TENDER DOCUMENT

TENDER No: NERO/CON/ASR/LUNGEI/349 dated 29.03.2019

FOR

TENDER FOR CONSTRUCTION OF 02 NOS. SINGLE MEN BARRACKS IN 02 BLOCKS OF (G+I) ALONG WITH DEVELOPMENT WORKS FOR ASSAM RIFLES BN HQ AT LUNGEI (MIZORAM)

VOLUME–II

NOTICE INVITING TENDER

ADDITIONAL CONDITIONS OF CONTRACT

TECHNICAL SPECIFICATIONS

DRAWINGS
ENGINEERING PROJECTS (INDIA) LTD.  
(A Govt. of India Enterprise)  

Tender No. NERO/CON/ASR/LUNGLEI/349  
Dated: 29.03.2019  

NOTICE INVITING e-TENDER  

Tender For Construction of 02 Nos. Single Men Barracks in 02 Blocks of (G+I) along with Development works for Assam Rifles BN HQ at Lunglei (Mizoram)  

Engineering Projects (India) Ltd., on behalf of Ministry of Home Affairs invites percentage rate open e-Tenders through e-tendering from the eligible contractors/firms who fulfill the eligibility criteria as per the brief particulars of scope for Construction of 02 Nos. Single Men Barracks in 02 Blocks of (G+I) along with Development works for Assam Rifles BN HQ at Lunglei (Mizoram), in single stage Two Envelope system (Technical bid & Price bid) for the following works:  

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>NAME OF WORK</th>
<th>ESTIMATED COST (Rs.)</th>
<th>TIME OF COMPLETION</th>
<th>EMD DEPOSIT (Rs.)</th>
<th>TENDER FEES (Rs.)</th>
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<td>1.</td>
<td>Tender For Construction of 02 Nos. Single Men Barracks in 02 Blocks of (G+I) along with Development works for Assam Rifles BN HQ at Lunglei (Mizoram)</td>
<td>Rs. 4,73,68,882.00 (Four Crore Seventy Three Lakhs Sixty Eight Thousand Eight Hundred Eighty Two only)</td>
<td>18 (Eighteen) Months</td>
<td>4,73,689.00 (Rupees Four Lakh Seventy Three Thousand Six Hundred Eighty Nine only)</td>
<td>11,800.00 (Rupees Eleven Thousand Eight Hundred only) (GST @ 18% included)</td>
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</table>

The brief scope of work included in this tender shall include providing all labour, materials, tools and plant, transportation to site, storage and safe custody of the materials, earthwork in excavation, earthwork in filling, PCC, RCC, drains etc. as required in Construction of 02 Nos. Single Men Barracks in 02 Blocks of (G+I) along with Development works for Assam Rifles BN HQ at Lunglei (Mizoram) on percentage rate tender basis as per bill of quantities and tender conditions. Apart from above, any other service but required as per direction of EPI/MHA for completion of works are deemed to be included in the scope of work.

The detailed scope of work is given in tender document.

Time schedule of Tender activities:

(i) Start of Date & Time of availability of documents: From 08:00 PM 29.03.2019  
(ii) Last Date & Time for Downloading of tender documents: 19.04.2019 up to 11:00 am.  
(iii) Last Date & Time of online submission of Tenders: on or before 19.04.2019 up to 12:00 Noon.
(iv) Date & Time of online opening of tenders (Techno-Commercial Bid): 19.04.2019 at 02:30 pm.
(v) Pre-bid meeting at 4th Floor, Hindustan Tower Block-A, Jawahar Nagar, N.H.37, Guwahati-781022 Assam on 08.04.2019 at 4.00 PM.
(vi) Last Date & Time of submission of documents in physical form: 19.04.2018 (upto 12:00 noon)

The tenderers shall submit his query for the pre-bid meeting on or before 08.04.2019 by 12.00 hours to nerocontracts@gmail.com and neroguwahati@gmail.com or by post to the address given at sl. No. 14 below.

1.0 Contractors who fulfill the following basic qualifying requirements are eligible to participate in this tender. The joint ventures/Consortium is not accepted.

a) The bidder must have experience of having satisfactorily completed following “similar works” during the last 7(seven) years ending last day of month previous to the one in which applications are invited.

a) Three similar works each of costing minimum not less than 40% of the estimated cost put to the tender.

OR

Two similar works each of costing minimum not less than 60% of the estimated cost put to the tender.

OR

One similar work costing minimum not less than 80% of the estimated cost put to the tender.

i) The “similar works” shall mean Construction of Border Fencing and allied civil works etc.

ii) The cost of free issue materials shall not be included in the completion cost of works.

iii) For evaluation purpose, the completion cost of works mentioned in the completion certificate shall be enhanced by 7% per annum till the end of month prior to date of NIT.

b) Should have had average annual financial turnover amounting at least 50% of the estimated cost of the work during the last three consecutive financial years ending on 31.03.2017 duly certified by Chartered Accountant duly supported with audited copies of financial statements.

c) Should not have incurred any loss in more than two years during the immediate last five consecutive financial years, ending 31.03.2018, Copies of balance sheet/ Certificate from Chartered Accountant duly self attested by the tenderer shall be submitted.
d) Should have a Solvency of 40% of the estimated cost issued by his bankers in the name of the bidder. The Solvency Certificate should not have been issued earlier than one year of last date of submission of the tender.

e) Should have valid Permanent Account Number of Income Tax and GST registration certificate.

f) Should have valid PF Registration number. In case the bidder does not have this registration number, he shall remain bound to obtain them within one month from the date of LOI or before release of 1st R/A bill whichever is earlier.

g) Bid Capacity: The bidding capacity of the tenderer should be equal to or more than the estimated cost of the work put to Tender.

   The Bidding capacity shall be worked out by the following formula:

   \[ \text{Bidding Capacity} = [A \times N \times 2] - B \]

   Where,

   \( A \) = Maximum value of construction works executed in any one year during the last five years taking into account the Completed as well as works in progress ending last day of the month previous to the one in which applications invited.

   \( N \) = Number of years prescribed for completion of work for which bids have been invited

   \( B \) = Value of existing commitments and ongoing works to be completed during the period of completion of work for which bids have been invited. The Tenderer is requested to furnish the existing commitments of works under execution along with stipulated period for completion of remaining for each of the work should be furnished in an affidavit on non-judicial stamp paper of value of Rs. 100/- duly certified that the particulars furnished are correct as per the Performa in Annexure-A

h) Site visit for the subject tender is mandatory. The bidders shall visit the site to Study/assess the tendered work and also acquaint themselves of the prevailing local conditions & detail requirement of the project work before submitting their bid. Bidder has to enclose a certificate counter signed by EPI official or furnish undertaking for having visited the site.

i) Bidders who intend to get exemption from submission of Tender fee and EMD shall submit confirmation letter whether they are registered under MSME Act or not and if yes, then relevant copies of the registration letter (Registered under single point registration scheme of NSIC, Govt. of India, Ministry of MSME, New Delhi) vide Gazette Notification dated 26.03.2012 along with the form of Memorandum-2 (with the concerned DIC) certificate in the appropriate category and limit as applicable under the present tender to be enclosed in Technical Bid and a request letter for exemption from submission of Tender fee and EMD.

j) Even though an applicant may satisfy the eligibility criteria, EPI reserves the right for not issuing the tender document if he has record of poor performance such as abandoning work, not properly completing the work, delay in execution of work, poor quality of work, financial failure / weakness etc.
k) The experience certificates issued by Government Organizations / Semi Government Organizations/ State Government / Public Works Department / Central Government /Public Sector Undertakings/ Autonomous Bodies/Municipal Bodies/Public Limited Companies listed on BSE/NSE shall only be accepted for assessing the eligibility of the tenderer. However, the certificates issued by Public Limited Company and Private Party can be considered only if they are supported by TDS certificates/Turnover Certificate from Chartered Accountant in support of value of work done by the tenderer.

l) Completion certificates from the client shall be in the name of the company who is submitting the tender. The contractor has to produce original documents for their verification as and when demanded by EPI. The tender of any tenderer shall be rejected if on detailed scrutiny; documents submitted along with the tender are found to be unsatisfactory / forged. The decision of EPI in this regard shall be final and the binding on the tenderer.

m) Relevant experience certificates and other documents as mentioned above fulfilling the qualifying criteria duly self-attested by the tenderer shall be enclosed in Envelope-1. Completion Certificates from clients shall be in the name of the Company who is submitting the tender. The bidder has to produce original documents for verification at the time of opening of tender or as and when demanded. The Tender of any tenderer shall be rejected if on detailed scrutiny, documents submitted along with the tender are found to be unsatisfactory. The decision of EPI in this regard shall be final and binding on the tenderer.

n) The tenderers may note that they are liable to be disqualified and not considered for the opening of Price Bid if;

a) Representation in the forms, statements and attachments submitted in the pre-qualification document are proved to be incorrect, false and misleading.

b) They have record of poor performance during the past 10 (ten) years such as abandoning the work, rescinding of contract for which the reasons are attributable to the non-performance of the contractor, inordinate delay in completion, consistent history of litigation / arbitration awarded against the contractor or any of its constituents or financial failures due to bankruptcy etc. in their ongoing / past projects.

c) They have submitted incompletely filled in formats without attaching certified supporting documents and credentials to establish their eligibility to participate in the Tender.

d) If the tenderers attempt to influence any member of the selection committee.

EPI reserves its right to take appropriate action including disqualification of tenderer(s) as may be deemed fit and proper by EPI at any time without giving any notice to the contractor in this regard. The decision of EPI in the matter of disqualification shall be final and binding on the Tenderers.
The credentials of the Bidders shall be verified and inspection of the works, if required, to be carried out by EPI. If not found satisfactory, their bid will be considered non-responsive.

2.0 Tender documents comprising of the following are available on the website of EPI: [www.engineeringprojects.com](http://www.engineeringprojects.com), CPP-Portal: [www.eprocure.gov.in](http://www.eprocure.gov.in) and as well as on TCIL portal [http://www.tcil-india-electrontictender.com](http://www.tcil-india-electrontictender.com).

