Foundation &amp; APM Plinth</b>				
<b>SI No</b>	<b>BSR Code</b>	<b>Item Descriptions</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate</b>	<b>Amount</b>
1	EW0021	Earth work in surface excavation, depth <300mm, width >1.5m, area >10 Sq.m in plan, including disposal of excavated earth within 50m lead & 1.5m lift and disposed soil to be neatly dressed	cu.m	0.36		
2	RC0090	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork in fdn(Use only 10mm ply wood for shuttering), other than water proof red shuttering ply will not be entertained.	sq.m	64.96		
3	CW0003	Providing and laying in position plain cement concrete excluding the cost of centering and shuttering - All work upto plinth level. 1:2:4 (1 cement : 2 sand : 4 graded crushed rock 20 mm nominal size)	cu.m	1.74		
4	SM0070	Providing and laying Hammer dressed dry stone soling in marshy area where ever necessary with the consultation of site engineer	cu.m	0.56		
5	RC0083	Providing & fixing Thermo-Mechanically Treated reinforcement bar (Yield Strength 500 MPa) for R.C.C work including cutting, bending, binding and placing in position complete.Chair should be provided as per the drawing.	kg	5.37		
		<b>Total for solar foundation and APM plinth( c)=</b>				
		<b>Total for Ney site(A)=</b>				

BoQ for 15m monopole Tower (Monopole foundation, transportation and erection)-Installation using crane-tentative free walking distance(To and Fro.): Nil					Phetekha, Wangdi	
Sl No.	BSR Code	Description of Work	Unit	Qty	Rate	Amount
1	CG0002	Clearing jungle including uprooting of vegetation & trees of girth < 300mm & disposal within 50m of the site	sq.m	4.04		
2	CG0010 to CG0013	Felling trees including cutting of trunks and branches, removal of roots, stacking of serviceable materials and disposal of rubbish within 50m lead- Girth 300 to 2400mm (or) Girth > 2400mm	each	1.00		
3	EW0031+E W0034	Earth work in excavation over areas, depth >300mm, width >1.5m, area >10 Sq.m on plan, including disposal of excavated earth within 50m lead and 1.5m lift & disposed soil to be neatly dressed for ground cutting or levelling.- All types of soil (or) All types of rock requiring chiselling (where blasting is prohibited); payment will be not done for the unnecessary ground cutting without the consultation of site engineer or site site supervisor	cu.m	1.05		
4	EW0106+ EW0109	Excavation in foundation trenches or drains not exceeding 1.5m in width or area 10 sq.m on plan, including dressing & ramming, disposal of surplus soil within 50m lead & 1.5m lift. All types of Soil (or) All types of rock requiring chiselling (where blasting is prohibited)	cum	7.88		
5	SM0070	Providing and laying Hammer dressed dry stone soling in marshy area where ever necessary with the consultation of site engineer	cu.m	0.61		
6	RC0090	Providing & fixing centering and shuttering (formwork), including strutting, propping etc. and removal of formwork in fdn(Use only 10mm ply wood for shuttering). Plank form work is not entertain	sqm	10.74		
7	CW0003	P & L in position PCC (1:2:4, crushed rock 20mm nominal size)excluding the cost of centering and shuttering in the base of the fdn as per the dwg.	cum	0.20		
8	RC0002	P & L in position reinforced cement concrete 1:1.5:3 (1 cement : 1.5 sand : 3 graded crushed rock 20mm nominal size)excluding the cost of centering and shuttering and reinforcement in fdn.as per dwg. The cost of fixing the templates and anchor bolts in the fdn shall also be included here. vibrator machine should be use for compaction of the concrete. if not the we wont allow to mix the concrete.	cum	3.24		
9	EW0195	Filling of trenches, sides of foundations etc. in layers using selected excavated earth, ramming etc.	cum	4.80		
10	RC0083	Providing and fixing TMT reinforcement bars (Fe 500) for RCC work including cutting, bending, binding and placing in position complete. The reinforcement bars used shall be according to the technical specification.	kg	263.71		
		slab- 12mm dia bar, bottom reinforcement- both way				
11	MAR	Providing and laying of concrete clear cover block as per the sample provided in the drawing or as per the site engineer's requirement.	each	16.00		
12	MAR	Transportation of mono pole Tower & tower base including nuts & bolts, accessories etc. from TIPL store <b>Phuntsholing to the respective sites/individual</b> site and the grouting of the tower should be done after erection of tower as per the instruction of site engineer.	L/S	1.00		
13	MAR	Erection of 15M mono pole	L/S	1.00		
		<b>Total for Phetekha site (B)=</b>				
		<b>Grand Total (A+B)=</b>				

LEVEL	35000	32500	30000	27500	25000	22500	20000	17500	15000	12500	10000	5000	0000
FACE WIDTH	1700	1700	1700	1700	1950	2200	2450	2700	2950	3200	3450	3950	4450
PLATFORM	WP								RP				
LEG JOINT NAME	A	B	C	D			F		F		G	H	I
LEG LENGTH	4488	2500	2500	2500	5000	5000	5000	5000	5000	5000	5000	5000	5000
LEGS SIZE	65x65x5	75x75x5	90x90x6	90x90x8	100x100x10	110x110x10	130x130x10	130x130x12					
PANEL NO	1	2	3	4	5	6	7	8	9	10	11	12	
LENGTH (METER)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5	5	
DIAGONALS	50x50x4	50x50x4	50x50x5	50x50x4	50x50x4	50x50x4	50x50x4	50x50x4	50x50x5	60x60x5	65x65x5		
PANEL TOP - HORIZONTALS	50x50x4	50x50x4											
PANEL MID - HORIZONTALS	45x45x04	45x45x04	45x45x04	45x45x04	50x50x4	50x50x4	50x50x4	50x50x4	50x50x4	50x50x4	50x50x4	50x50x4	
PLAN BRACING	45x45x04	45x45x04											
SEC. BRACING											45x45x4	45x45x4	



PLAN VIEWS



Tower Back to Back -4450mm

Tower Center to Center -4291mm

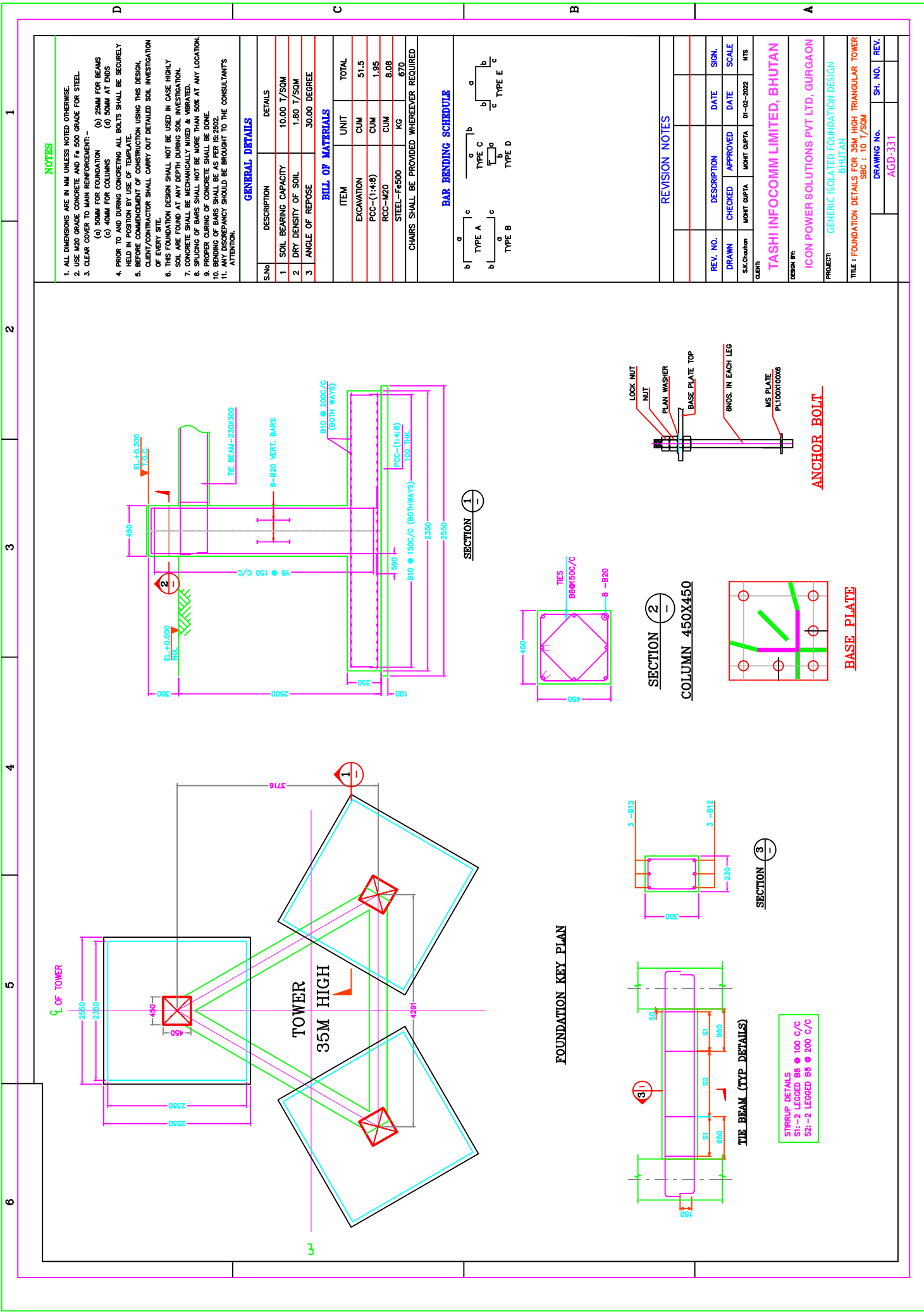
<b>ICON POWER SOLUTIONS PVT LTD</b>  112 & 113, Sector 5, IMT Manesar, Gurgaon - 122 050	TITLE	35 METER TOWER	Wind Speed	180 KMPH	Design:	TIA/EIA-222 G	
	SUB. TITLE	TRIANGULAR ANGULAR TOWER	Deflection	< 1.0 Degree	F.O.S.	1.2 Dead Load & 1.6 Wind Load	
	Drawing No.	AGD-331	Loading	6 GSM Antenna (Weight 35kgs Each) 2x1.2m Parabolic MW Antenna.	1	Drawn By S.K.Chauhan	Drawn Date 25-01-2022
	Client	TASHI INFOCOMM LIMITED, BHUTAN					

**Technical Specification sheet of  
35 mtr. 3 Legged Angular Tower AGD-331**

**25/01/2022**

S.No.	Details	Remarks
	Designed For:	M/s TASHI INFOCOMM LIMITED BHUTAN
<b>1</b>	<b><u>DESIGN SPECIFICATION</u></b>	<b>(ANSI/TIA-222G)</b>
1.1	Design Wind Velocity	
	Survival	180 KMPH
	Operational	
1.2	Twist & Sway	Less than 0.5 degree
1.3	Factor of Safety	1.2 For Dead Load 1.6 For Wind Load
1.4	Antenna Loading	
	GSM Antenna	6 nos. GSM
	MW Antenna	2nos. 1.2 m MW
1.5	Antenna Pole Mount stand	Separate as per requirement
<b>2</b>	<b>Obstruction Light System</b>	
2.1	No .Of Obstruction Light Lamp&Watts	1 No. LED Type
2.2	Power Cable Type&Length	2.5 Sqmm x 35 mtr. Length
		2 core armoured
<b>3</b>	<b>Lighting Protection &amp; Earthing System(Grounding system)</b>	
3.1	Lightning Arrestor	1.2mtr long
		1 nos
<b>4</b>	<b>Structure Of Tower</b>	Self Supprting 3 legged Angular construction with vertical ladder in the center intergrated with cable tray & horizontal cable tray from tower to Building
4.2	Main Leg	90 Degree Angle
4.3	Bracing	90 Degree Angle
4.4	Climbing Ladder	450 mm Rung Width, 300mm Rung space & 700mm Hoop
4.5	Cable Tray Verticle	450 mm Width
		along the tower Height
4.6	Cable Tray Horizontal	450 mm Width
		6 MTR.
4.7	Platforms	
	Working	1 Nos
	Rest	1 Nos.
		32.5 mtr
		15 mtr
5	5.1 Foundation bolt & Template	As Per Tower Design
	5.2 Bolts & Nut with spring & Plane washer	Hot Dipped Galvanized Property Class 5.6
		As per Standard <b>ASTM A 153</b>
5.3	Size	As per Design Specs.
6	6.0 Hot Dipped Galvanization	As per Standard <b>ISO 1461</b>
		85 Microns
<b>7</b>	<b><u>Others to be specified</u></b>	
7.1	Weight Per Tower	5300 Kgs
		(+/-) 5%
7.2	Drawing No.	AGD-331





