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Balmer Lawrie & Co. Ltd.

NOTICE INVITING TENDER – TURNKEY DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ROOF TOP GRID CONNECTED 200 kWp SOLAR PHOTO VOLTAIC POWER GENERATING SYSTEM ALONG WITH 5 YEARS COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT AT CFS CHENNAI

Tender Ref No. **BL/LI/CHN/CFS/2025-26/03** **Dated: 03/06/2025**

Contact Person	S. Praveen
Designation	Chief Manager (CFS)
Address	Balmer Lawrie & Co Ltd Container Freight Station, No.32, Sattangadu Village, Manali, Chennai-600068 Phone No 25941813 /25942557
Email ID	praveen.s@balmerlawrie.com
Website	https://balmerlawrie.eproc.in https://www.balmerlawrie.com
Last date and time for submission of Bid & Tender Document	24/06/2025 at 16:00 Hrs.

Disclaimer
The information contained in the Tender document or information provided subsequently to applicants, whether verbally or form by or on behalf of Balmer Lawrie & Co. Ltd. is provided to applicants on terms and conditions set out in this Tender document and all other terms and conditions subject to which such information is provided.

Introduction of the Company

Founded by two Scotsmen, Stephen George Balmer and Alexander Lawrie, in Kolkata, Balmer Lawrie & Co. Ltd. started its corporate journey as a Partnership Firm on 1st February 1867. Traversing the 158 years gone by, today Balmer Lawrie is a Miniratna-I Public Sector Enterprise under the Ministry of Petroleum and Natural Gas, Govt. of India, with a turnover of Rs. 2404 crores and a Profit After Tax of Rs. 203.47 crores. Along with its four Joint Ventures and one Subsidiary in India and abroad, today it is a much-respected transnational diversified conglomerate with presence in both Manufacturing and Service sectors. Balmer Lawrie is a market leader in Steel Barrels, Industrial Greases & Specialty Lubricants, Corporate Travel and Logistics Services. It also has significant presence in most other businesses, it operates in, viz, Chemicals, Logistics Infrastructure, etc. In its entire years of existence, Balmer Lawrie has been successfully responding to the demands of an ever-changing environment, leveraging every change as an opportunity to innovate and emerge as a leader in the Industry. Today Balmer Lawrie has eight Strategic Business Units – Industrial Packaging, Greases & Lubricants, Chemicals, Travel & Vacations, Logistics Infrastructure, Logistics Services, Cold Chain and Refinery & Oil Field Services, with offices spread across the country and abroad. Tender on the specified goods/services has been invoked by the SBU (Logistics Infrastructure) to be delivered in line with the broad framework of the Notice Inviting Tender (NIT).

Contents:

Annexures:

Section 1: NIT (Notice Inviting Tender)

To,
M/s _____

_____

Dear Sir/Madam,

Balmer Lawrie wishes to invite tender for TURNKEY DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ROOF TOP GRID CONNECTED 200 kWp SOLAR PHOTOVOLTAIC POWER GENERATING SYSTEM ALONG WITH 5 YEARS COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT AT CFS CHENNAI.

Tender document can be downloaded from our corporate web site www.balmerlawrie.com and our eProcurement Platform https://balmerlawrie.eproc.in

Request tenderer to put their most competitive bid online as per the terms and conditions stated in the Tender Document. The contents of this tender document are as follows:

1. Interpretation of General conditions of Contract – Section 3
2. General Instruction to tenderer – Section 4
3. General Terms and Conditions-Section 5
4. Mandatory Qualifications for tenderer – Section 6
5. Technical Requirement (Background, Scope, Functional Requirement, Deliverables & Evaluation Methodology) – Section 7
6. Special Terms and Conditions – Section 8
7. All Annexures & Price Bid Format – Annexure 1-7

The tenderer(s) is/are advised to submit its/their most competitive offers, complete in all respects and without any deviation.

The Price bid has to be submitted online only in E-procurement price bid section. The bid of a tenderer will be rejected if he/she submits a hard copy of Price Bid.

Technical Bid shall comprise of (Scan Photocopy/ Supporting documents duly stamped up- loaded for Technical requirement)

i. RFQ Bid form (RFQ bid submission letter) – This should be duly signed by the person authorized to act on behalf of the tenderer.
ii. Signed hard copy of RFQ document duly filled (all pages to be signed and stamped)
iii. All Forms and Annexures attached duly filled and signed and stamped.
iv. Power of Attorney or other proof of authority (or a copy duly attested by a Gazetted Officer) of the person who has signed the tender.
v. Any other documents required in terms of this tender.