Volume I: Instructions to Tenderers, Addendum to Instructions to Tenderers, Special Instructions to Bidders for e-Tendering & General Conditions of Contract (ITT&GCC) of EPI

Volume II: a) Notice inviting Tender
   b) Additional Conditions of Contract
   c) Technical Specifications
   d) Tender Drawings (as mentioned in the list)

Volume III: Price bid/bill of quantity

3.0 In order to participate, the bidder should have Digital Signature Certificate (DSC) from one of the authorized Certifying Authorities.

4.0 Interested bidders have to necessarily register themselves on the portal [https://www.tcil-india-electrontictender.com](https://www.tcil-india-electrontictender.com) through M/s Telecommunications Consultants India Limited, New Delhi to participate in the bidding under this invitation for bids. It shall be the sole responsibility of the interested bidders to get them registered at the aforesaid portal for which they are required to contact M/s Telecommunications Consultants India Limited, New Delhi at following address to complete the registration formalities:

   M/s Telecommunications Consultants India Limited,
   6th Floor, TCIL Bhawan, Greater Kailash – I, New Delhi 110 048
   Contact No.: 011-26241790, 98683 93717/75/92
   Email-ID: ets_support@tcil-india.com

They may obtain further information regarding this tender from DGM (Contracts) at the address given at Clause No.14.0 below from 10:00 hours to 17:00 hours on all working days till the last date of online submission of Bidding Documents.

For proper uploading of the bids on the portal namely [https://www.tcil-india-electrontictender.com](https://www.tcil-india-electrontictender.com) (hereinafter referred to as the “portal”), it shall be the sole responsibility of the bidders to apprise themselves adequately regarding all the relevant procedures and provisions as detailed at the portal as well as by contacting M/s Telecommunications Consultants India Limited, New Delhi directly, as and when required, for which contact details are mentioned above. The EPI in no case shall be responsible for any issues related to timely or properly uploading/submission of the bid in accordance with the relevant provisions of Section: Instruction to Bidders of the Bidding Documents.

5.0 Bidders can download the bid document from the portal without paying document fees in advance, any time from 20:00 Hrs on 29.04.2019; however, interested bidders have to pay tender fees for participating in the tendering and submitting the bid. For this purpose the interested bidders shall be required to pay ₹ 11,800.00 (Rupees...
Eleven Thousand Eight Hundred only, GST @ 18% included), the GSTIN of EPI for Assam is 18AAACE0061C1ZC as non-refundable document fees in the form of Demand Draft in favour of “Engineering Projects (India) Ltd.” payable at Guwahati.

The fees to be paid to TCIL are separate.

6.0 E-Bids must be submitted/uploaded along with scanned copies of relevant documents as mentioned at clause no 2 of “Addendum to Instructions to Tenderers” under Single Stage Two Envelope Bidding Procedure on the TCIL portal on or before last date & time of online bid submission. Late bids will not be accepted. Under the above procedure, only first envelope (Technical Part) shall be opened in the presence of the bidders’ representatives who choose to attend in person at the address given below on scheduled date & time of bid opening or may be viewed by the bidders by logging in to the portal as per features available to them. Second envelope i.e. Price part shall be opened of technically qualified bidders.

The bid must be accompanied by Earnest Money Deposit (EMD) of Rs. 4,73,689.00 (Rupees Four Lakh Seventy Three Thousand Six Hundred Eighty Nine only). This shall be in the form of Crossed Demand Draft or Pay Order (in CTS form) of any Nationalized Bank/Scheduled Bank for the full amount of EMD payable favouring “Engineering Projects (India) Ltd.”, payable at Guwahati. The EMD shall be valid for minimum period of 150 days (one hundred fifty days) from the last day of submission of tender. Tenders submitted without EMD or inadequate amount of EMD shall be rejected. The bid shall be valid for 90 days from date of opening of Price Bid.

Tender fee, EMD (In original), Power of Attorney, NSIC/MSME(Registered under single point registration scheme of NSIC, Govt. of India, Ministry of MSME, New Delhi vide Gazette Notification dated 26.03.2012 along with the form of Memorandum-2 with the concerned DIC) certificate as per Clause No.1 (j) if bidder is claiming EMD/Tender fee exemption and Pass Phrase (Both for technical and financial bid in separate envelope) to decrypt the bid must be submitted in physical form at the address given at Clause No. 14.0 below as stipulated at sl. no iv of iv under Time Schedule of Tender Activities. If the above documents are not received in time then their offer shall not be considered and EPI shall not be responsible for any postal delay in respect of submission of hard copy part of the bids.

7.0 The Terms & Conditions contained in the NIT and tender document shall be applicable.

8.0 The tenderers should note that the credentials such as value and volume of works completed, as submitted by the tenderers along with their offers shall be forwarded by EPI to Client for his opinion. The offer of tenderers against whom client does not give satisfactory remarks shall be rejected by EPI.

9.0 The corrigendum or addendum, extension, cancellation of this NIT, if any, shall be hosted on the EPI’s website/CPP portal as well as on TCIL portal http://www.tcil-india-electrontictender.com the bidders are required to check these websites regularly for this purpose, to take into account before uploading/submission of tender. All Corrigendum and addendum are to be uploaded duly signed & stamped with tender documents as bid Annexure.

10.0 The tenderers should note that the credential such as value and volume of works completed as submitted by the tenderers along with their offers may be forwarded by
EPI to the owner, DGAR for his opinion. The offer of the tenderers against whom the Owner does not give satisfactory remarks shall be rejected by EPI.

11.0 The price bid of those bidders who are found to be prima-facie techno-commercially acceptable based on the documents submitted at the time of bid submission and subject to confirmation of authenticity of the PQ documents/ EMD / Tender fee from the concerned department/ bank with prior intimation to them. **Hence the intending bidders must furnish their e-mail id and contact phone number along with the techno-commercial part.** In case the PQ documents such as work experience certificate, bank solvency certificate etc submitted by a bidder is found to be fake the EMD submitted by him shall be forfeited by EPI without making any reference to him. Further such a tenderer shall be at a risk of losing his right to participate in any tender called by EPI for a minimum period of one year.

12.0 EPI reserves the right to accept any tender or reject any or all tenders or split the work of tender or annul this tendering process without assigning any reason and liability whatsoever and to re-invite tender at its sole discretion.

13.0 In case of tie-tender, where two firms are bidding lowest, EPI reserves the right to split the work among these bidders and / or EPI will reserve the right to award the tender to any one of such bidder.

14.0 Tender documents shall be issued by and submitted to:
   Dy. General Manager
   Engineering Projects (India) Ltd.
   North Eastern Regional Office
   4th Floor, Hindustan Tower,
   Jawahar Nagar, National Highway No.37,
   Guwahati (Assam) -781022 (Tel No. 8486653300)

15.0 Contact details for site related quarries:
   Shri U. Patowary, DGM, EPI
   Mobile No. - 9436779102
   For more information on EPI, visit our website at: [http://www.engineeringprojects.com](http://www.engineeringprojects.com)
   For more information on the e-tender, visit website of M/s Telecommunications Consultants India Limited, New Delhi at: [https://www.tcil-india-electronictender.com](https://www.tcil-india-electronictender.com)

Dy. General Manager (Contracts)
**BID CAPACITY**

**Name of the Work:** Construction of 02 Nos. Single Men Barracks in 02 Blocks of (G+I) along with Development works for Assam Rifles BN HQ at Lunglei (Mizoram)

**NIT No:** NERO/MMD/457/349 **Date:** 29.03.2019

**ESTIMATED COST PUT TO TENDER:** Rs. 4,73,68,882.00

Bid Capacity: The bidding capacity of the contractor should be equal to or more than the estimated cost of the work put to Tender. The bidding capacity shall be worked out by the following formula:

\[
\text{Bidding Capacity} = [ A \times N \times 2] - B
\]

Where,

- \( A \) = Maximum value of construction works executed in any one year during the last five years taking into account the completed as well as works in progress
- \( N \) = Number of years prescribed for completion of work for which bids have been invited
- \( B \) = Value of existing commitments and ongoing works to be completed during the period of completion of work for which bids have been invited (Format enclosed)

**BID CAPACITY CALCULATION BY BIDDER**

**SIGN & STAMP OF BIDDER**
ANNEXURE-A

AFFIDAVIT
(To be typed on Rs. 100/- non-judicial stamp paper)

I/We ....................................... aged .............. years son of ....................................... do hereby solemnly affirm and declare as follows for and on behalf of the Firm:

LIST OF EXISTING COMMITMENT AND ONGOING WORKS

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of Works</th>
<th>Client Name &amp; Address</th>
<th>Work Order Value (in Rs)</th>
<th>Work Executed till Date (Rs)</th>
<th>Balance Amount of work to be completed (Rs)</th>
<th>Balance period to complete the works (Total months)</th>
<th>Work to be completed in 15 months (Rs)</th>
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Balance Commitments during 15 months as per NIT Rs.

It is certified that the above particulars furnished are true and correct. If any information given is found to be concealed at a later date, the Contract will be terminated forthwith without prejudice to the rights thereon consequent on termination and the bidder will be blacklisted. I/We agree for debarring tendering for one year if any facts are suppressed.

SIGN AND STAMP OF BIDDER
ADDITIONAL CONDITIONS OF CONTRACT (ACC)

1.0 The following Additional Conditions of Contract shall be read in conjunction with General Conditions of Contract (GCC) of EPI and other conditions of the tender documents. If there are any provisions in these Additional Conditions of Contract, which are at variance with the provisions of GCC and other conditions of the tender documents, the provisions in these Additional Conditions of Contract shall take precedence.