**NOTES**

1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2. USE M20 GRADE CONCRETE AND F<sub>y</sub> 500 GRADE FOR STEEL.
3. CLEAR COVER TO MAIN REINFORCEMENT:-  
 (a) 50MM FOR FOUNDATION  
 (b) 25MM FOR BEAMS  
 (c) 40MM FOR COLUMNS  
 (d) 50MM AT ENDS
4. PRIOR TO AND DURING CONCRETING ALL BOLTS SHALL BE SECURELY HELD IN POSITION BY USE OF TEMPLATE.
5. BEFORE COMMENCEMENT OF CONSTRUCTION USING THIS DESIGN, CLIENT/CONTRACTOR SHALL CARRY OUT DETAILED SOIL INVESTIGATION OF EVERY SITE.
6. THIS FOUNDATION DESIGN SHALL NOT BE USED IN CASE HIGHLY SOIL ARE FOUND AT ANY DEPTH DURING SOIL INVESTIGATION.
7. CONCRETE SHALL BE MECHANICALLY MIXED & VIBRATED.
8. SPLICING OF BARS SHALL NOT BE MORE THAN 50% AT ANY LOCATION.
9. PROPER CURING OF CONCRETE SHALL BE DONE.
10. BENDING OF BARS SHALL BE AS PER IS:2002.
11. IN CASE OF ANY DISCREPANCY SHOULD BE BROUGHT TO THE CONSULTANTS' ATTENTION.

**GENERAL DETAILS**

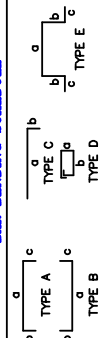
S.No	DESCRIPTION	DETAILS
1	SOIL BEARING CAPACITY	10.00 T/SQM
2	DRY DENSITY OF SOIL	1.80 T/SQM
3	ANGLE OF REPOSE	30.00 DEGREE

**BILL OF MATERIALS**

ITEM	UNIT	TOTAL
EXCAVATION	CUM	51.5
RCC-(1:4:8)	CUM	1.95
RCC-M20	CUM	8.08
STEEL-F <sub>y</sub> 500	KG	670

CHAIRS SHALL BE PROVIDED WHEREVER REQUIRED

**BAR BENDING SCHEDULE**



**REVISION NOTES**

REV. NO.	DESCRIPTION	DATE	SIGN.
DRAWN	CHECKED	APPROVED	DATE
MOHT GUPTA	MOHT GUPTA	MOHT GUPTA	01-02-2022
NTS			

CLIENT: **TASHI INFOCOMM LIMITED, BHUTAN**

DESIGN BY: **ICON POWER SOLUTIONS PVT LTD, GURGAON BHUTAN**

PROJECT: **GENERIC ISOLATED FOUNDATION DESIGN**

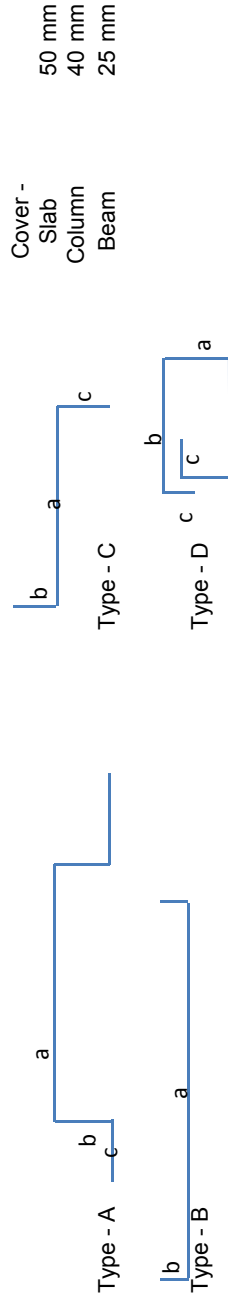
TITLE: **FOUNDATION DETAILS FOR 35M HIGH TRIANGULAR TOWER**

SBC : 10 T/SQM

DRAWING No. **AGD-331**

SH. NO. **REV.**

**Bar Bending Schedule of 35m high 3legged tower**



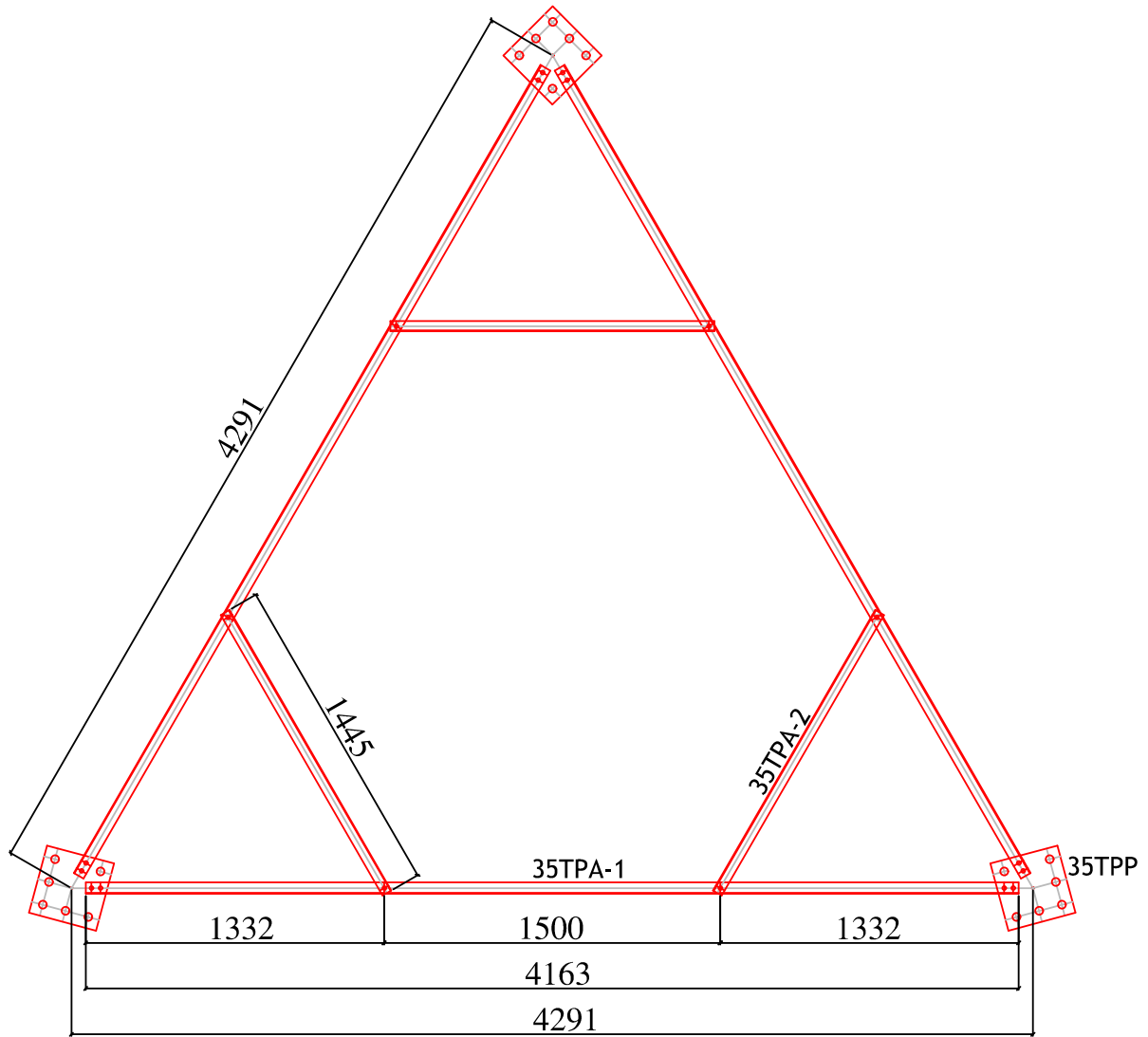
Item	Position	Type	Dia. Of Rebar (mm)	Size	Size	Size	Length (mm)	Qty in Nos both ways or total	Unit wt (kg/m)	Total Weight of (kg)	
				a (mm)	b (mm)	c (mm)					
Raft Slab	Top	B	B10	2250	150	-	2550	78	0.62	123	
	Bottom	B	B10	2250	150	-	2550	96	0.62	151	
Tie Beams	Top	B	B12	4641	300	-	5241	9	0.89	42	
	Bottom	B	B12	4641	300	-	5241	9	0.89	42	
	Strips	D	B8	180	250	80	1020	87	0.40	35	
	Main	C	B20	2700	330	590	3620	24	2.47	215	
Column	Ties	D	B8	342	342	80	1528	57	0.40	34	
		D	B8	242	242	80	1127	57	0.40	25	
								Total			670

\* Chairs Shall be Provided whenever required

Notes :

1. Dimensions of Bars are along the Center Lines.
3. Splicing of Bars should not be more than 50%. Length of splice as per Standards.

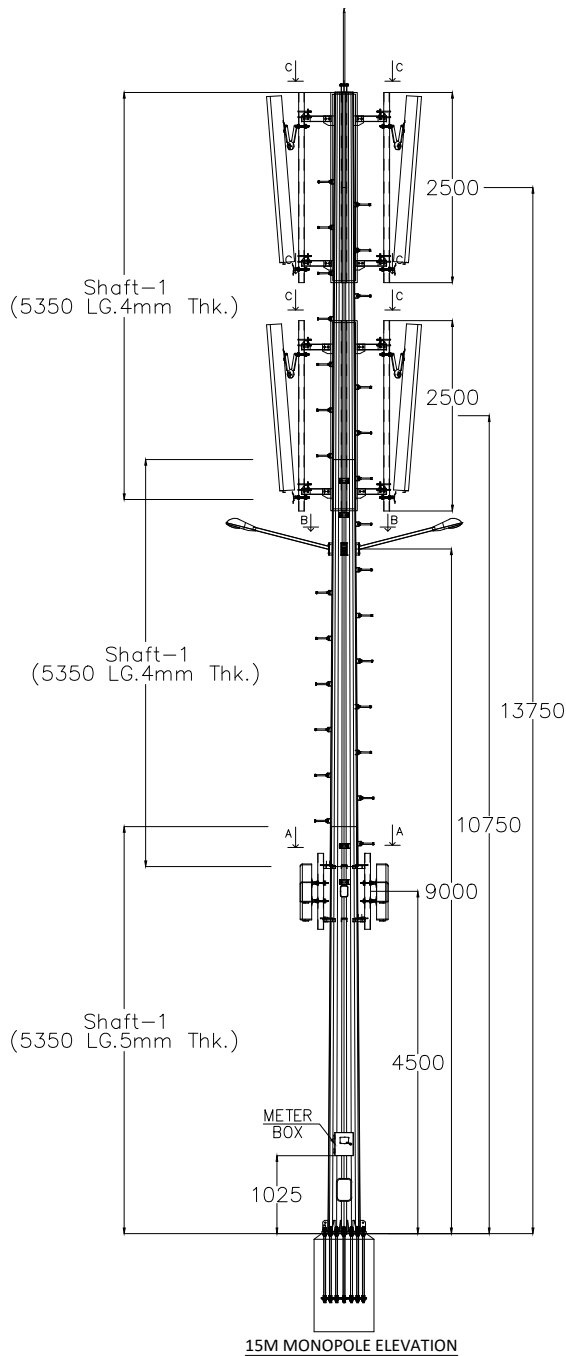
Description & Values of Symbols		
Cement Concrete Sizes		
Symbol	Description	Value Units
th_pcc	Thickness of PCC	100 mm
s_pcc	Side of PCC below the slab	2550 mm
d_excavation	Depth of Excavation	2700 mm
d_foundation_	Depth of Foundation below ground level	2600 mm
s_slab	Side/Dia of slab	2350 mm
th_slab	Thickness of Slab	350 mm
d_column_bgl	Depth of Column below ground level(d_foundation_bgl)	2150 mm
cc_columns	Center to Center distance of Tower Leg Columns	4291 mm
cc_tower	Tower Base Width, Centre to centre of tower legs	4291 mm
h_foundation_	Height of Foundation above Ground Level	300 mm
w_p.beam	Width of Primary Beam	230 mm
d_p.beam	Depth of Primary Beam	300 mm
s_Column	Side of ( square)Column, for tower, width or depth	450 mm
d_column_slab	Distance from end of Slab to center of Column	1175 mm
Calculated Values		
	Toatl Volume of PCC	1.95 cu.m
	Total Volume of RCC	8.08 cu.m
	Total PCC + RCC	10.0 cu.m
	Excavation, assuming vertical digging	51.5 cu.m