Price Bid Submission

Price Bid to be submitted online only in price bid section of e procurement website. **Price bid submitted in technical bid envelope (in e-proc site) or in hard copy will lead to rejection of Tender.**

Tender Submission

The Tenderer would be required to register on the e-procurement site https://balmerlawrie.eproc.in and submit their bids online.

For registration and online bid submission, tenderer may contact the following officials at the HELP DESK of **M/s C1 India** on browsing to the website https://balmerlawrie.eproc.in during business hours:

Contact Person	Email	Contact Number	Days
Tirtha Das (Kolkata)	tirtha.das@c1india.com	+91-9163254290	Monday - Friday
Tuhin Ghosh (Kolkata)	tuhin.ghosh@c1india.com	+91-8981165071	Monday - Friday
Ujwala Rajesh Shimpi (Mumbai)	ujwala.shimpi@c1india.com	+91-11244302000-Ext 114	Monday - Friday
Mr. Lakshmanan P (Chennai)	lakshmanan@c1india.com	+91-8248990022	Monday - Saturday
Helpdesk Support (Kolkata)	blsupport@c1india.com		Monday - Saturday

The tenderer shall authenticate the bid with his Digital Certificate for submitting the bid electronically on e-procurement platform and the bids not authenticated by digital certificate of the tenderer will not be accepted on the e-procurement platform.

All the tenderers who do not have digital certificates need to obtain Digital Certificate **(with both Signing and Encryption Components).** They may contact helpdesk of M/s C1 India or any other DSC service provider.

If any of the documents furnished by the tenderer is found to be false/fabricated/bogus, the tender is liable to be rejected and tenderer is liable for blacklisting besides cancellation of work and criminal prosecution. The undermentioned advisory is to be noted carefully in this regard:

“Submission of authentic documents is the prime responsibility of the bidder. However, BL reserves the right to verify the Pre-qualification Criteria (PQC) documents submitted by the bidder(s). For the purpose of verification, bidders shall submit complete client details with names, address, phone numbers and e-mail id with the understanding that BL may contact the bidder’s client to verify the

PQC documents. Wherever required, bidders may have to submit notarized/verified copy of PQC documents. Non-submission of these documents, if asked for, will lead to rejection of offer. Should BL decide to place the order, pending verification of PQC documents, payment shall be made only after completion of order. If at any stage, the PQC documents are found to be forged/false/fake, suitable penal action shall be taken, which may include offer rejection, EMD forfeiture, termination of order (wherever applicable) and holiday listing/suspension (in GeM) of the bidder/vendor."

The tenderer has to keep track of any changes by viewing the Addendum / Corrigenda issued by the Tender Inviting Authority on time-to-time basis in the e-Procurement platform. There will be no further newspaper advertisement on this. Interested parties have to keep referring to the website for further information. The Organization calling for tenders shall not be responsible for any claims/problems arising out of this.

The tenderer should complete all the processes and steps required for bid submission. The successful bid submission can be ascertained once acknowledgement is given by the system through bid submission number after completing all the process and steps. M/s C1 India or Balmer Lawrie will not be held responsible for incomplete bid submission by the users. Tenderer may also note that the incomplete bids will not be saved by the system and will not be available to the Tender Inviting Authority for consideration.

Neither the Organization (Balmer Lawrie & Co. Ltd.) nor the service provider (M/s C1 India) is responsible for any failure or non-submission of bids due to failure of internet or other connectivity problems or reasons thereof.

Successful tenderer shall be responsible for completion of the contract in all respects. Balmer Lawrie reserves the right to accept or reject any tender or portion of tender, or reject all tenders without assigning any reasons, thereof.

This is merely a request for quotation and carries no commitment / obligation to award the contract. RFQ does not obligate BL to pay any costs incurred by respondents in the preparation and submission of the proposal. Furthermore, the RFQ does not obligate BL to accept or contract for any expressed or implied services.

Please acknowledge receipt and confirm your participation in this tender.