2.0 DGAR (Director General Assam Rifles), the Owner, has selected Engineering Projects (India) Limited (EPI) as the “PMC” for “Construction of 02 Nos. Single Men Barracks in 02 Blocks of (G+I) along with Development works for Assam Rifles BN HQ at Lunglei (Mizoram)”. The works intended to be executed under the instant contract shall include (but not limited to) providing labour, tools and plants, machineries, transport and all other components including materials (except those which are specifically excluded from scope/present tender as spelt out elsewhere in the tender documents) required for completion of the works. The works are to be executed at Assam Rifles Battalion at Agartala, Tripura

3.0 Clause no 3.0 of GCC shall stand amended as below:
The items of work given in the tender documents are for general guidance of the contractors and the works shall be carried out by the contractor on Percentage rate basis in conformity with the detailed drawing, scope of work, technical specifications, additional conditions of contract (including any addition/modification/ alteration/deletion made from time to time therein found essential for completion of works). The contractor shall be deemed to have satisfied himself before tendering as to the sufficiency and correctness of his tender for the works and of the rates and prices quoted in the brief specifications, drawings, scope of work and payment (billing) schedule, which rates and prices shall, except as otherwise provided, cover all obligations under the contract and all matters and things found necessary for proper completion and maintenance of the works. It shall be responsibility of the contractor to incorporate the changes that may be in the scope of work envisaged at the time of tendering and as actually required to be executed. The contractor has quoted his rates after clearly studying the scope of work given in Tender Documents availed by him by downloading from the website at the tendering stage itself and getting fully satisfied with the various items and technical intricacies involved in the work under his scope of work as envisaged in the tender. EPI shall not entertain any claim of the contractor on account of error or omission by him in this respect except what is admitted by the client.

4.0 No mobilisation advance shall be paid and hence clause no. 8 of GCC shall stand deleted.
5.0 **Safety Code:**

**General**
Contractor shall adhere to safe construction practice and guard against hazardous and unsafe working conditions and shall comply with safety rules as stated forth herein for information and guidance:

First Aid and Industrial Injuries

1. Contractor shall maintain first aid facilities for his employee and labours.
2. Contractor shall make out side agreements for ambulance service and for the treatment of industrial injuries. Names of those providing these services shall be furnished to the EIC prior to start of construction and their telephone numbers shall be prominently posted in Contractor's field office.
3. All critical industrial injuries shall be reported promptly to the EIC, and a copy of Contractor's report covering each personal injury requiring the attention of a physician shall be furnished to the EIC.

**General Rules**
Smoking within the battery area, tank farm or dock limits is strictly prohibited.
Violators of the no smoking rules shall be discharged immediately

**Contractors Barricades**

1. Contractor shall erect and maintain barricades required in connection with his Operation to guard or protect.
   - (a) Excavations.
   - (b) Hoisting areas.
   - (c) Areas adjudged hazardous Contractor’s or Owner’s inspectors.
   - (d) Owner’s existing property subject to damage by Contractor's operations.
   - (e) Rail road unloading spots.
2. Contractors employee and these of his sub-contractors shall become acquainted with owner's barricading practices and shall respect the provisions thereof.
3. Barricades and hazardous areas adjacent to but not located in normal routes of travel shall be marked by red flasher lanterns at nights.
Scaffolding:

(i) Suitable scaffolding should be provided for workmen for all works that safety be done from the ground or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable footholds and handholds shall be provided on the ladder shall be given an inclination not steeper more than 1 in 4 (1horizontal and 4 vertical)

(ii) Scaffolding or staging than 4 meters above the ground or floor, swing suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise rewarded at least 3 ft. High above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as maybe necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

(iii) Every opening the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 1 meter.

(iv) Working platform, gangways and stairways should be so constructed that they should not sag unduly or unequally and if the height of the platform of the gangway or the stairway is more than 4 metres above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in above.

(v) Safe-means of access shall be provided to all working platforms and other working places, every ladder should be securely fixed. No portable single ladder shall be over 9 meters in length while the width between side rails in rung ladder shall in no case be less than 30cms for ladder up to and including 3metres in length. For longer ladder this width should be increased at least 5 mm for each additional foot of length. Uniform steps spacing shall not exceed 30 cms. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the site of work shall be so stacked or placed to caused anger or inconvenience to any person or public. The Contractor shall also provide all necessary fencing and light to protect the workers and staff from accidents, and shall
be bound to bear the expenses of defense of every suit, action or other proceedings of law that may be brought by any person for injury sustained owing to neglect of the above precautions and pay any damages and costs which may be awarded in any such suit or action or proceedings to any such person or which may with the consent of the Contractor be paid to compromise any claim by any such person.

Excavation and Trenching  
All trenches 1.2 meters or more in depth, shall at all times be supplied with at least one ladder for each 50 meters length or fraction thereof.

Ladder shall be extended from bottom of the trench to at least 1 meter above the surface of the ground. The sides of the trenches which are 1.5 meters in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides to collapse. The excavated materials shall not be placed within 1.5 metres of the edge of the trench or half of the trench width whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

Demolition:  
(i) Before any demolition work is commenced and also during the progress of the work.
   (a) All road and open areas adjacent to the work site shall either be closed or suitably protected

   (b) No electric cable or apparatus which is liable to be a source of danger shall remain electrically charged.

   (c) All practical cares shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so over-loaded with debris or materials as to render it unsafe.

(ii) All necessary personal safety equipment as considered adequate by the Engineer-in-charge (i.e. EIC) should be kept available for the use of the persons employed on the site and maintained in condition suitable for immediate use, and the Contractor shall take adequate steps to ensure proper use of equipment by those concerned.
(a) Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective gloves.

(b) Those engaged in white washing and mixing or stacking of cement bags or any materials which are injurious to the eyes shall be provided with protective goggles.

(c) Those engaged in welding and cutting works shall be provided with protective face and eye shields, hand gloves etc.

(d) Stone breakers shall be provided with protective goggles and protective clothing, and seated at sufficiently safe intervals.

(e) When workers are employed in sewers and manholes, which are in use, the Contractor shall ensure that the manhole covers are opened and are ventilated at least for an hour before the workers are allowed to gate in to the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or board to prevent accident to the public.

(f) The Contractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Wherever men above the age of 18 years are employed on the work of lead painting, the following precautions should be taken,

(1) No paint containing lead or lead product shall be used except in the form of paste or ready-made paint.

(2) Suitable face masks should be supplied for use by the workers when Paints are applied in the form of spray or a surface having lead paint dry rubbed and scrapped.

(3) Overalls shall be supplied by the Contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash them during and on cessation of.

(iii) When the work is done near any place where there is a risk of drowning, all Necessary safety equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger
and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.

(iv) Use of hoisting machines and tackles including their attachments, anchorage and supports shall conform to the following standards or conditions:

(a) These shall be of good mechanical construction, sound materials and adequate strength and free from patent defect and shall be kept in good working order.
(b) Every rope used in hoisting or lowering materials or as means of suspension shall be of durable quality and adequate strength and free from patent defects.
(c) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 12 years should be in charge of any hoisting machine including any scaffolding, which or give signals to the operator.
(d) In case of every hoisting machine and of every chain ring hook, shackle, swivel, and pulley block used in hoisting or lowering or as means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine and all gears referred to above shall be plainly marked with the safe working load of the conditions under which it is applicable which shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
(e) In case of departmental machine, the safe working load shall be notified by the Engineer-in-charge. As regards Contractor’s machines, the Contractor shall notify the safe working load of the machine to the Engineer-in-charge whenever he brings any machinery to site of work and get it verified by the Engineers concerned.

(v) Motors, gearing transmission, electric wiring and other dangerous part of hoisting appliances should be provided with such means as to reduce to the minimum the accidental descent of the load, adequate precautions should be taken to reduce to the minimum the risk of any part or any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves, sleeves, and boots as may be necessary should be provided. The workers shall not wear any
rings, watches and carry keys or other materials which are good conductors of electricity.

(vi) All Scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe conditions and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.

(vii) These safety provisions should be brought to the notice of all concerned by the displaying on a notice board at a prominent place at the work-spot. The person responsible for compliance of the safety code shall be named therein by the Contractor.

(viii) To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangements made by the Contractor shall be open to inspection by the Welfare Officer, Engineer-in-Charge or safety Engineer of the administration or their representatives.

(ix) Notwithstanding the above clauses there is nothing in these to exempt the contractor from the operations of any other Act or rules in force in the Republic of India. The works throughout including any temporary works shall be carried out in such a manner as not to interfere in any way whatsoever with the traffic on any roads or footpaths at the site or in the vicinity thereto or any exiting works whether the property of the Administration or of a third party. In addition to the above, the Contractor shall abide by the safety code provision as per C.P.W.D. Safety Code and Indian standard Safety Code framed from time to time.

(x) The contractor shall keep one earmarked vehicle such as EECO or MAGIC or equivalent with driver, fuel & lubricant for meeting any emergent condition at site till the works under the instant contract are completed and taken over by the Owner.

(xi) The contractor shall also construct a suitable office accommodation at site at his cost to ensure safe and proper custody of all drawings, documents, appliances including easy access to them and relief to the staff and other personnel in case of any exigency. The office should be fully equipped with basic facilities such as telephone, internet, regular electric and water supply, computer/ typing with printing facilities, storage of documents and data like almirahs or file cabinets etc.

6.0 The clause no. 10.0 of GCC shall stand amended as below:
An amount @5% (Five percent) of the gross value of the running bill shall be deducted from each running bill by way of retention money. In case the EMD has been deposited by the contractor in the form of demand draft, the said amount of EMD shall be adjusted first towards the retention money and further recovery of retention money shall commence when the up to date amount of retention money exceeds the amount of EMD deposited in the form of demand draft. The retention money shall become refundable to the contractor at the end of the defects liability period free of any interest provided always that the contractor has rectified all the defects arising during the defect liability period pertaining to his scope of work, EPI did not have to incur any expenditure in setting right the defects, if any, pertaining to the contractor’s scope of work, the contractor has demolished and removed all structures including foundations and withdrawn fully from the worksite and EPI has received the clearance certificate from the concerned Labour Enforcement Officer/RLC pertaining to the labour etc. deployed by him at the worksite or there is nothing on record against him in the local market affecting functions of EPI. In case EPI has been required to make any expenditure on any of these accounts EPI will keep the retention money till the time all these matters are settled in full including recovery of the expenses, if any, made by EPI from the retention money. Further the contractor has to furnish a ‘No Claim’ certificate to EPI in confirmation of his having no claim on getting refunded the retention money to EPI at the time of claiming refund of retention money.