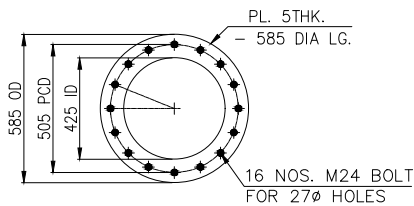
## TEMPLATE FOR 35M TRIANGULAR TOWER

ALL DIMENSIONS ARE IN MM

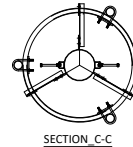
<b>ICON POWER SOLUTIONS PVT LTD</b>  112 & 113, Sector 5, IMT Manesar, Gurgaon - 122 050	TITLE <b>35 METER TRIANGULAR TOWER</b>	<b>AGD-331</b>  Design By Mohit Gupta
	Client <b>TASHI INFOCOMM LIMITED, BHUTAN</b>	



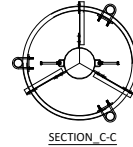
15M MONOPOLE ELEVATION



DETAIL OF TEMPLATE



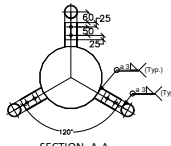
SECTION C-C



SECTION C-C



SECTION B-B LIGHTING ARM



SECTION A-A

**DESIGN DATA :**

- DESIGN STANDARD : IS:875 (PART-3)
- WIND DATA :**
  - WIND LOAD AS Per : IS:875 (PART-3)-2015
  - BASIC WIND SPEED : 170MKPH
  - OPERATIONAL WIND SPEED : 70% OF BASIC WIND SPEED
  - MEAN PROBABLE DESIGN LIFE : 50 YEARS
  - TERRAIN CATEGORY : - 2
  - TOPOGRAPHY FACTOR, K3: 1 (FLAT TERRAIN)
  - IMPORTANCE FACTOR FOR THE CYCLONIC REGION K4: 1.0 (NON-CYCLONIC REGION)
  - AREA AVERAGING FACTOR ,Kc :1.0
  - FACTOR OF SAFETY : 1.5
  - TWST & SWAY LIMIT : ±1.0 Deg.AT OPERATIONAL WIND SPEED
  - STRUCTURE PARAMETERS
  - STRUCTURE CLASS : - B
- ANTENNA CONFIGURATION :**
  - LOAD DISTRIBUTION: -
  - 3 Nos Of GSM Antenna (2.0\*0.3) AT 1.25Mtr BELOW TOP LEVEL
  - 3 Nos Of GSM Antenna (2.0\*0.3) AT 4.25Mtr BELOW TOP LEVEL
  - 3 Nos Of RRUAntenna (1.0\*0.3) AT 10.5Mtr BELOW TOP LEVEL
- MATERIAL DETAILS :**
  - GRADE PF SHAFT STEEL IS E350 AND OTHER MEMBERS ARE E250 GRADE AS PER IS :2062-2006.
  - GRADE OF BOLT IS 8.8 AS PER CODE IS:4000-1992.
  - ALL STRUCTURAL STEEL IS HOT-DIP GALVANIZED CONFIRMING TO IS STANDARDS.
  - ANCHOR BOLTS SHALL BE CONFIRM 5.6 GRADE.

**GENERAL NOTES:**

- ALL DIMENSIONS ARE IN MILLIMETERS, EXCEPT OTHERWISE SHOWN.

SUBMITTED FOR	APPROVAL	INFORMATION	REFERENCE	RECORD	CONSTRUCTION
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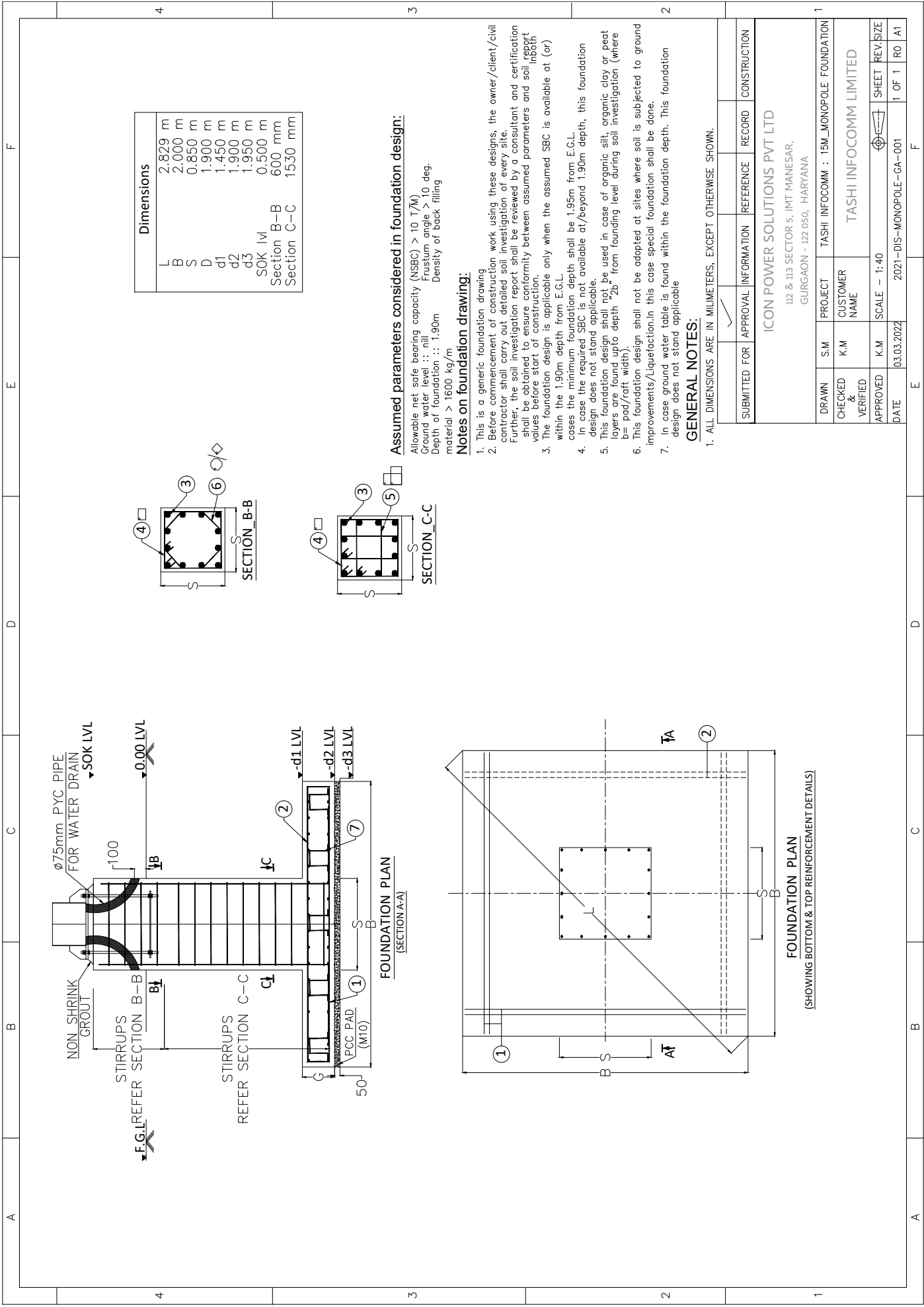
ICON POWER SOLUTIONS PVT LTD

112 & 113 SECTOR 5, IMT MANESAR,

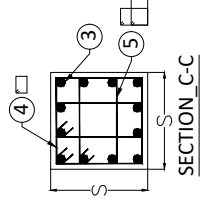
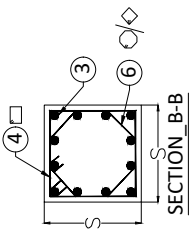
GURGAON - 122 050, HARYANA

DRAWN	S.M	PROJECT	TASHI INFOCOMM : 15M_MONOPOLE
CHECKED AND VERIFIED	M.K	CUSTOMER NAME	TASHI INFOCOMM LIMITED

APPROVED	M.K	SCALE	1:40	SHEET	REV.	SIZE				
REV.	DATE	REVISION & DESCRIPTION	DRAWN	APPR.	DATE	2022-03-2022	2022-DIS-MONOPOLE-GA-001	1 OF 1	RO	A1



Dimensions	
L	2.829 m
B	2.000 m
D	0.850 m
d1	1.900 m
d2	1.450 m
d3	1.900 m
SOK M	0.500 m
Section B-B	600 mm
Section C-C	1530 mm



**Assumed parameters considered in foundation design:**

Allowable net safe bearing capacity (NSBC) > 10 T/M  
 Ground water level :: nil  
 Depth of foundation :: 1.90m  
 material > 1600 kg/m<sup>3</sup>  
 Frustum angle > 10 deg.  
 Density of back filling

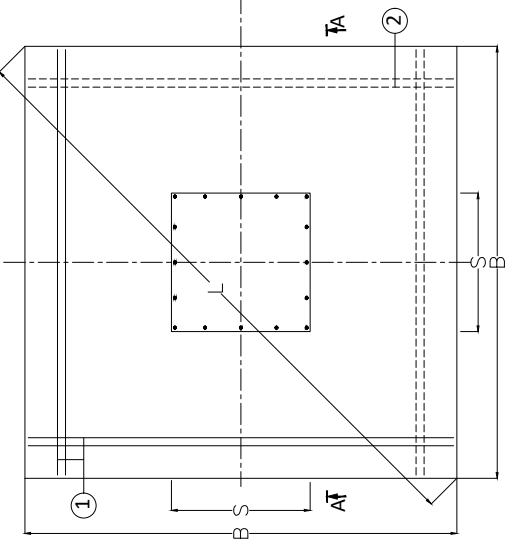
**Notes on foundation drawing:**

1. This is a generic foundation drawing
2. Before commencement of construction work using these designs, the owner/client/civil contractor shall carry out detailed soil investigation of every site. Further, the soil investigation report shall be reviewed by a consultant and certification shall be obtained to ensure conformity between assumed parameters and soil report values before start of construction.
3. The foundation design is applicable only when the assumed SBC is available at (or) within the 1.90m depth from E.G.L.
4. In case the minimum foundation depth shall be 1.95m from E.G.L. design does not stand applicable.
5. This foundation design shall not be used in case of organic silt, organic clay or peat layers are found upto depth "2b" from founding level during soil investigation (where b= pad/raft width).
6. This foundation design shall not be adopted at sites where soil is subjected to ground improvements/Liquefaction. In this case special foundation shall be done.
7. In case ground water table is found within the foundation depth, This foundation design does not stand applicable

**GENERAL NOTES:**

1. ALL DIMENSIONS ARE IN MILLIMETERS, EXCEPT OTHERWISE SHOWN.

SUBMITTED FOR	APPROVAL	INFORMATION	REFERENCE	RECORD	CONSTRUCTION
<b>ICON POWER SOLUTIONS PVT LTD</b> 112 & 113 SECTOR 5, IMT MANESAR, GURGAON - 122 050, HARYANA					
DRAWN	S.M	PROJECT	TASHI INFOCOMM : 15M_MONOPOLE FOUNDATION		
CHECKED & VERIFIED	K.M	CUSTOMER NAME	TASHI INFOCOMM LIMITED		
APPROVED	K.M	SCALE	1:40		SHEET REV/SIZE
DATE	03.03.2022		2021-DIS-MONOPOLE-GA-001	1 OF 1	RO /A1



FOUNDATION PLAN

(SHOWING BOTTOM & TOP REINFORCEMENT DETAILS)