Thanking you,
Balmer Lawrie & Co. Ltd

S. Praveen
Chief Manager (CFS)

Section 2: Tender Schedule

S. No.	Particulars	Description
1.	Tender reference number	BL/LI/CHN/CFS/2025-26/XX
2.	Earnest Money Deposit	Rs. 58150/- (Rupees Fifty Eight Thousand One Hundred Fifty only)
3.	Date of Publishing of Tender document on the website	03/06/2025
4.	Pre-bid Meeting	N/A
5.	Last date and time of receiving applicant's clarifications in writing	19/06/2025 at 16:00 hrs.
6.	Last date and time for submission of Tender/Bid	24/06/2025 at 16:00 hrs.
7.	Date and time of Technical Bid Opening	24/06/2025 at 16:30 hrs.
8.	Validity of Price / Quoted Commercials	120 days from the date of opening of the price bid
9.	Place of Submission of Bid	**Technical & Price Bid:** https://balmerlawrie.eproc.in

"Turnkey Design, Supply, Installation, Testing & Commissioning of Roof Top Grid Connected 200 kWp Solar Photo Voltaic Power Generating System along With 5 Years Comprehensive Annual Maintenance Contract at CFS, Chennai" is not available in GeM. Balmer Lawrie & Co Ltd has no objection in providing this information for making available such products/services on GeM.

Report ID: GEM/GARPTS/26052025/GVG7V93ETA43

Section 3: Interpretation of General Conditions of Contract

1. General

The following general conditions shall be read in conjunction with the other conditions of contract, special conditions of the contract, Technical Specifications etc., and shall be considered as an extension and not in limitation of the obligations of the Contractor.

2. Discrepancy in Tender Document

Should there be any discrepancy, inconsistency, error or omission in the Tender Documents, the tenderer shall bring it to the notice of the BL Officer for necessary clarifications/actions. In the event such matters are referred to later, the decision of the BL Officer directing the manner in which the work is to be carried out, shall be final & conclusive, and the tenderer shall carry out the work in

accordance with this decision.

3. Tenderer

The tenderer means the firm or company with whom the order is placed and shall be deemed to include the tenderer, successors, representatives, heirs, executors and administrators.

Section 4: General Instructions to Tenderer

1. Ethical Standard

A. Tenderer are expected to observe the highest standard of ethics during the procurement and execution of this Contract. In pursuit of this policy, BL will reject the proposal for award if it determines that the tenderer being considered for award has engaged in corrupt or fraudulent practices in competing for the Contract.

For the purposes of this provision, the terms set forth below are defined as follows:

(i) "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action in the procurement process or in Contract execution; and

(ii) "*Fraudulent practice*" means a misrepresentation of facts in order to influence the procurement process

(iii) *"Collusive practice"* means designs to establish bid prices at artificial, non-competitive levels to deprive BL of the benefits of competition.

B. Tenderer should not have been blacklisted by any CPSE/ Central Government Organization. A declaration in this respect must be submitted by the tenderer on their letter head duly signed by the Authorised Signatory of the tenderer.

2. Clarifications of bidding documents

Tenderer can seek any clarification on RFQ document through written mail to praveen.s@balmerlawrie.com, roy.jb@balmerlawrie.com, sanyal.s@balmerlawrie.com (for technical only), gautham.s@balmerlawrie.com as per the Pre-Bid Clarification Dates mentioned in this tender, clearly mentioning the tenderer name, tender no.

BL may at its sole discretion amend the RFQ documents at any time prior to the deadline of submission of the RFQ bid; however, in case of such amendment, the RFQ submission date may be extended at the discretion of BL. Amendments made prior to the submission of RFQ bid will be communicated in the form of Corrigendum to the RFQ documents.

3. Conditions for bid submission

The tenderer shall upload its e-bids in the form of scanned photocopies prescribed in the RFQ documents. The tenderer shall sign on the statements, documents, certificates, owning responsibility for their correctness and authenticity.

Extension of RFQ bid submission:

BL may, at its discretion, extend this deadline for submission of RFQ bids, in which case, all rights and obligations of BL and tenderer will thereafter be subject to the deadline, as extended. Information on deadlines would be published in the site where the tender has been published.

4. Related Party Disclosure Clause

A Clause to be inserted in all tender documents, whereby, the bidder is required to state "Whether any of the Directors of BIDDER Company is a relative of any Director of BL or the BIDDER is a firm in which any Director of BL or his/her relative is a Partner or the BIDDER is a Private Company in which any Director of BL is a member or Director.