Further the retention money shall be released only after the contractor furnishes two numbers of bank guarantees equivalent to the value of the works of waterproofing treatment and anti-termite treatment valid for 10 years from the date of handing over of the works in the name of Chief Engineer, Head Quarters, DGAR.

7.0 Setting out works
The Engineer-in-Charge shall furnish the Contractor with only the four corners of the work site and a level bench mark and the Contractor shall set out the works and shall provide and efficient staff for the purpose and shall be solely responsible for the accuracy of such setting out.

The Contractor shall provide, fix and be responsible for the maintenance of all stakes, templates, level marks, profiles and other similar things and shall take necessary precautions to prevent their removal or disturbance and shall be responsible for the consequence of such removal or disturbance should the same take place and for their efficient and timely reinstatement. The Contractor shall also be responsible for the maintenance of all existing survey marks, boundary marks, distance marks and centre line marks, either existing or supplied and fixed by the Contractor. The work shall be set out to the satisfaction of the Owner. The approval thereof or joining with the Contractor by the Owner in
setting out the work, shall not relieve the Contractor or any of his responsibilities. Before beginning the works, the Contractor shall at his own cost, provide all necessary reference and level posts, pegs, bamboo, flags, ranging rods, strings and other materials for proper layout of the work in accordance with the scheme for bearing marks acceptable to the Owner. The Centre, longitudinal or face lines and cross lines shall be marked by means of small masonry pillars. Each pillar shall have distinct marks at the centre to enable a theodolite to be set over it. No work shall be started until all these points are checked and approved by the Engineer-in-Charge in writing but such approval shall not relieve the Contractor of any of his responsibility. The Contractor shall also provide all labour, material and other facilities, as necessary, for the proper checking of layout and inspection of the points during construction. Pillars bearing geodetic marks located at the sites of units of works under construction should be protected and fenced by the Contractor. On completion of works, the Contractor must submit the geodetic documents according to which the work was carried out.

8.0 Responsibility for level and alignment

The Contractor shall be entirely and exclusively responsible for the horizontal and vertical alignment, the levels and correctness of every part of the work and shall rectify effectually any errors or imperfections therein. Such rectifications shall be carried out by the Contractor, at his own cost, when instructions are issued to that effect by the Engineer-in-Charge. It is highly possible that there shall be more than one agency working at the same time at the site. The contractor shall at all times remain bound to co-ordinate with the agencies, deployed by EPI for the above works, including providing free access and making required provisions for them in execution of works pertaining to their portion of works. He shall also remain bound to ensure uninterrupted progress of work by these agencies in a peaceful and smooth manner. He shall also remain bound to make the required changes/additions/alterations in the works done by him to accommodate the items under the scope of work of such other agencies deployed by EPI or the client. The contractor is deemed to have made the estimated allowances in this respect while quoting his rates at the tendering stage.

Even though EPI has taken all care to attach all the drawings as vetted by the client it shall be the responsibility of the contractor to interpret the drawings for completion of the works under this contract.

The list of minimum tools, plant and machinery to be provided by the contractor within the period mentioned against the respective item is given at Annexure-A.
9.0 The following shall also be read with clause number 13 of the GCC:

a) The bidder/contractor must be registered with GST and should have valid GSTIN number.

b) The bidder/contractor must submit as an compliance under GST Act, the invoices in GST complaint format failing which the GST amount shall be recovered/adjusted without any prior notice from the next invoices or available dues with EPI.

c) The bidder/contractor are required to update/upload the GST/Taxes data periodically so as to avail ITC credit by EPI failing which it shall be recovered/adjusted by EPI without any prior intimation.

d) The rates quoted by the contractor shall be “inclusive of all taxes and duties, cess including GST” which shall be reimbursed to him subject to raising of tax invoice and filing of return and payment of tax as per GST law, failing which EPI shall not be able to honour his claims for any payment. The contractor has quoted his rates knowing fully well that submission of return and display of the same on GSTN portal is mandatory.

e) In case of any reduction in rate of GST or other taxes in future or the project getting exemption status prior to the last date of Bid submission or afterwards, the subcontractor shall pass on the benefit to EPIL immediately, failing which EPIL shall have the right to recover the differential amount from the amounts due to the subcontractor. Further in case of any increase in rate of GST or other taxes in future or the project losing exemption status prior to last date of bid submission or afterwards, the said increase of taxes shall be paid /reimbursed to the subcontractors, subject to the condition that the client reimburses the said increased taxes to EPIL.

f) If the bidder quotes abnormally low rate/s compared to estimated cost put to tender, in such cases the rate/s of the lowest bidder if found in rate/s of the item/s are abnormally low, then additional bank guarantee/s equivalent to the difference of quoted rate/s and justified rate/s of the item/s shall be required to be furnished by the bidder before issue of LOI of the work. Additional Bank Guarantee/s obtained in these context shall be returned to the bidder after the satisfactory execution (dually certified by Site In-charge) of work at site.
9.1. The following shall stand added to the clause no 23.2 of GCC:

The PF & ESI contributions on part of employer shall be paid by the Contractor. These contributions shall be reimbursed by EPI/DGAR to the Contractor against documentary evidence subject to a limit of 3.4 % towards PF and 1.19% towards ESI (if applicable) of the Contract Price. The contractor is required to furnish PF & ESI deposit proofs progressively along with his RA bills failing which 4.70% of his gross bill value shall be hold from his RA bills/Payments. If it is incumbent upon EPI to deposit the withheld amount with EPFO, the same shall be deposited by EPI and the amount shall not be refunded to the contractor even after production of PF deposit proofs by the contractor at a later date.

However, any variation in taxes and duties after submission of due date of submission of tender shall be to the owner's account i.e. in case of any decrease in the taxes and duties shall be passed on to the owner and any increase in taxes and duties shall be borne by the Owner. Similarly, the imposition of any fresh taxes and duties shall also be borne by the Owner.

All the above reimbursements shall be admitted to the extent these are admitted by the Owner.

10.0 The following shall stand added to the clause no 20 of GCC:

The contractor shall keep EPI indemnified against all claims, damages, compensation and expenses payable, if any, in consequence of any accident, or injury sustained by any workman or any other person employed by the contractor.

11.0 The following shall stand added to the clause no 27.0 including its sub clauses of GCC of EPI:

The contractor, within 10 days of issuance of LOI (Letter of Intent) to him shall depute at least One Graduate Civil Engineer of min 2 years post qualification experience or One Diploma in Civil Engineering having 5 years post qualification experience. Should the contractor fail to provide them within such period or as directed by the Engineer-in-charge, EPI shall be at liberty to recover an amount @30,000.00 per month person from any amount including the retention money due to the contractor.

12.0 The clause no 28.3 of the GCC shall stand deleted.

13.0 No secured advance shall be paid to the contractor and hence clause no. 35.0 of GCC shall stand deleted.

14.0 The clause no. 43.2 shall stand amended as below:
The contractor shall execute the works so as to complete the works within the
stipulated completion time. He shall remain bound to submit a programme of
completion of items.

15.0 The following shall stand added to clause no 45.0 of the GCC:
The contractor shall at all-time remain bound to provide the samples in quantity
and manner as instructed by EPI to be analyzed or tested in an outside
laboratory or in the field laboratory at site. The cost of testing charges is included
in the prices of the contractor. EPI shall, however, be at liberty to get the
materials tested independent of the contractor and the contractor shall remain
bound to render all assistance to EPI in conductance of such tests including
making available the materials in sufficient quantity and in time and payment of
the testing charges. EPI/client shall at all times have full access to the works and
to all workshops and places where work is being prepared or from where
materials, manufactured articles or machinery. The contractor shall afford every
facility and assistance and cost in obtaining the right and visit to such access.
EPI shall have full powers to require the removal from the premises of all
materials which in their opinion are not in accordance with the specifications and
in case of default, EPI shall be at liberty to employ at the expense of the
contractor, other persons to remove such materials without being answerable or
accountable for any loss or damage that may happen or arise to such materials.
EPI shall also have full powers to require other proper materials to be substituted
thereof and in case of default by the contractor, may cause the same to be
supplied and all costs which may require such removal and substitution shall be
to the contractor’s account.

16.0 The following shall be added to clause no 52.6 of GCC:
The field testing laboratory to be established by the contractor at his cost shall be
equipped with the minimum number of testing equipment as per Annexure-B. In
case the contractor fails to provide them EPI shall get them installed and debit
the cost to the contractor.

17.0 The following provisions shall supersede that of clause no 69 of GCC
wherever applicable:
No claim on account of extra / substituted / variation of items etc. pertaining to
the contractor’s portion of work save and except what is admitted and paid by
Owner, shall be entertained or admitted by EPI. Any claim by the contractor, if
not paid by the Owner, whatsoever be the reason shall not be admitted by EPI.
But under no circumstances contractor shall suspend the work on the non-
settlement of rates under this clause.
18.0 In case the project execution is delayed beyond the contractual scheduled completion period due to reasons attributable to the contractor, the staff and site expenses of EPI for extended period shall be paid by him to EPI at the rate of Rs. 10,000/- per month. This shall be in addition to the other recoveries, if applicable as per clause no 72 (including its sub clauses) of GCC and Penalties etc. if any, levied by Owner for the works pertaining to the contractor’s scope of work. The decision of EPI in this regard shall be final & binding on the contractor.