BAR BENDING SCHEDULE						
Sl. NO.	Shape of Ber	Length of Ber (mm)	Dai. Of Ber (mm)	Spacing (mm)	No. of ber	Unit Weight
1		2250	12	126.6	32	0.89
2		2250	12	237.5	18	0.89
3		2800	20	-	12	2.47
4		3200	8	150	15	0.39
5		2250	8	-	44	0.39
6		2600	8	150	5	0.39
7		1200	12	750	16	0.89
<b>Weight of Steel (kg)</b>						262.668
<b>Wastage and splices (kg)</b>						16.1
<b>Total steel Quantity (kg)</b>						<b>278.768</b>

Foundation Quantity		
Items	Pole	Units
Concrete	3.2	cum
PCC	0.2	cum
Steel	278.768	kg
Shuttering	9.3	sq.m
Excavation	23.4	cum

SUBMITTED FOR	APPROVAL	INFORMATION	REFERENCE	RECORD	CONSTRUCTION
	✓				
ICON POWER SOLUTIONS PVT LTD 112 & 113 SECTOR 5, IMT MANESAR, GURGAON - 122 050, HARYANA					
DRAWN	S.M	PROJECT	TASHI INFOCOMM : 15M_MONOPOLE FOUNDATION		
CHECKED & VERIFIED	K.M	CUSTOMER NAME	TASHI INFOCOMM LIMITED		
APPROVED	K.M	SCALE	1:40		SHEET REV. SIZE
DATE	03.03.2022	2021-DIS-MONOPOLE-GA-001		1 OF 1	RO /A1

A	B	C	D	E	F
4					
3					
2					
1					

**GENERAL NOTES**

**1. GENERAL & MATERIAL**

- 1.1 ALL DIMENSION ARE IN 'mm' AND LEVEL ARE 'METER' U.O.S.
- 1.2 DO NOT SCALE DRAWING.
- 1.3 RCC & LEAN CONCRETE SHALL BE OF GRADE M25 & M10 RESPECTIVELY.
- 1.4 FOR AGGRESSIVE SOIL/EXPOSURE CONDITIONS, MINIMUM GRADE OF CONCRETE SHALL BE REFERRED AS PER IS 456 2000, TABLE '3 AND 5'.
- 1.5 STEEL GRADE IS FE415 U.O.S AS PER IS 1786 / IS 1159.
- 1.6 IF ANY LEVEL DIFFERENCE IN EXISTING GROUND IS FOUND AT SITE, THEN SOPIL EXCAVATION FOR FOUNDATION SHALL BE STARTED WITH REFERENCE TO THE LOWER LEVEL AND THE SOIL SHALL BE BACK FILLED, COMPACTED UP TO THE TOP MOST LEVEL OF NATURAL GROUND AND TO AVOID SOIL EROSION (SUFFICIENT PROTECTION ARRANGEMENT SHALL BE MADE).
- 1.7 VERIFY THE ADJACENT SITE FEATURES BEFORE EXCAVATION, PROPER CARE SHALL BE TAKEN TO AVOID DAMAGE TO ADJACENT STRUCTURE.
- 1.8 ANY DISCREPANCY IN THE DRAWING & SITE CONDITION SHALL BE BROUGHT TO THE NOTICE OF SITE ENGINEER & CONSULTANT.
- 1.9 THE FOUNDATION SHALL NOT BE USED IN CASE ORGANIC SILT, ORGANIC CLAY OR PEAT LAYERS ARE FOUND AT ANY DEPTH.
- 1.10 THE FOUNDATION DESIGN SHALL NOT BE ADOPTED AT SITES WHERE SOIL IS SUBJECTED TO GROUND IMPROVEMENT/LIQUIFICATION AND IN THIS CASES SPECIAL FOUNDATION SHALL BE DONE.
- 1.11 THE VENDOR/CONTRACTOR SHALL DESIGN THE TEMPORARY WORK SUCH AS SCAFFOLDING AND SHUTTERING TO HAVE ADEQUATE STRENGTH, AND STABILITY TO SUIT THE DRAWING REQUIREMENTS, IF ANY SPECIFIC CASE ARISE AT SITE, A DETAILED DESIGN SHALL BE SUBMITTED FOR CONSULTANT VERIFICATION BEFORE USING AT SITE.
- 1.12 NO FURTHER EXCAVATION/ CONSTRUCTION IS ALLOWED WITHIN ZONE OF FOUNDATION AND IF ANY SHALL BE VALIDATED BY CONSULTANT.
- 1.13 REINFORCEMENT SHALL BE SUITABILITY ADJUSTED AT SITE TO CLEAR POCKETS, BOLTS, OPENINGS, CUTOUT ETC. AS APPROVED BY SITE ENGINEER UNLESS OTHERWISE SHOWN IN DRAWING.
- 1.14 THE CONTRACTOR/CLIENT SHALL VERIFY ALL QUANTITY, DIMENSION AND CONDITION WITH SITE AND NOTIFY THE ENGINEER/CONSULTANT, IF ANY DISCREPANCY IN DRAWING AND/OR SPECIFICATION BEFORE PROCEEDING THE WORK.
- 1.15 THE TOTAL LENGTH OF BARS (CUTTING LENGTH) SHALL BE CALCULATED ON THE BASIS OF THE APPROPRIATE BENDING DIMENSIONS WITH CORRECTIONS FOR BENDS AND ALLOWANCES FOR ANCHORAGE.

**2. TECHNICAL SPECIFICATION**

- 2.1 MINIMUM COVER TO THE MAIN REINFORCEMENT COLUMN 50mm, FOR PAD 50mm.
- 2.2 THE LAP LENGTH/DEVELOPMENT LENGTH OF BARS SHOULD BE 50 $\phi$  AND STAGGERED REFERENCE SHALL BE MADE TO IS: 456.
- 2.3 NO HONEYCOMB/GAP SHALL BE PERMITTED WHILE CONCRETING.
- 2.4 NO CONSTRUCTION JOINT ARE ALLOWED OTHER THAN SPECIFIED.
- 2.5 CONSTRUCTION ARE CARRIED OUT IN ACCORDANCE TO VARIOUS PROVISIONS LAID DOWN IN IS: 456/IS: 800 STANDARDS.
- 2.6 STRIPPING OF FORMWORK AND CURING SHALL BE CARRIED OUT AS PER PROVISION IN IS:456.

**LEGEND**


- U.O.S - UNLESS OTHERWISE SPECIFIED
- F.G.L - FINISHED GROUND LEVEL
- E.G.L - EXISTING GROUND LEVEL
- B.B.S - BAR BENDING SCHEDULE
- T & B - TOP & BOTTOM
- CHAIRS

**3. EXCAVATION & BACKFILLING**

- 3.1 THE SIDE SLOPES FOR EXCAVATION SHALL BE DIVIDED AS PER THE FOLLOWING GUIDELINES.
  - a) FOR SANDY SOILS, SLOPE IV: 2H
  - b) FOR CLAYEY SOILS, SLOPE IV: 1H
  - c) FOR HARD STRATA, VERTICAL CUT
 ALTERNATIVELY, SUFFICIENT SHEET PILES/SHORING SHALL BE USED DURING EXCAVATION TO PREVENT SIDE COLLAPSE.
- 3.2 SAND BEDDING/ STONE BEDDING SHALL BE PROVIDED IN FOUNDATIONS OF MARSHLY AND WET BLACK COTTON FOUNDATIONS.
- 3.3 IN CASE OF NO GROUND WATER, ALL FOUNDATION PITS SHALL BE SOAKED WITH WATER FOR 24 HOURS AND COMPACT WELL BEFORE.
- 3.4 LOOSE POCKETS OF SOIL FOUND, (IF ANY) IN FOUNDATION PITS SHALL BE COMPLETELY REMOVED AND FILLED WITH LEAN CONCRETE AND COMPACTED WELL BEFORE FOUNDATIONS ARE LAID.
- 3.5 FOUNDATION PIT SHALL BE KEPT DRY (FREE FROM WATER) DURING LAYING OF LEAN CONCRETE, PLACING STEEL AND CONCRETING WORK.
- 3.6 ALL BACK FILLING OF FOUNDATION SHOULD BE DONE WITH WELL COMPACTED SOIL (MOORUM PREFERABLY).
- 3.7 THE BACK FILLING OF FOUNDATION SHOULD BE CLEAN AND FREE FROM ORGANIC (OR) OTHER FOREIGN MATERIALS.
- 3.8 SOIL BACK FILL SHALL BE DONE IN LAYERS OF APPROX 150-200mm, EACH LAYERS SHALL BE DENSELY COMPACTED BY SPRINKLING MINIMUM QUANTITY OF WATER AS NECESSARY FOR PROPER COMPACTION AND MINIMUM BACKFILL SOIL DENSITY SHALL BE 1600kg/m<sup>3</sup>.
- 3.9 CARE SHALL BE TAKEN THAT THE BACK FILLING IS STARTED FROM THE CENTRE TOWARDS THE OUTER ENDS.
- 3.10 AFTER BACK FILLING 50mm HIGH EARTHEN EMBANKMENT(BUND) TO BE MADE ALONG THE SIDES OF EXCAVATED PITS AND SUFFICIENT WATER WILL BE POURED OVER THE BACK FILLED EARTH FOR ATLEAST 25HRS.
- 3.11 FINISHED GROUND LEVEL AT COLUMM/ CHIMNEY SHOULD BE SLOPED AWAY, WITH SLOPE OF 1:3 OF PREVENT ACCUMULATION OR PONDING OF WATER.
- 3.12 SURFACE DRAINAGE OF THE PLOT SHOULD BE MADE SO AS TO AVOID WATER LOGGING IN THE PLOT, IN PARTICULAR, AROUND THE FOUNDATION.
- 3.13 IN CASE TOP OF PEDESTAL IS FOUND TO BE LOWER THAN THE ROAD LEVEL/ HIGH FLOOD LEVEL, THEN BASE PLATE ENCASEMENT SHALL BE TAKEN UP IN CONSULTATION WITH THE SITE ENGINEER /INCHARGE/ CONSULTANT.
- 3.14 EXCAVATION PLAN & VOLUME SHOWN IN DRAWING IS INDICATIVE ONLY & THIS IS APPLICABLE FOR NORMAL SOIL CONDITIONS. IT MAY VARY, AS PER SITE CONDITION & STRATA ENCOUNTERED.

**4. TEMPLATE ASSEMBLY/ GROUTING**

- 4.1 VERIFY BOLT, NUT SIZE AND LENGTH AS PER TEMPLATE /BASE ASSEMBLY DRAWING.
- 4.2 CHECK THE INTEGRITY OF BOLT AND NUT BEFORE EXECUTION AT SITE, IF ANY PLAY FOUND CONSULT SITE ENGINEER/ CONSULTANT
- 4.3 GROUTING UNDER BASE PLATE HAS TO BE DONE WITH FREE FLOW NON SHRINK GROUT HAVING MINIMUM STRENGTH AS THAT OF COLUMN CONCRETE.