5. Bid Price

The e- bid price must be prepared in accordance with the instructions specified below:

a. The price bid should be completed as per the price bid format only in **ONLINE MODE** in PDF format.

b. The total price must include all incidental costs associated with the provision of goods and services including travel, transportation, communications, fees, licence cost, cost of service from 3rd party for requested integration etc. imposed on the tenderer in India or any other country. There should be no other hidden costs for items quoted & no additional expense would be borne by Balmer Lawrie except quoted price. The offer must be made in Indian Rupees only and the offer should include all other charges, if any. Applicable taxes should be separately disclosed.

c. Quoted commercial / Rates should be valid for the entire contract period from the starting date of contract with tenderer. Price bid should be quoted only in e-procurement site as per format mentioned in Annexures.

d. The bidders to quote competitive prices, considering the fact that price negotiations, if required, will be held with the lowest bidder only.

6. Modifications and withdrawals of bids

The tenderer may modify or withdraw its bid after submission, provided that written notice of the modification or withdrawal is received by BL prior to the deadline prescribed for bid submission, as mentioned in the Tender Document.

7. Bid opening

Opening of Bids by BL

a. The tender will be opened on the same day or the day appointed for the same by BL. Offers received without EMD, wherever applicable, shall be rejected.

b. "Price Bid" shall not be opened by BL on the same day and same shall remain unopened in the e-procurement site until such time that technical evaluation is completed.

8. Preliminary examination of bids

a. BL will examine the bids to determine whether they are complete, whether the documents have been properly signed and whether the bids are generally in order. Any bids found to be non-responsive for any

reason or not meeting the criteria specified in the Bidding Documents will be rejected by BL and shall not be considered further.

b. Prior to the detailed evaluation, BL will determine as to whether each bid is complete and is responsive to the Bidding Documents. For the purposes of this determination, a responsive bid is one that conforms to all the terms, conditions and specifications of the Bidding Documents.

9. Clarifications

During the bid evaluation, BL may at its discretion, ask the tenderer for a written clarification of its bid, which the tenderer is bound to provide within a specified time, failing which, BL may reject the bid at its discretion.

10. Award of Contract/ Purchase Order

a. Balmer Lawrie reserves the right to accept or reject any first (original) or updated bid, and to annul the bidding process and reject all bids at any point of time, prior to award of contract, without thereby, incurring any liability to the affected tenderer, or any obligation to inform the affected tenderer of the grounds for such action.

b. BL may at its own discretion cancel the tender without assigning any reason to the tenderer.

c. Contract will be awarded to the vendor who quotes the lowest price. Kindly refer to Annexure - 3 Price Bid for L1 calculation.

d. The purchase function and the e-Procurement portal reserves the right to provide access to L1 bidder/non-L1 bidders' technical/financial bids to other participating bidders, as the case may be, in addition to providing the comparative summary of Technical and Financial bids of all participating bidders, to one another.

e. BL shall place the work order on the overall Lowest Quoted Bidder based on estimated quantity as per scope of work and rates quoted for the tender and as such it would be in the interest of the bidders to quote their most competitive price.

f. Bidders may note that rates should be quoted based on the standard payment terms as mentioned in the Tender and evaluation of the bids will be done accordingly.

g. Negotiations will not be conducted with the bidders as a matter of routine; however, BL reserves the right to conduct price negotiations. Negotiations, if held will be only with the lowest L1 bidder. In case of negotiation the Tenderer should send the confirmation of outcome of such negotiation in writing so as to reach the concerned office of Balmer Lawrie within 3 days from the date of negotiation/the time stipulated whichever is earlier.

h. The contract will be awarded to the vendor who quotes the overall lowest price for price bid schedule "A". Price bid schedule "B" are only for rate purposes. Kindly refer to Annexure 3 - Price Bid for L1 Calculation.

11. Commencement of Work (BL Intends to issue PO to the successful tenderer)

The Contractor shall provide the service / material on specific intimation from Balmer Lawrie in writing or the time indicated in the PO and shall proceed with the same with due expediting, without delay. If the contractor fails to commence the work as per the terms of the Order/ Contract, Balmer Lawrie, at its sole discretion will have the right to cancel the Order/ Contract.