19.0 The work executed by the contractor shall be subject to audit and quality control checks from Quality Control Division & Technical Audit of EPI, Client, and Inspecting Agency of the Client and Chief Technical Examiner of Central Vigilance Commission, Govt. of India. In the eventuality of any defect/ substandard works as brought out in the report or noticed otherwise at any time during execution, maintenance period etc., the same shall be made good by the contractor without any cost to EPI. In case the contractor fails to rectify the defect/sub-standard work within the time period stipulated by EPI, EPI shall get it rectified at the risk and cost of the contractor and shall recover the amount from the dues of the contractor.

Further all works Executed by the contractor shall be subject to third party testing to be deployed by EPI for which the expenses shall be borne by the contractor within his quoted rates.

20.0 Execution of Work. Once the contract is awarded a work order will be issued to the contractor and site handed over and in no case this will be issued on back date. Time for completion will commence from the date of issue of work order. Engineer in charge will be nominated by name and communicated to all concerned and during his absence relief will be given by name. Following procedures to be ensured:

(a) A Testing Laboratory will be established by the Agency or suitable tie up done with approved testing laboratory or consultancy for quality check.

(b) Following registers/documents will be maintained and produced when asked for:

i. Hindrance recording register.
ii. Stage passing register.
iii. Site order book.
iv. Inspection register.
v. Materials testing register.
vi. Contractor ledger.
vii. Labour license.
vi. CAR/EAR/MCI Policy with STPI, Earthquake & TPL.
(c) Monthly progress will be monitored and forwarded to all concerned.

(d) Time extension if required must be processed well in advance before existing completion date supported by documents like newspaper cutting, letter from user etc.

(e) If any willful delay from contractor is noticed suitable action taken as per contract condition and work to be completed by due date by resorting to alternate means specified in contract conditions.

(f) Quality checks to be carried out at each level to be laid down percentage wise during the process of execution.

(g) If any unforeseen delay occurs the same must be resolved by coordinating with all stakeholders.

21.0 Preparation of Running Account Register. Work carried out by the contractor should be jointly measured and entered in to the measurement book. Any mistakes in the MB will be scored and initialed. Following documents to be submitted along with RAR:

(a) Measurement Book.
(b) Photographs of the work carried out duly signed by Agency and SO1 Wks.
(c) Quality test reports from approved laboratory.
(d) Recommended Liquidity Damages for delayed works.
(e) RAR Movement slip.

22.0 Completion and Handing over of Assets to User. Once the work is completed certificate will be obtained from user and work officer of the sector and then the same will be intimated to Engineers branch for ordering Board to verify and take over assets. All construction materials and tools lying in the site will be removed and assets will be kept ready for handing over to user. A performance report of the contractor will be forwarded to the Engineers branch and all warranty will be documented and handed over to the works officer of the sector.

It is mandatory to adhere to the guidelines for executing the works pertaining to Assam Rifles. Any deviation or failure will be treated as violation of MoU and due penalty will be imposed on the Agency charges and denial of future works.

23.0 ARBITRATION: Clause no. 76.1 of GCC shall stand amended as below:
Before resorting to arbitration as per the clause given below, the parties if they so agree may explore the possibility of conciliation as per the provisions of Part III of the Arbitration and Conciliation Act, 1996 as amended by Arbitration and Conciliation (Amendment) Act, 2015. When such conciliation has failed, the parties shall adopt the following procedure for arbitration:
i) Except where otherwise provided for in the contract, any disputes and differences relating to the meaning of the Specifications, Design, Drawing and Instructions herein before mentioned and as to the quality of workmanship or materials used in the work or as to any other questions, claim, right, matter or things whatsoever in any way arising out of or relating to the Contract, Designs, Drawings, Specifications, Estimates, Instructions, or these conditions or otherwise concerning the works of the execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the Sole Arbitrator appointed by the Chairman & Managing Director (CMD) of Engineering Projects (India) Limited (EPI) or any other person discharging the functions of CMD of EPI. The person approached for appointment as Arbitrator shall disclose in writing circumstances, in terms of Sub-Section (1) of Section (12) of the Arbitration and Conciliation Act, 1996 as amended by Arbitration and Conciliation (Amendment) Act, 2015 as follows:

a) such as the existence either direct or indirect, of any past or present relationship with or interest in any of the parties or in relation to the subject-matter in dispute, whether financial, business, professional or other kind, which is likely to give rise to justifiable doubts as to his independence or impartiality; and

b) Which are likely to affect his ability to devote sufficient time to the arbitration and in particular his ability to complete the entire arbitration within a period of twelve months.

The Arbitrator shall be appointed within 30 days of the receipt of letter of invocation of arbitration duly satisfying the requirements of this clause.

ii) if the arbitrator so appointed resigns or is unable or unwilling to act due to any reason whatsoever, or dies, the Chairman & Managing Director aforesaid or in his absence the person discharging the duties of the CMD of EPI may appoint a new arbitrator in accordance with these terms and conditions of the contract, to act in his place and the new arbitrator so appointed may proceed from the stage at which it was left by his predecessor.

iii) It is a term of the contract that the party invoking the arbitration shall specify the disputes, differences or questions to be referred to the Arbitrator under this clause together with the amounts claimed in respect of each dispute.

iv) The Arbitrator may proceed with the arbitration ex-parte, if either party, in spite of a notice from the arbitrator, fails to take part in the proceedings.

v) The work under the contract shall continue as directed by the Engineer-In-Charge, during the arbitration proceedings.
vi) Unless otherwise agreed, the venue of arbitration proceedings shall be at the venue given in the 'Memorandum' to the 'Form of Tender'.

vii) The award of the Arbitrator shall be final, conclusive and binding on both the parties.

viii) Subject to the aforesaid, the provisions of the Arbitration and Conciliation Act, 1996 as amended by Arbitration and Conciliation (Amendment) Act, 2015 or any statutory modifications or re-enactment thereof and the Rules made there under and for the time being in force shall apply to the arbitration proceedings and Arbitrator shall publish his Award accordingly.

23.1 **Clause no 76.2 of GCC shall stand amended as under**

“In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSE) / Port Trust inter se and also between CPSE and Government Departments / Organizations (excluding disputes concerning Railways, Income Tax, Customs and Excise Departments), such dispute or differences shall be taken up by either party for resolution through AMRCD as mentioned in DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22.05.2018”

23.2 **Clause 76.3 of GCC shall remain unchanged.**

24.0 EPI has awarded this contract on behalf of DGAR (Director General Assam Rifles), Owner. In case EPI ceases to or exits from the project the right and responsibility etc. of EPI in the contract shall get transferred to DGAR (Director General Assam Rifles) or his nominated agency (ies).

25.0 **Completion and taking over:**

As soon as the works are completed the contractor shall inform EPI and EPI in turn shall inform DGAR who will nominate a board of officers for checking/verification of completed work as per the contract for final taking over of the project.

A final certificate of rectification of all defects pointed out during handing/taking over by the nominated board of DGAR and /or during defect liability period shall be obtain from the SO1(works) of the respective range prior to release of security deposit.

a) Completion certificate issued by the Engineer-in-charge specifying the handing over of the work including list of inventories (fitting & fixtures).

b) No claim certificate by the Contractor.
c) No claim certificate from the sub-agencies/vendors engaged by the Contractor.
d) Detail required for preparing as built drawings.
e) Periodical services and measurement books.
f) Drawings for layout of underground cables and details showing location of sluice valves, electric cable joints etc.
<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Description</th>
<th>Minimum numbers required</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Digital theodolite/Total station</td>
<td>One no</td>
<td>As and when instructed/required</td>
</tr>
<tr>
<td>2</td>
<td>Leveling Instruments/ Auto level</td>
<td>One no</td>
<td>10 days</td>
</tr>
<tr>
<td>3</td>
<td>DG Set 10 KVA (Minimum)</td>
<td>One no</td>
<td>As and when instructed/required</td>
</tr>
<tr>
<td>4</td>
<td>5 HP Diesel pump</td>
<td>Two no</td>
<td>10 days</td>
</tr>
<tr>
<td>5</td>
<td>Diesel concrete mixer with hopper &amp; Weighing arrangement (Full bag capacity)</td>
<td>Two nos.</td>
<td>15 days</td>
</tr>
<tr>
<td>6</td>
<td>Concrete Vibrators with needles</td>
<td>Four nos.</td>
<td>15 days</td>
</tr>
<tr>
<td>7</td>
<td>Steel/Plywood Shuttering</td>
<td>100 sq. m</td>
<td>Progressively by 30 days</td>
</tr>
<tr>
<td>8</td>
<td>Dumpers/trucks</td>
<td>Two no.</td>
<td>As and when instructed/required</td>
</tr>
<tr>
<td>9</td>
<td>Excavators (JCB/Poclaine)</td>
<td>One no</td>
<td>-Do-</td>
</tr>
<tr>
<td>10</td>
<td>Welding machines</td>
<td>One no.</td>
<td>-Do-</td>
</tr>
<tr>
<td>11</td>
<td>2 HP Electric pump</td>
<td>One no.</td>
<td>-Do-</td>
</tr>
<tr>
<td>12</td>
<td>Utility vehicle</td>
<td>One no</td>
<td>-Do-</td>
</tr>
<tr>
<td>13</td>
<td>Truck mounted water tanks</td>
<td>One no</td>
<td>-Do-</td>
</tr>
<tr>
<td>14</td>
<td>Portable Welding Machine</td>
<td>One no</td>
<td>-Do-</td>
</tr>
</tbody>
</table>

Notes:
1) The period mentioned above shall be reckoned from the date of start of commencement of work as mentioned under this contract.

2) The quantities and list of equipment indicated are tentative and can be increased/amended as per the requirement of work OR as per the direction of Engineer-in-Charge. The above equipment list is indicative and not complete. The contractor has to deploy all the required equipment to complete all the works within stipulated specifications & time period as contract documents.

3) The contractor will not be allowed to take out equipment from the site without the written permission of Engineer-in-Charge.