SUBMITTED FOR	APPROVAL	INFORMATION	REFERENCE	RECORD	CONSTRUCTION
ICON POWER SOLUTIONS PVT LTD 112 & 113 SECTOR 5, IMT MANESAR, GURGAON - 122 050, HARYANA					
DRAWN	S.M	PROJECT	TASHI INFOCOMM : 15M_MONOPOLE FOUNDATION		
CHECKED & VERIFIED	K.M	CUSTOMER NAME	TASHI INFOCOMM LIMITED		
APPROVED	K.M	SCALE	1:40		SHEET REV/ SIZE
DATE	03.03.2022		2021-DIS-MONOPOLE-GA-001	1 OF 1	RO /A1



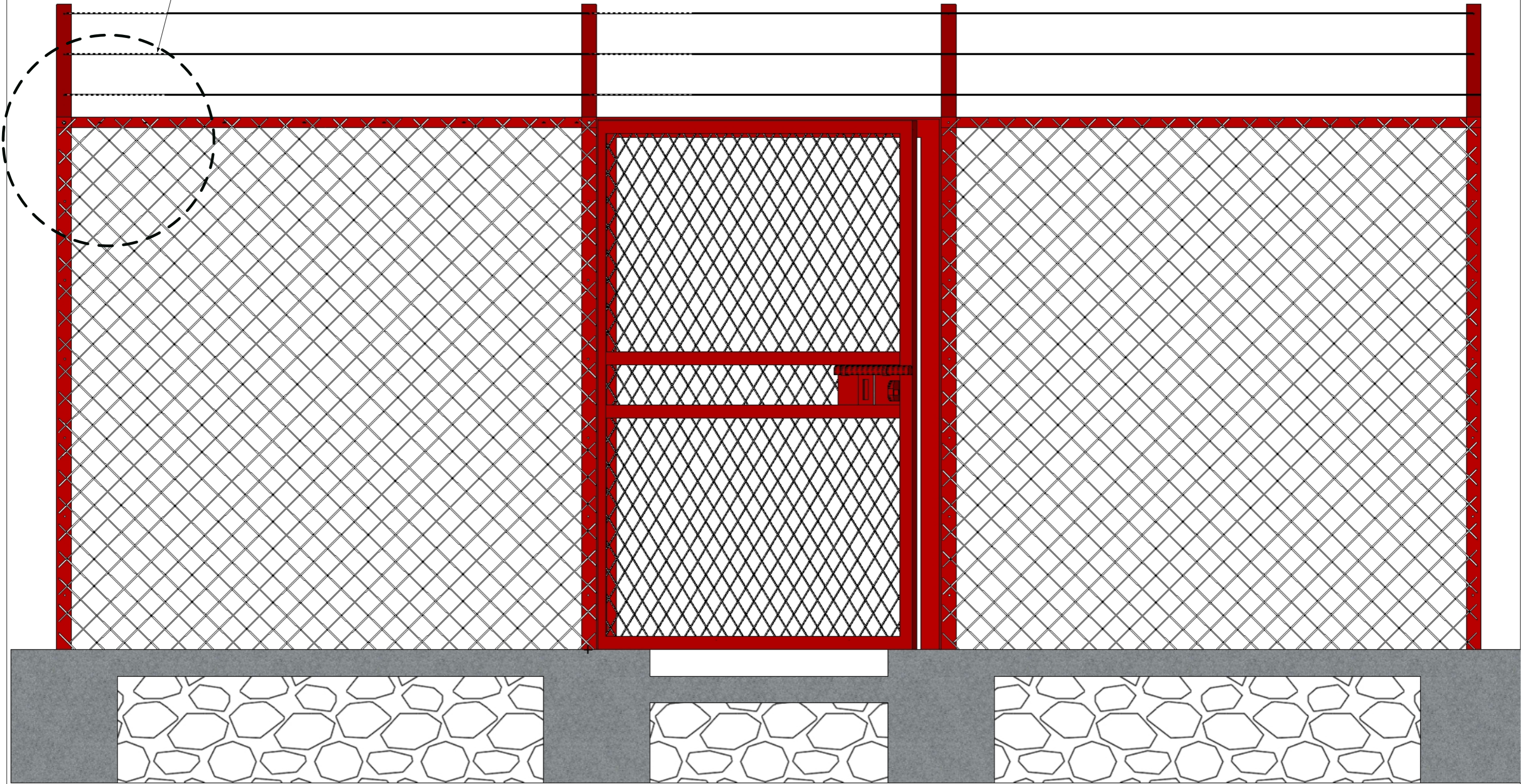
# **3 D ARCHITECTURAL DRWAING OF FENCING CUM GATE**

**KARMA WANGCHUK**

Tashi Infocom Private Limited  
Thim-Throm  
contact: 77376779

**FENCING CUM GATE**

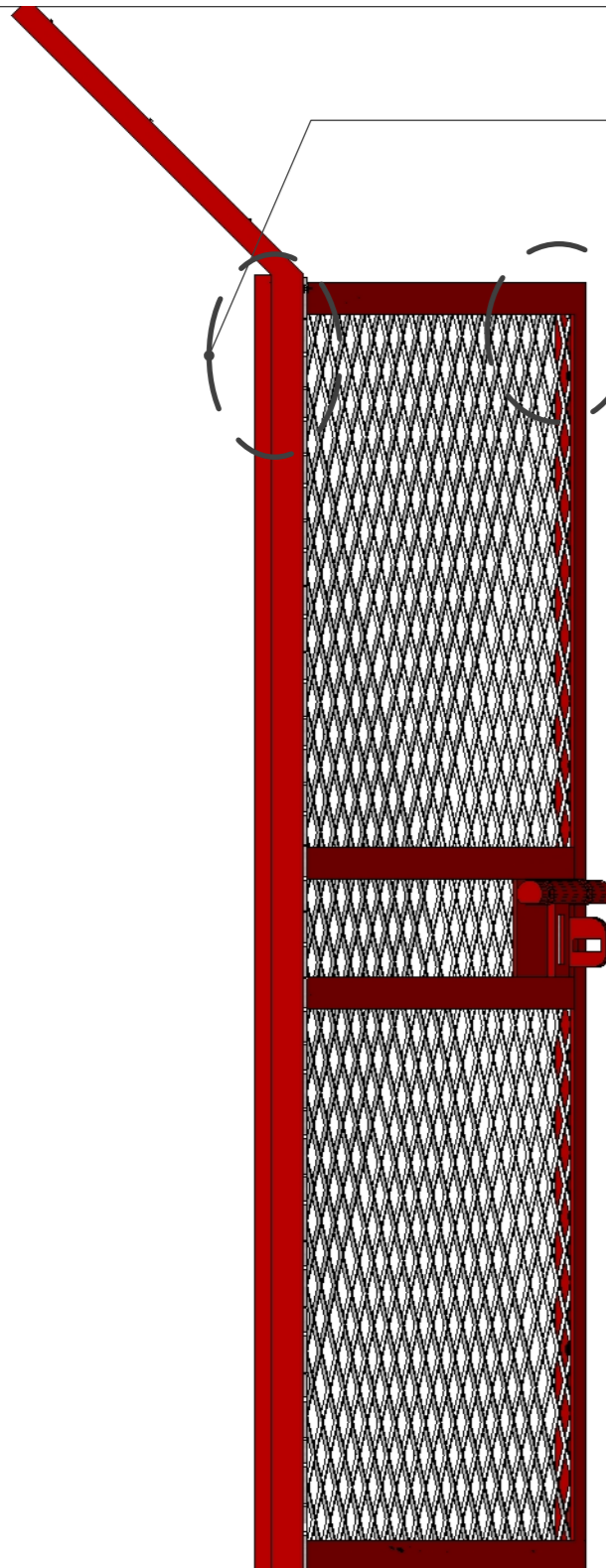
DETAILS GIVEN IN A



FRONT VIEW

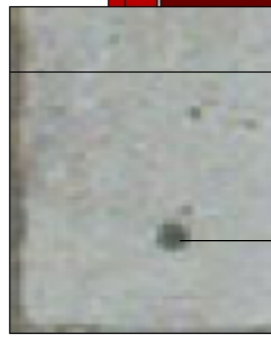
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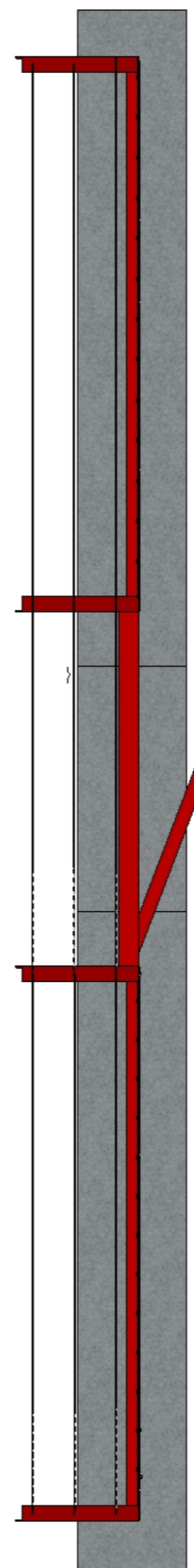


REFER HINGE DETAILS IN 2D

DETAILS GIVEN IN B



SIDE VIEW  
scale: 1"=1'