(Signature and seal of the Tenderer)
# ANNEXURE-B

## LIST OF MINIMUM TESTING EQUIPMENT

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Description</th>
<th>Minimum numbers required</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Compressive Testing machine</td>
<td>One no</td>
<td>20 days</td>
</tr>
<tr>
<td>2</td>
<td>Electrically operated Digital Weighing Machine (0-5 kg)</td>
<td>One no</td>
<td>10 days</td>
</tr>
<tr>
<td>3</td>
<td>Slump test apparatus</td>
<td>One no</td>
<td>10 days</td>
</tr>
<tr>
<td>4</td>
<td>Set of sieves for grading of coarse aggregates</td>
<td>One set</td>
<td>10 days</td>
</tr>
<tr>
<td>5</td>
<td>Set of sieves for grading fine aggregates</td>
<td>One set</td>
<td>10 days</td>
</tr>
<tr>
<td>6</td>
<td>Cement consistency apparatus</td>
<td>One no</td>
<td>20 days</td>
</tr>
<tr>
<td>7</td>
<td>Electrically operated oven (300 deg. Centigrade)</td>
<td>One no</td>
<td>10 days</td>
</tr>
<tr>
<td>8</td>
<td>Trays for sampling</td>
<td>One set</td>
<td>10 days</td>
</tr>
<tr>
<td>9</td>
<td>Apparatus for testing of cement</td>
<td>One set</td>
<td>30 days</td>
</tr>
<tr>
<td>10</td>
<td>150X150X150 CI Cube Moulds</td>
<td>12 nos.</td>
<td>10 days</td>
</tr>
<tr>
<td>11</td>
<td>Vicat Apparatus with needles, Test Tubes, breakers, thick glass plates etc.</td>
<td>One set</td>
<td>15 days</td>
</tr>
<tr>
<td>12</td>
<td>Measuring Cylinders, 1000ml, 500 ml</td>
<td>01</td>
<td>15 days</td>
</tr>
<tr>
<td>13</td>
<td>Wash Bottles, Capacity 500 ml</td>
<td>02</td>
<td>15 days</td>
</tr>
<tr>
<td>14</td>
<td>Sink</td>
<td>01</td>
<td>15 days</td>
</tr>
<tr>
<td>15</td>
<td>Litre: Measures:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Lit</td>
<td>02</td>
<td>15 days</td>
</tr>
<tr>
<td></td>
<td>04 Lit</td>
<td>01</td>
<td>15 days</td>
</tr>
<tr>
<td></td>
<td>0.5 Lit</td>
<td>01</td>
<td>15 days</td>
</tr>
</tbody>
</table>

### Notes:

1) The period mentioned above shall be reckoned from the date of start of commencement of work as mentioned under this tender.

2) The quantities of equipment indicated are tentative and can be increased as per the requirement of work OR as per the direction of Engineer-in-Charge. The above equipment list is indicative and not complete. The contractor has to deploy all the required equipment to complete all the works within stipulated specifications & time period as per contract documents.

3) The contractor will not be allowed to take out equipment from the site without the written permission of Engineer-in-Charge.

(Signature and seal of the Tenderer)
### Appendix-A

Material Collect from BRO store for Package -2 (SRF- GI No- 579 & 583)

<table>
<thead>
<tr>
<th>SL No</th>
<th>Items Description</th>
<th>Unit</th>
<th>Quantity</th>
<th>Rate (')</th>
<th>Amount(’)</th>
<th>Name of store</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>MS Spikes with Plate</td>
<td>Nos</td>
<td>805.00</td>
<td>257.85</td>
<td>207569.00</td>
<td>Dett. Nagichera</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Turn Buckle</td>
<td>Nos</td>
<td>1680.00</td>
<td>28.50</td>
<td>47880.00</td>
<td>Dett. Nagichera</td>
<td>1177.7 Nos from HQ 112RCC &amp; Balance quantity from Dett. Nagichera</td>
</tr>
<tr>
<td>3</td>
<td>Concertina coil 1000 mm dia</td>
<td>Each</td>
<td>286.00</td>
<td>1275.00</td>
<td>364650.00</td>
<td>Dett. Nagichera</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>MS Washer /GI Washer</td>
<td>100 nos</td>
<td>900.00</td>
<td>52.50</td>
<td>473.00</td>
<td>Dett. Nagichera</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1st Class Bricks</td>
<td>1000 nos</td>
<td>0.00</td>
<td>7275.00</td>
<td>0.00</td>
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<tr>
<td>6</td>
<td>OBJBM 40mm</td>
<td>Cum</td>
<td>0.00</td>
<td>2350.00</td>
<td>0.00</td>
<td></td>
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<tr>
<td>7</td>
<td>OBJBM 63.45 mm</td>
<td>Cum</td>
<td>0.00</td>
<td>2350.00</td>
<td>0.00</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>ORD Brick bats</td>
<td>Cum</td>
<td>0.00</td>
<td>1475.00</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Stone chips 13.20 mm</td>
<td>Cum</td>
<td>33.00</td>
<td>1762.50</td>
<td>58163.00</td>
<td>Dett. Lalchera</td>
<td></td>
</tr>
</tbody>
</table>

**Total amount** 678735.00

Quantity and Store mentioned above may change. EPI’s Decision is final on contractor and no extra payment will be admissible for any change.
SPECIFICATIONS

1. The work shall be executed as per the description of item given in the ‘Schedule of Quantities’, General Conditions, Special Conditions, Particular Specifications and CPWD Specifications 1996 Vol 1 to Vol VI with upto date correction slips upto last date of issue of tenders.

2. The contractor shall provide necessary labour, tools & plants required for making the alignment of fencing on ground as & when the site/land shall be made available as and when the procession of the same is handed over to the EPI by the state Government.

3. Nothing extra shall be payable for bailing out/pumping out sub-soil water, if any, and for laying concrete in or under water.

4. Bottom most row of the horizontal barbed wire shall be 75 mm to 150 mm above the ground level. To meet this requirement, surface dressing and jungle clearance may have to be done upto a distance of 3 meters on either side of each row of the security fencing. Nothing extra whatsoever, shall be paid on this account.

5. All steel fabrication work shall be done in a workshop well equipped for the required operations. Holes for bolts shall be properly matched and copper enriched M S fabricated posts & struts. M S flats with M S spikes duly welded shall be got approved in the workshop itself before taking the fabricated material to the site of work & nothing extra whatsoever, shall be payable on this account.

6. (i) Copper enriched M S angle sections shall be procured from the tested lots of copper enriched M S angles manufactured by either Steel Authority of India Limited (SAIL) or Indian Iron & Steel Company (IISCO) or Tata Iron & Steel Company (TISCO) or Rastrriya Ispat Nigam Limited (RINL). Contractor shall have to produce all the original documents e.g. supply orders, bills, proof or payments, delivery challan, gate passes manufactures test certificate etc. relating to the procurement of each consignment of copper enriched M S angle sections & it shall be the responsibility of the contractor to conclusively establish that all the consignments of angle sections brought for use in the work have been procured from the tested lots conforming to I S 2062 – equivalent 1992 of SAIL, IISCO, TISCO, RINL. Contractor shall commence the fabrication only after the Engineer-in-Charge is satisfied that angle sections conforming to the aforesaid specifications have been procured by the contractor from tested lots of SAIL, IISCO, TISCO or RINL.

   (ii) Coefficient and tolerance of angle iron in weight and section shall be as per I S 1852 – 1985

   (iii) If directed by the Engineer-in-Charge, the contractor shall at his own cost make all arrangement for conducting test of the supplied copper enriched M S angles, M S flats according to norms / direction indicated in the EPI/CPWD/relevant I S specification from the approved testing laboratory
7 The ends of copper enriched M S angle posts and struts to be embedded in cement concrete blocks shall be fist-trailed by cutting long the corner of the angles upto a minimum length of 60 mm and nothing extra shall be paid on this account.

8 In case of struts, foundation pits shall be xcavated to suit the inclination of strut so that it is surrounded by concrete by not less than 200 mm at any point. Cost of extra excavation that may be required to provide the struts in the inclined position including back filling & disposal of surplus earth is deemed to be included in the rates against item No. 4 & 5 of BOQ and nothing extra whatsoever shall be paid on this account.

9 2 mm dia G I staple/clip for fixing barbed wire with angle iron posts shall be as per the drawing.

10 (i) The intermediate copper enriched M S angle posts between two adjacent strutted posts shall be serially numbered so as to achieve the arrangement of fixing of tightening bolts shown in the drawings attached with the documents relating to this contract.

At the time of commencement of the work, the Contractor shall erect 30 meters lengthy of fencing & get it approved by the Engineer-in-Charge before large-scale work is carried out.

(ii) Posts and struts shall be fabricated from single piece of copper enriched M S angles. However, butt-welding will be permitted for not more than one out of four posts/struts and only two pieces (smaller pieces to be not less than 600 mm) of copper enriched M S angles shall be used to form any such posts/struts. Welded joints in the posts/struts shall neither be at the bends or within a distance of 400 mm from the bend. No welded joints shall be permitted in the slanting portion of the posts. Wherever welding is restored as per the condition of the contract, only visual inspection of welding shall be done as per I S code 822 and the decision of the Engineer-in-Charge for acceptance of the weld or otherwise shall be final. For butt-welding, the edges of the metal pieces shall be beveled to the required slope and the weld shall be continuous & cover the full cross-section of copper enriched M S angles. The welding work will be carried out as per sample approved by Engineer-in-Charge before large scale work is carried out.

11 The diagonals of barbed wire shall be continuous & stretched between adjacent posts from top horizontal row of barbed wire of one of post to the bottom horizontal row of the second post. For fixing diagonals of barbed wire, separate holes shall be drilled in the posts.

12 On Bangladesh side, every diagonal barbed wire of security fencing shall be adequately tied with minimum six turns of G I wire of 16 gauge at least at three intersections with horizontal rows of barbed wire above the height of seven rows of fencing from ground level in the vertical portion and at least at three places in the slanting portion.

13 On India side, every diagonal barbed wire of security fencing shall be adequately tied with minimum six turns of G I wire of 16 gauge at least at five intersections with horizontal rows of barbed wire.
14 G I barbed wire at ends and at joints shall be given eight turns & either tied with G I wire of not less than 16 gauge at three places with at least six wraps at each place or clamped with two U-Bolts and nothing extra shall be paid on this account.