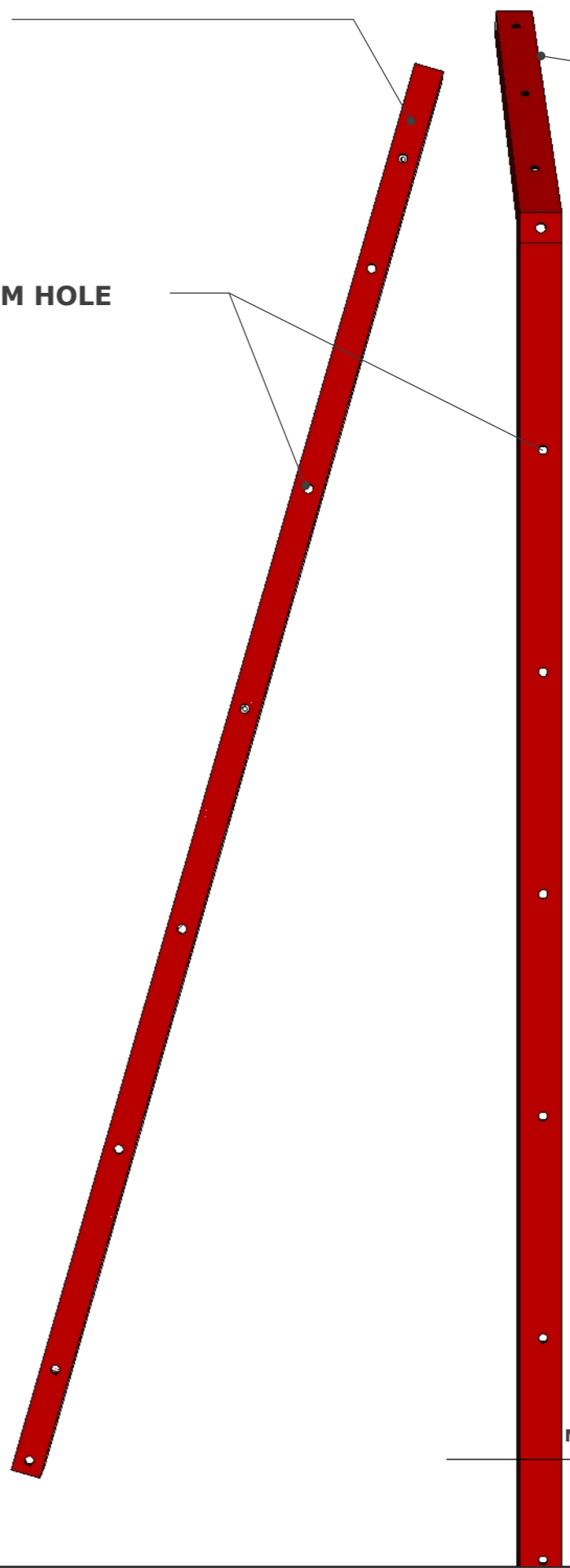


MS ANGLE HORIZONTAL  
40\*40\*5

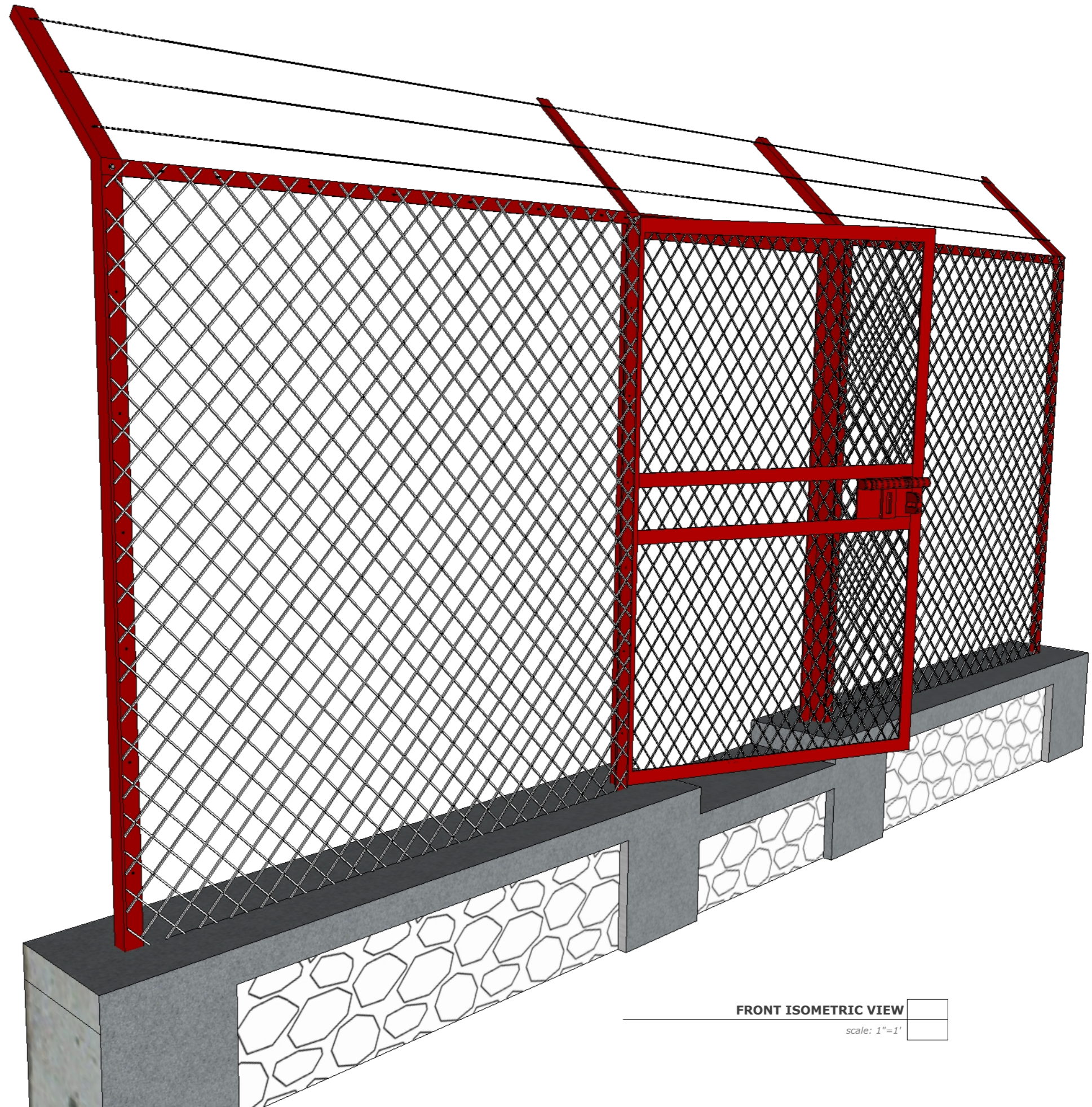
MS ANGLE POST 3.1 M  
50\*50\*6

6 MM HOLE

TOP VIEW  
scale: 1"=1'



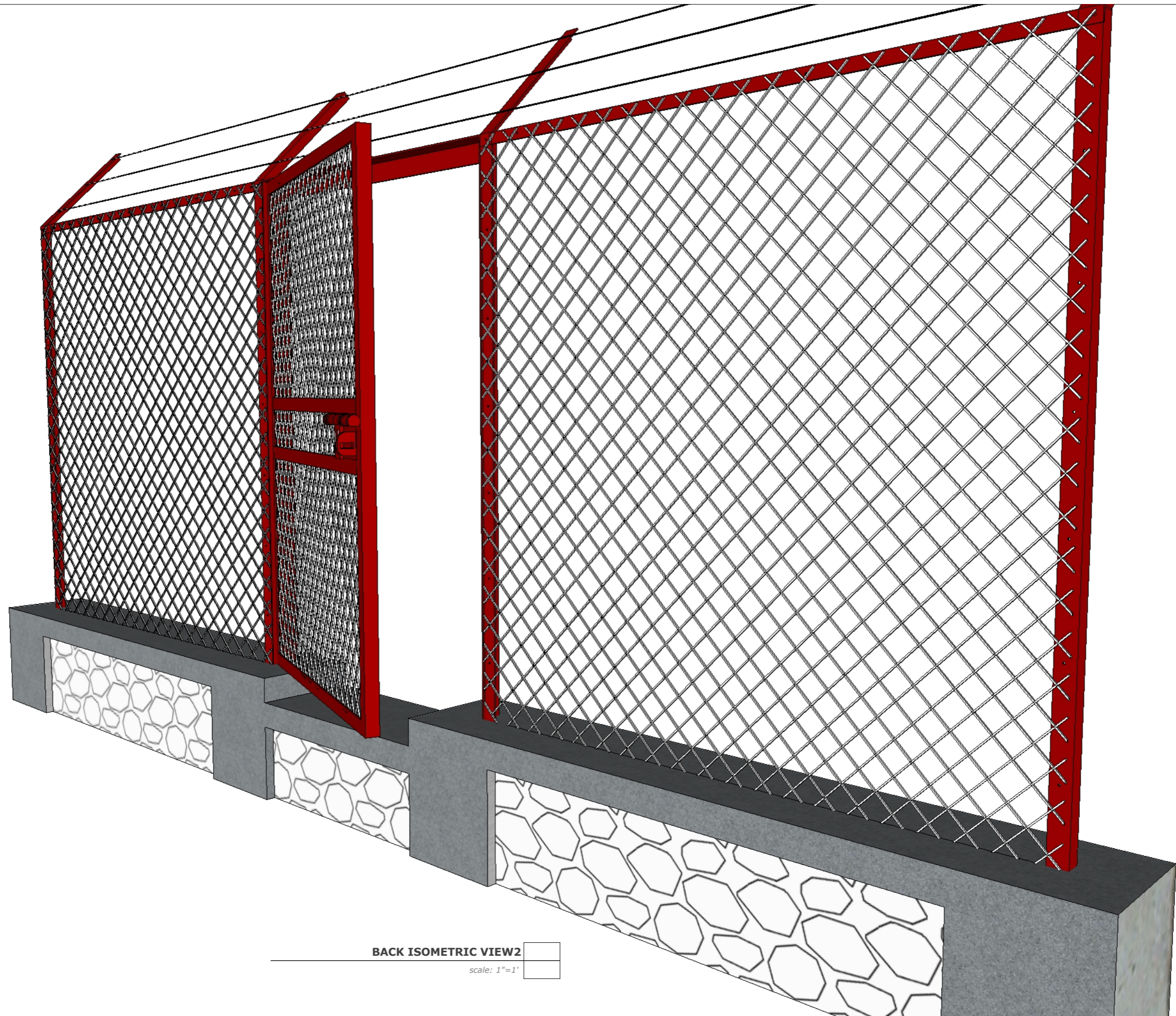
MS ANGLE DETAILS  
scale: 1"=1'



FRONT ISOMETRIC VIEW

scale: 1"=1'

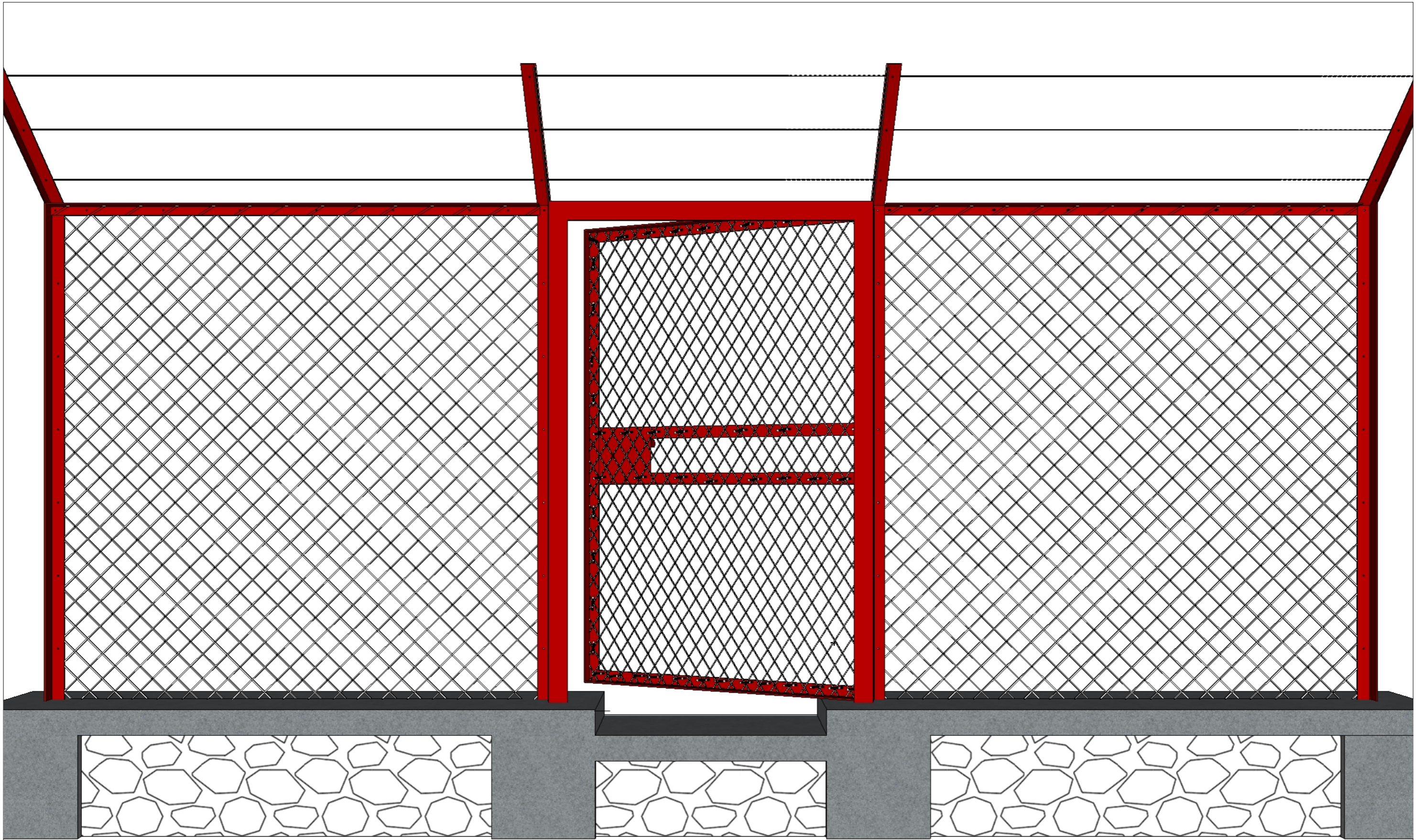
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BACK ISOMETRIC VIEW2

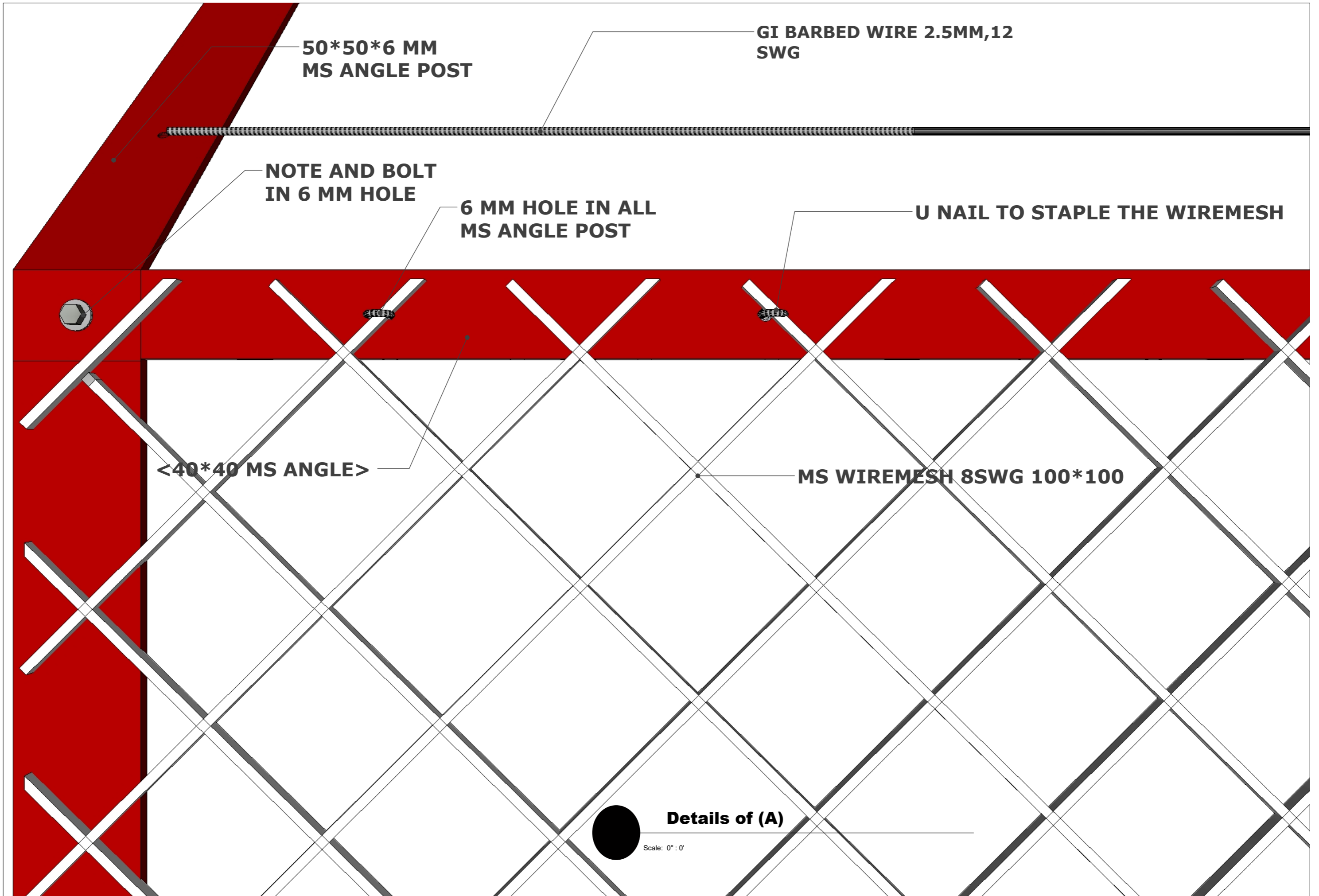
scale: 1"=1'