15 Wherever nuts & bolts are used for the assembly of steel sections, two G I washers of 3 mm thickness and of appropriate size shall be used with each set of nut & bolt and nothing extra shall be paid on this account.

16 Concertina coil shall be laid only after stretching, tightening & frixing all the barbed wires in all the rows of security fencing and after applying final coat of paint on copper enriched M S angle posts & struts, M< S flats & M S spikes etc.

17 The coat of anticorrosive paint over punched tape concertina coil, as specified, shall be applied before stretching the coil to its required length as per the conditions given in this tender documents.

18 ‘Goose-neck’ wherever mentioned in the documents relating to the contract shall mean slanting portion or copper enriched M S angle posts of size 90x90x6mm.

19 Mixing of concrete shall be done in mechanical mixers only and under no circumstances hand mixing shall be permitted. For shuttering of concrete work steel shuttering in adequate number of sets are required to be arranged by the contractor.

20 G I barbed wire shall conform to IS 278 - : 1978.

21 (i) Before fixing the G I barbed wire to copper enriched M S angle iron posts for all three rows the rolls of wire shall be duly painted by dipping it in paint twice in four operations (a) Dipping in paint for 12 hours (b) dried for 36 hours & (c) dipping in paint again for 12 hours (d) dried for 36 hours. It shall be ensured that all the surface of the wire is covered by black paint, if not, Engineer-in-Charge may at his discretion allow the contractor to brush paint small area which are not painted by dipping to the entire satisfaction of Engineer-in-Charge with anti-corrosive bitumastic paint IS-158 of approved brand in black shade. Similarly the punched tape concertina coil shall be painted by dipping it in anticorrosive bitumastic paint conforming to IS-158 in four operations (a) dipping in paint for 2 hours, (b) dried for minimum 8 hours (c) dipping in paint again for 2 hours and (d) drying for 24 hours.

(ii) For theoretical consumption of bitumastic paint for Barbed wire & concertina coil, the following co-efficient to be adopted.

(a) Barbed wire (2 coats) @0.60 lit/100 metre length
(b) Concertina coil (2 coats)@1.5 lit. per coil

22 Application of following primer/paint in the sequence mentioned below shall be made to the M S/copper enriched still angle iron posts/struts except portion embedded in cement concrete which shall have one coat of Alkyd zinc phosphate primer. The same treatment shall be given to all the accessories of tightening bolts, U-bolts, nuts, clips,
hooks, washer & spike plates etc. by dipping them in the following primer and paint. All primer/paint shall be of approved brand & manufacturer.

(a) First coat of alkyd zinc phosphate primer  
(b) Second coat of red oxide zinc chrome primer  
(c) Third coat of synthetic enamel gray paint  
(d) Fourth & fifth coat of synthetic enamel block paint

23 The fencing work shall be executed in the following sequence.

(i) Alignment of fencing and earth work in embankment  
(ii) Excavation of foundation holes  
(iii) Fabrication applying priming coat and erection of angle iron posts/struts and casting of foundation  
(iv) Laying C C pavement  
(v) Priming/painting of angle iron posts/struts  
(vi) Fixing of barbed wire, tightening/straightening bolts  
(vii) Stretching of barbed wire  
(viii) Laying of concertina coil  
(ix) Fabrication & fixing of gate posts and gates  
(x) Laying of Barbed wire inside concertina coil.

24 ALIGNMENT OF FENCING AND EARTH WORK IN EMBANKMENT

Alignment of fencing is to be fixed by consulting the representatives of B S F, District Administration and EPI jointly after observing pros and cons of various problems/points.

25 EXCAVATION OF FOUNDATION

The foundation of the required dimensions is dug with the help of augers, spatual and jumpers at 3 metres centre to centre. The foundation shall be dug in such a manner that angle iron posts of all the three rows are staggered and no angle iron post of any two rows comes in line perpendicular to the line of fencing. Wherever the depth of earth filling is more than 60 cm, additional excavation in 60 cm depth to accommodate additional 60 cm length of angle iron post for India and Bangladesh side and extra depth of C C block for encasing there of shall be done.

26 FABRICATION AND ERECTION OF ANGLE IRON POSTS:

The angle iron post/struts are to be fabricated in contractor’s work-shop in near by town areas and are to be got approved by the Engineer-in-Charge in the workshop itself before these are carted to site for erection.

Initially cement concrete 1:3:6 is poured to fill-up 15 cm/30 cm depth of excavated holes as per drawing and left till it attains enough strength for resting of angle iron post without sinking in it. After this foundation concrete gets hardened (in 3 hours or more) the angle
iron post is erected vertically in the foundation boles with help of ballies etc. and rest of cement concrete 1:3:6 is poured. These ballies can be removed after three hours or more when the concrete gains enough strength to hold the iron post.

The foundation concrete for struts shall be poured after bolting the struts to the already fixed vertical post so that there is no frizing problem afterwards due to mis-matching of holes.

27 **PRIMING/PAINTING OF ANGLE IRON POSTS** :  
Priming the angle iron post/struts is to be carried out in the work shop after the fabrication is duly inspected & approved by the Engineer-in-Charge, however other coats of painting shall be applied, 5/6 days after fixing the posts/struts and laying of C C pavement.

28 **FIXING OF TIGHTENING BOLTS/M S HOOKS** :  
After the posts are primed and painted (one coat) the tightening bolts are properly fixed to the vertical posts of outer rows of fencing n such a way that the vertical distance between two tightening bolts on any post is not less than 1350mm except the end/corner posts. The steel hooks are fixed to the starting/end and corner posts with the help of nuts and bolts.

29 **STRETCHING OF BARBED WIRE** :  
The barbed wire reels/rolls are placed on a wooden stand in such a fashion that the reels can revolve on a rod placed through the reel axis by just pulling one end of barbed wire. These stands are placed on one end of the panel on which barbed wire to be stretched. The end of barbed wire is pulled to 30m of the next strutted post and cut to proper size. The Separation is repeated for each row in that panel. For all rows of fencing alternate rows of barbed wire are firstly tied middle of the two strutted posts of the panel to minimize the sagging. All the alternate rows are then stretched with the help of the tightening bolts. The tightening should be preferably done from bottom row to the top where as the stretching should commence top to bottom.

After all the alternate barbed wire rows are sufficiently tight the same are tied up with other intermediate vertical posts with the help U-pins. After this the diagonals (two one the goose neck and two on the vertical) between each vertical posts are stretched over the already tightened, alternate horizontal rows with the help of crowbars and tied with the help of U-pins.

When the diagonal in the panels are complete the remaining alternate rows of horizontal barbed wire are stretched/tightened over the cross in exactly the similar fashion as already done for the previous alternate rows of horizontal barbed wire.

30 **CONCERTINA COILS** :
Brief specifications are given in Bill of Quantities. This shall be punched tape concertina coil: 1A specification – IND/Engg/PROV/1245B (weight not less than 15.2 Kg per coil). Details of the specifications are available with Directorate General of supply and disposal, Govt. of India.

The concertina coil is to be laid only when all the barbed wires are stretched on all the three rows of fencing. Before laying the concertina coils it is to be ensured that a final coat of paint is applied on the angle iron posts.

31 **LAYING OF BARBED WIRE INSIDE CONCERTINA COIL**;

Barbed wire is to be placed inside all four-concertina coils in inclined diagonal pattern and stretched and tied with the barbed wires of fencing. There shall be two rows of barbed wires one between India side & middle row and the other between Bangladesh side and middle row, each row of barbed wire consisting of 2 layers (top and bottom layer) of barbed wire.

For the purpose of measurement of barbed wire inside concertina coils as per item no. 5 of schedule of quantity, both top and bottom layers of barbed wire inside one row shall constitute one unit and the total length of barbed wire in one row shall be taken equal to the horizontal length of fencing.

32 Unless otherwise specified, nothing extra shall be payable for executing the work as per the aforesaid conditions & specifications.

33 **RETAINING WALL AND EARTH WORK IN EMBANKMENT**;

(i) The Contractor shall prepare a Bar Chart in consultation with the Engineer-in-Charge before taking up the construction of retaining wall in low lying areas in descending order of height of retaining wall i.e. from higher section to lower section.

(ii) Immediately after construction of retaining wall earthwork in embankment in low-lying areas will be taken up as per item No. of the schedule of quantity, duly compacted and left for maximum available time for further consolidation. The erection of fencing in low-lying section to higher section.

(iii) Earth work in embankment in non low lying areas shall also be taken up simultaneously with the construction of retaining walls in low lying area as per item No. of the schedule of quantity, duly compacted/consolidated for erecting of fencing.

34 Properly designed filter media shall be provided as per the direction of the Engineer-in-Charge at weep hole locations. Separate payment shall be made wherever such media are provided.
35 IBB Border Road Specification

In accordance with Border Road standards, Class-5 Road shall consist of 2.44 m wide carriageway with 0.915m wide earthen shoulder on either side of IBB road. The carriageway shall consist of 2 layers of 75 mm thick WBM (63mm to 40 mm stone aggregate) as sub-base. The design norms for horizontal & vertical gradients, radii, super elevation and design speed etc. shall be in line with BRO, MOST & IRC specifications for rural hill roads. A 20mm thick premix carpet with 80/100 grade asphalt over a tack coat, shall be the wearing course as per latest BSF/CPWD guidelines. The details are enclosed in EPI drawing No. Cl-496/C/104.

35.1 Longitudinal Drains

A Trapezoidal longitudinal drain shall be constructed out of random rubble masonry along IBB road on hill side. The construction details are shown in enclosed EPI drawing no. CL-496/C/171.

36 LIST OF CODES

1 M S/copper enriched steel - Relevant I S
2 Specification for Ready mix Paint, brushing, bituminous, Black lead free acid, alkali and heat resisting - IS:158-1981
3 Specifications for Galvanized steel barbed wire for fencing - IS 278-1978
PROJECT:- 02 NOS SM BARRACKS (G+1)
ASSAM RIFLES BATTALION, LUNGLEI, MIZORAM

CLIENT:- DIRECTOR ASSAM RIFLES BATTALION

ARCHITECT:- designers' guild

DRAWN:- Harender
CHECKED:- Surender

Drg. No Nero/Asr/Mizoram /SM Barrack/Arc/003

DATE: 08/03/2018

SCALE: NTS
SECTION - AA

N.G.LVL.
+600
+3800
+7000
PL.LVL

SECTION - BB

TERRACE.FL.

PROJECT:- 02 NOS SM BARRACKS (G+1)
ASSAM RIFLES BATTALION, LUNGLEI, MIZORAM

CLIENT:- DIRECTOR ASSAM RIFLES BATTALION

Drg. No
NERO/ASR/MIZ/SM Barrack/Arc/005

DATE:
08/03/2018

SCALE = NTS

ARCHITECT:-
designers' guild

DRAWN:-
Harender

CHECKED:-
Surender
**DOOR WINDOW SCHEDULE**

<table>
<thead>
<tr>
<th>S.N.</th>
<th>TYPE</th>
<th>OPENINGS</th>
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<tbody>
<tr>
<td>1</td>
<td>FW6+V6</td>
<td>1800 X 1200</td>
</tr>
<tr>
<td>2</td>
<td>FW5+V5</td>
<td>1500 X 1200</td>
</tr>
<tr>
<td>3</td>
<td>FW3+V3</td>
<td>900 X 1200</td>
</tr>
<tr>
<td>4</td>
<td>Wt+Vt</td>
<td>600 X 750</td>
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<tr>
<td>5</td>
<td>V5</td>
<td>1500 X 500</td>
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<tr>
<td>6</td>
<td>V4</td>
<td>1200 X 500</td>
</tr>
<tr>
<td>7</td>
<td>V3</td>
<td>900 X 500</td>
</tr>
</tbody>
</table>

**STEEL WINDOW**
- FW6 & V6
- FW5 & V5
- FW3 & V3
- Wt & Vt
- V5
- V4
- V3

**STEEL VENTILATOR**
- v5
- v4
- v3

**Title:** Steel Window Schedule

**Scale:** NTS

**Drawn:** Harender

**Checked:** Surender

**Date:** 08/03/2018

**Designers' Guild United**

**A-87, Sector-46**

**No.1303, Noida-201303**

**Ph:** 0120-2559837

**e-mail:** designersguild@gmail.com

**Architect:** Designers' Guild United

**Project:** 02 Nos SM Barracks (G+1)

**Client:** Director Assam Rifles Battalion

**Project No:** Drg. No Nero/Asr/Mizoram/SM Barrack/Arc/006
DOOR WINDOW SCHEDULE

<table>
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<tr>
<th>S.N.</th>
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<th>SIZE</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
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<td>1</td>
<td>DT</td>
<td>760 X 2100</td>
<td>FACTORY MADE PVC FRAME WITH PVC SHUTTER INCLUDING ALL FITTINGS OF APPROVED MAKE</td>
</tr>
<tr>
<td>2</td>
<td>D1</td>
<td>900 X 1200</td>
<td>PRESS ED STEEL FRAME WITH DOUBLE WOODEN SHUTTERS WITH FLY PROOF SHUTTERS</td>
</tr>
<tr>
<td>3</td>
<td>FD1</td>
<td>1200 X 1200</td>
<td>PRESS ED STEEL FRAME WITH DOUBLE WOODEN SHUTTERS WITH FLY PROOF SHUTTERS</td>
</tr>
</tbody>
</table>

DETAIL OF WINDOW/ GRILL & FLY SHUTTER IN OPERABLE PORTION
STAIRCASE RAILING DETAIL

50 MM SHS

25 MM SHS

40 MM SHS

5 nos. 6.2mm eq solid bars
(uniformly distributed)

40 mm SHS

FLOOR LEVEL

100

150

50 MM SHS

15 nos. 12mm bars

2 NOS. SM BARRACKS (G+1)

PROJECT:

02 NOS SM BARRACKS (G+1)

ASSAM RIFLES BATTALION, LUNGLEI, MIZORAM

CLIENT:

DIRECTOR ASSAM RIFLES BATTALION

Drg. No

Nero/Asr/Mizoram/SM Barrack/Arcl/008

DATE:

08/03/2018

SCALE: NTS

Architect:

designers’ guild

e-mail: designersguild@gmail.com

Checked - Surender

Drawn - Harender

Org. No

Nero/Asr/Mizoram/SM Barrack/Arcl/008

(A Government of India Enterprise)

(A MINI RATAN COMPANY)
TITLE: BOX ROOM WALL & CUP BOARD DETAIL

DATE: 08/03/2018

PROJECT: 02 NOS SM BARRACKS (G+1)
ASSAM RIFLES BATTALION, LUNGLEI, Mizoram

CLIENT: DIRECTOR ASSAM RIFLES BATTALION

EXECUTING AGENCY: DESIGNERS' GUILD

ARCHITECT: DESIGNERS' GUILD

DRAWN: HARENDER
CHECKED: SURENDER

SCALE: NTS

Ph: 0120-2559837
E-mail: designersguild@gmail.com
PLAN

1. Chromium plated Knob Light
2. Bracket Light 75 Long Handle
3. Writing Shelf 19th Pre Laminated Particle Board Teak Finish
4. Steel Handle Sliding Drawer for Shoes
5. 1 THK. MS Sheet with Edge Bent Down Like Godreg
6. 1 THK. MS Sheet Made to Shape to Hang Umbrella
7. Bracket Light
8. Angle Iron 25X5X3 MM with One End Sputted
9. 15 Ø Chromium Plated Steel Conduit Pipe with Socket
10. Pegs (3 in One)

SECTION AT AA

SECTION AT BB

ELEVATION

1. 1 THK. MS Sheet Channel Base ENOS Covered
2. 75 MM Thick RCC Slab
3. 50 MM Long Hinges
4. Safety Type Hasp & Staple Chromium Plated 75X40X30

DATE: 08/03/2018

(2 NOS. SM BARRACKS (G+1))
C.I. COVER PLATE

FINISH G.L.

FUNNEL

450X450X450 WATERING CHAMBER

25X5 G.I. STRIP

25 DIA. G.I WATERING PIPE

SOIL

12 MM G.I NUTS AND BOLTS WITH SPRING WATER

600X600X6 MM THICK PLATE

SALT - 150 MM

COAL / CHARCOAL POWDER - 150 M
LIGHTNING ARRESTER LAYOUT

EARTHING AS PER DETAIL FOR LIGHTENING ARRESTER ONLY (LAP)

TESTING JOINT AS PER CPWD SPECIFICATION

G.I. SPIKE

32X6 MM G.I. STRIP

G.I. SPIKE

32X6 MM G.I. STRIP BELOW 500 MM UNDER GROUND AT 1.2 M AWAY FROM BUILDING LINE

G.I. SPIKE

G.I. SPIKE

COVD. AREA GROUND FLOOR = 347.25 SQM

COVD. AREA FIRST FLOOR = 347.25 SQM

COVD. AREA SECOND FLOOR = 347.25 SQM

CLIENT: DIRECTOR ASSAM RIFLES BATTALION

PROJECT: 02 NOS SM BARRACKS (G+1)

ASSAM RIFLES BATTALION, LUNGLEI, MIZORAM

EXECUTING AGENCY:

designed's guild

Architect: Harender

Drawn: Surender

Checked: Surender

Org. No: Nero/Asr/Mizoram/ISM Barrack/Arc 013

Scale: NTS

Date: 08/03/2018
Nero/Asr/Mizoram /SM Barrack/Str/005

FOR SPAN 900-1500mm
DOOR & WINDOW OPENINGS
LINTEL OVER
Harender
OF
TYPICAL SECTION
TYPICAL SECTION
OF
TYPICAL SECTION
Y2
Y4
Y5
3 - 12
C/C
12
C/C
5
12
8   @
SIZE 230 X 450

DATE :

PLINTH BEAM DETAILS

PH:  0120-2559837

(A Government of India Enterprise)

PROJECT:- 02 NOS SM BARRACKS (G+1)

CLIENT:-   DIRECTOR ASSAM RIFLES  BATTALION

4-16
L1
1230
450
530
460
300
460
150
700
800
SL.

TYPICAL STIRRUPS IN ALL BEAMS

TYPICAL STIRRUPS IN ALL BEAMS

300
300
460
460
460
300
460
1390
1190
1150
1160
740
1190
1150
1160
740
1150
1160
740

SL.

480
460
460
460
460
460
460

480
460
460
460
460
460
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FIRST FLOOR FRAMING PLAN

DATE: 08/03/2018

PROJECT:- 02 NOS SM BARRACKS (G+1)
ASSAM RIFLES BATTALION, LUNGLEI, MIZORAM

ARCHITECT:- DESIGNERS' GUILD

LAYOUT OF BEAMS & SLAB
FIRST FLOOR ROOF
SLAB PANEL THICKNESS: 140 MM, UNLESS SPECIFIED
REINFORCEMENT: 8 @ 100 MM, UNLESS SPECIFIED

REMARKS:
STAB PANEL THICKNESS: 160 MM, UNLESS SPECIFIED
FIRST FLOOR PLAN

 Legend:
- Walls
- Roof
- Ground Slab
- Beam
- Column
- Floor
- Windows

NOS = 02

Notes:-
LOCATION OF BEAMS & SLAB

ROOF

LEVEL

SLAB PANEL THICKNESS : 140 MM, UNLESS SPECIFIED

REINFORCEMENT : 8 @ 100 C/C, UNLESS SPECIFIED

NOTES:

- All dimensions are in mm unless specified.
- All schedules are in conjunction with the specified thicknesses.
- All bearings are to be marked on the construction.
- All reinforcing bars are to be provided as per schedule.
- All provisions are to be made as per the drawings.