BACK VIEW

scale: 1"=1'



50\*50\*6 MM  
MS ANGLE POST

GI BARBED WIRE 2.5MM,12  
SWG

NOTE AND BOLT  
IN 6 MM HOLE

6 MM HOLE IN ALL  
MS ANGLE POST

U NAIL TO STAPLE THE WIREMESH

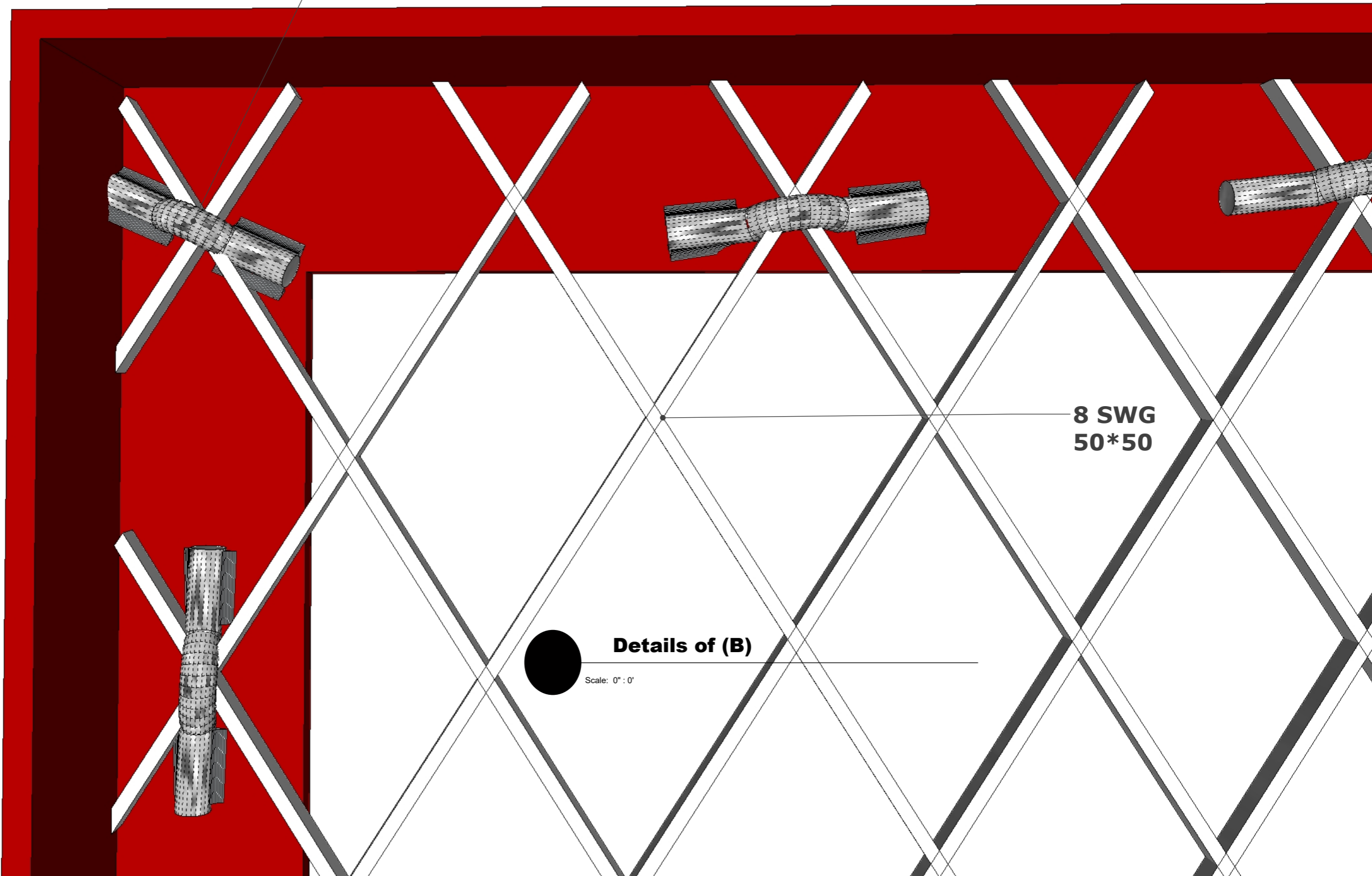
<40\*40 MS ANGLE>

MS WIREMESH 8SWG 100\*100

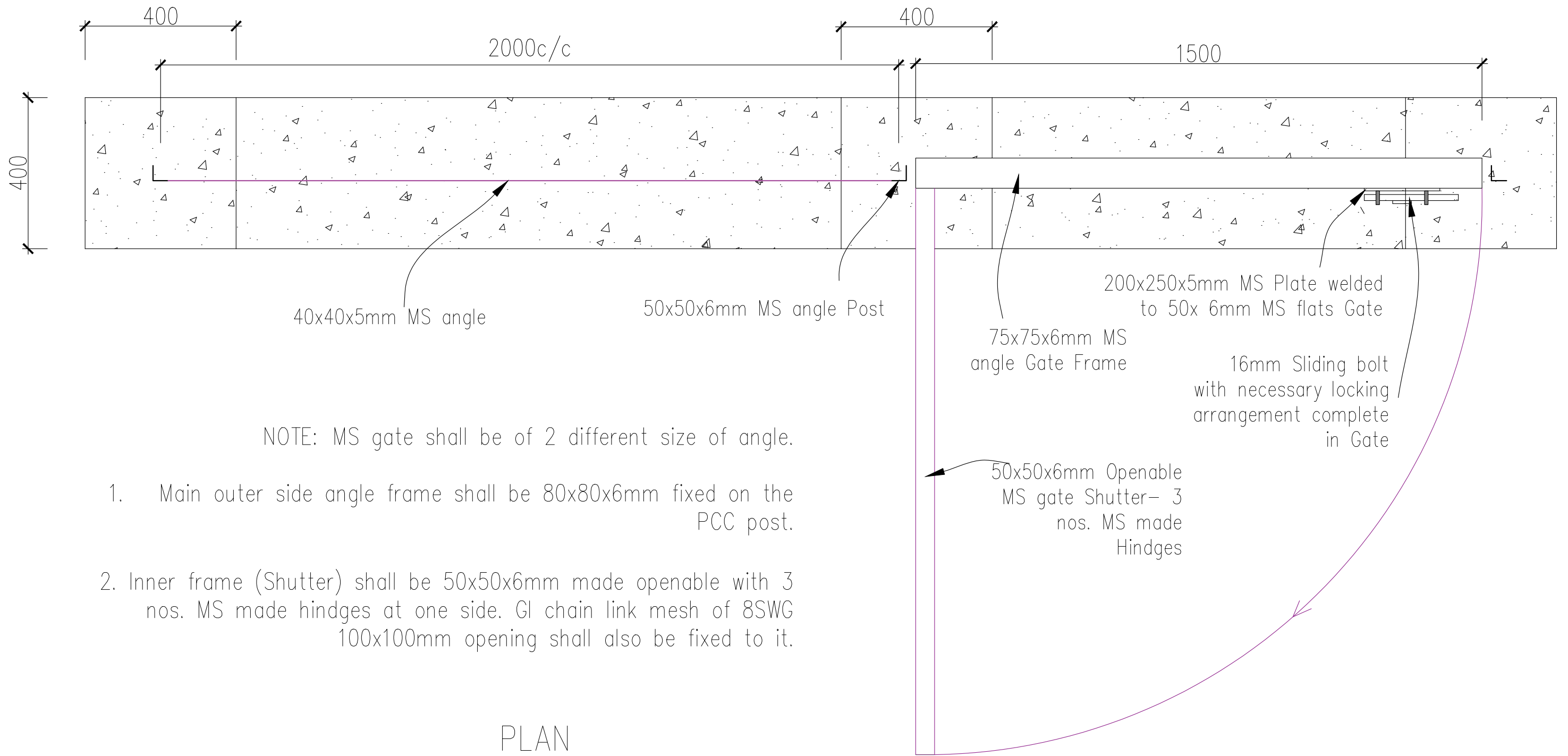
Details of (A)

Scale: 0" : 0"

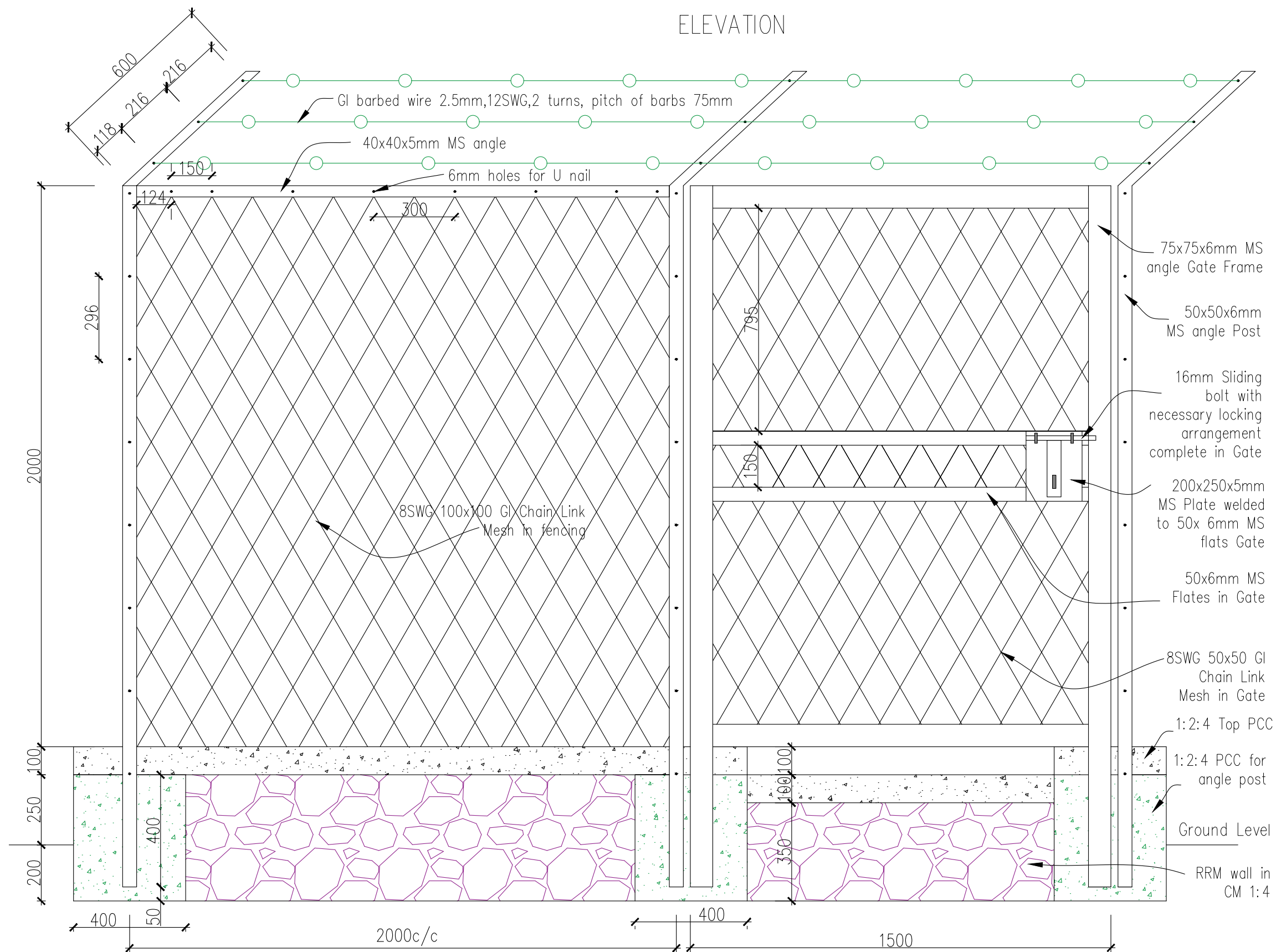
6/8 MM ROD WELDED ALTERNATELY WITH GI WIREMESH IN GATE



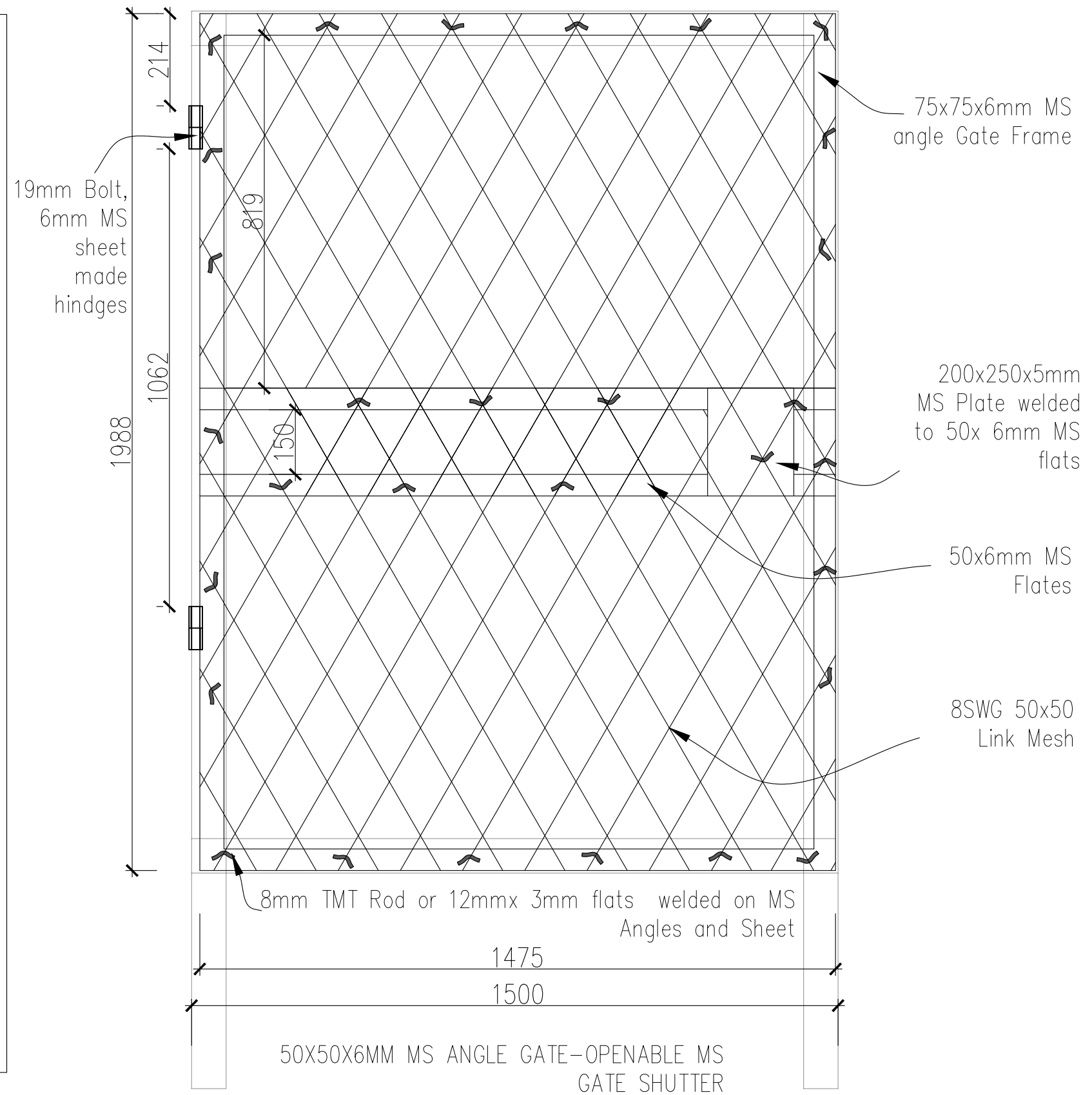
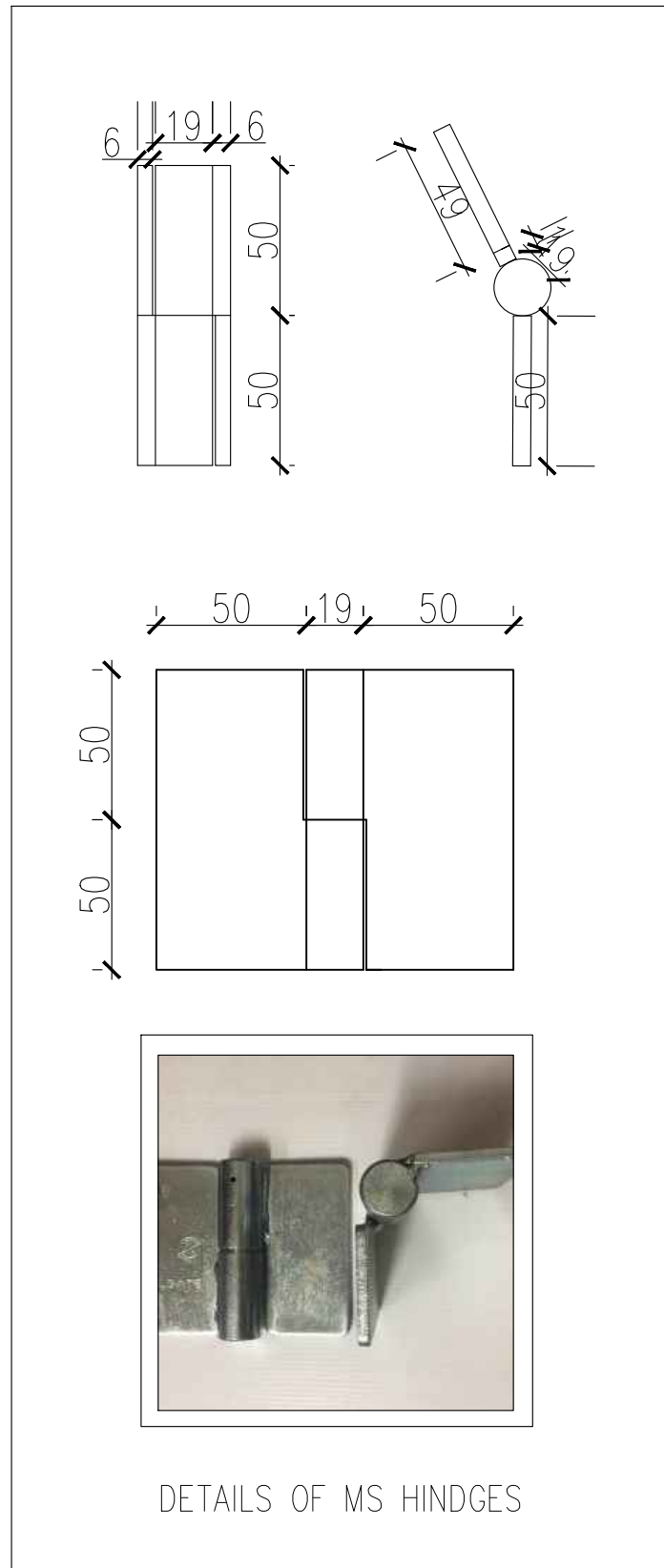




<b>TASHI INFOCOMM PRIVATE LTD</b>	DATE.	REVISION NOTES.	SIGN.	0- ALL DIMENSIONS ARE IN MM UNLESS SPECIFIED 0- WRITTEN DIMENSIONS TO BE READ AND NOT TO BE SCALED. 0- ALL DIMENSIONS MEASURE UNFINISHED SURFACE UNLESS OTHERWISE MENTIONED 0- ARR DRGS. TO BE READ IN CONJUNCTION WITH RELEVANT STRUCTURAL DRGS. 0- ANY DISCREPANCIES IN THE DRAWINGS IS TO BE BROUGHT TO THE IMMEDIATE NOTICE OF THE DESIGNER/SUPERVISION TEAM	<b>OWNER DETAILS</b>	Name: - Tashi-Infocomm Private Limited Plot No. - Tharm No.- Location -Thim-Throm (Opposite to Hotel Taj)	<b>TASHI-CELL</b>			<b>Site Development Work: GI chain link fencing and MS Gate-Plan</b>			DRAWING NO: AR-01 OF 03	
							<b>DRAWING TITLE</b> As Stated in the Drawing							
							ENGINEER: Karma Wangchuk Phone: 77376779/civil@tashicell.com		DRAWN BY: Karma Wangchuk (Technical Officer, Civil Section)	CHECKED BY:	DATE: 01/01/2024	SCALE: NTS	REVISION NO:	



<b>TASHI INFOCOMM PRIVATE LTD</b>	DATE.	REVISION NOTES.	SIGN.	0- ALL DIMENSIONS ARE IN MM UNLESS SPECIFIED 0- WRITTEN DIMENSIONS TO BE READ AND NOT TO BE SCALED. 0- ALL DIMENSIONS MEASURE UNFINISHED SURFACE UNLESS OTHERWISE MENTIONED 0- ARR DRGS. TO BE READ IN CONJUNCTION WITH RELEVANT STRUCTURAL DRGS. 0- ANY DISCREPANCIES IN THE DRAWINGS IS TO BE BROUGHT TO THE IMMEDIATE NOTICE OF THE DESIGNER/SUPERVISION TEAM	<b>OWNER DETAILS</b>		<b>TASHI-CELL</b>		<b>Site Development Work: GI chain link fencing and MS Gate-Elevation</b>				DRAWING NO: AR-02 OF 03				
					Name: - Tashi-Infocomm Private Limited				<b>DRAWING TITLE</b> As Stated in the Drawing								
					Plot No. -		ENGINEER: Karma Wangchuk Phone: 77376779/civil@tashicell.com		DRAWN BY: Karma Wangchuk (Technical Officer, Civil Section)		CHECKED BY:		DATE: 01/01/2024		SCALE: NTS		
					Tharm No.-		Location -Thim-Throm (Opposite to Hotel Taj)								REVISION NO:		



<b>TASHI INFOCOMM PRIVATE LTD</b>	DATE.	REVISION NOTES.	SIGN.	<p>0- ALL DIMENSIONS ARE IN MM UNLESS SPECIFIED</p> <p>0- WRITTEN DIMENSIONS TO BE READ AND NOT TO BE SCALED.</p> <p>0- ALL DIMENSIONS MEASURE UNFINISHED SURFACE UNLESS OTHERWISE MENTIONED</p> <p>0- ARR DRGS. TO BE READ IN CONJUNCTION WITH RELEVANT STRUCTURAL DRGS.</p> <p>0- ANY DISCREPANCIES IN THE DRAWINGS IS TO BE BROUGHT TO THE IMMEDIATE NOTICE OF THE DESIGNER/SUPERVISION TEAM</p>	<b>OWNER DETAILS</b>		<b>TASHI-CELL</b>		<b>GATE DETAILS</b>				<b>DRAWING NO:</b>	
					Name: - Tashi-Infocomm Private Limited				<b>DRAWING TITLE</b>				AR-03 OF 03	
					Plot No. -		<p><b>ENGINEER:</b> Karma Wangchuk Phone: 77376779/civil@tashicell.com</p>		As Stated in the Drawing				<b>REVISION NO:</b>	
					Tharm No. -				DRAWN BY:	CHECKED BY:	DATE:	SCALE:		
				Location -Thim-Throm (Opposite to Hotel Taj)		Karma Wangchuk (Technical Officer, Civil Section)		01/01/2024	NTS					