12. Bid Evaluation Criteria

a. In case of dual bids, BL will evaluate the technical bids on the basis of MQCs or Mandatory Qualification Criteria set out in the NIT documents.
b. BL will examine the bids to determine whether the bids are complete as per checklist and / or as per requirements of Bidding Document.
c. BL will examine the bids to determine whether they are complete, whether the original bidding document and Addendum / Corrigendum if any, have been returned with signed all the pages and the bids are generally in order.
d. BL will examine the tenderer's qualification and the bids of only those tenderers who meet the qualifying requirements shall be taken for detailed evaluation.
e. The bids are required to be on ZERO DEVIATION. Techno-commercially acceptable Bids shall be considered for Price Bid opening and evaluation only.
f. The bid evaluation committee shall prepare a comparative statement in tabular form in accordance with the rules, along with its report on evaluation of financial Bids (based on signed, stamped and uploaded by bidders) and determine the lowest offer for acceptance.
g. It shall be ensured that the lowest bid /offer is justifiable looking at the prevailing market rates of the goods /services.

13. Expenses to be borne by tenderer

All expenses in preparation and submission of bids and visits to the office or any place in connection with the preparation of Bid shall be borne by tenderer. BL, under no circumstance, shall be held responsible or liable for these costs, regardless of the outcome of the Bidding process.

14. Language of Bid

The bid, prepared by the tenderer, including all correspondence etc. relating to his offer/ bid shall be in ENGLISH language only.

15. Transfer of bid document

Transfer of bids submitted by one tenderer to another, is not permissible.

16. Invoices and Payments

a. The Contractor's request for payment shall be made to Balmer Lawrie in writing, accompanied by an invoice for the services rendered or material supplied describing, as appropriate, the milestone completed. The Invoices will have to be raised according to the explicitly agreed rates and payment terms of the contract. The Contract Price shall be paid in Indian Rupees in accordance with the payment schedule.
b. The tax element applicable from time to time to be shown separately in the invoice.
c. Payments shall be made promptly by Balmer Lawrie as per payment terms on submission of an original invoice along with the stipulated acceptance/delivery certificate signed by competent authority/ Project Coordinator/ Authorized Representative, unless there is a clarification that is sought by Balmer Lawrie within this time.
d. Payment will be done via NEFT mechanism only.

e. Payments, if any, shall be made subject to deductions of TDS and such other taxes as may be applicable from time to time.

f. BL may, at any time, by a written order given to a tendering party, make changes within the general scope of the Contract related to terms & references, enlarging or reducing the scope or specifications. If any such change causes an increase or decrease in the cost of, or time required for the execution of the work, an equitable adjustment shall be made in the contract price or delivery schedule, or both, and the work order shall be amended accordingly.

17. Earnest Money Deposit [EMD]

Payment of Interest Free EMD of Rs. 58150/- [Rupees Fifty Eight Thousand One hundred Fifty only] by online Bank Transfer by NEFT/RTGS/IMPS mode in favour of BALMER LAWRIE & CO LTD on available link in e-portal. In case of difficulty in making payment on link, please contact HELPDESK. Copies of payment advice should be scanned and uploaded at e-proc site before bidding. However, submission of EMD is exempted for Small Scale Units registered with National Small Industries Corporation (NSIC) & MSE units registered under MSME on submission of valid copy of registration certificate. registered MSEs shall be exempted from the need to furnish the EMD subject furnishing their UDYAM Registration details.

If a bidder withdraws its bid within validity period for any reason, its bid shall not be further evaluated, and suitable penal action taken which may include EMD forfeiture (if any) and/or holiday listing action as per the discretion of BL.

EMD is liable to forfeiture in the event of:

a) Withdrawal of offers during validity period of the offer.
b) Non-acceptance of orders by the Bidder within the stipulated time after placement of LOI / order.
c) Any unilateral revision made by the Bidder during the validity period of the offer.
d) Non-execution of the prescribed documents after acceptance of the contract.
e) Non-submission of Security Deposit within 15 days of placement of LOI/WO.

18. Security Deposit / Performance Bank Guarantee

A non-interest-bearing Security Deposit (either in the form of Demand Draft/Pay order or RTGS/NEFT/IMPS transfer or by way of Bank Guarantee issued by any schedule bank in favour of Balmer Lawrie & Co Ltd) of 5% of the total Basic Contract value (i.e. Order value excluding taxes) will be required to be deposited with the Company by the successful tenderer within 15 days of getting work order from the Company. This security deposit will be refundable after 6 (six) months on completion of defect liability period of 12 months from the date of successful completion of work / contract period /extended contract period. In the event of non-performance of the contract, the security deposit will be forfeited and the contractor will be blacklisted for future tenderer. EMD received from the concerned tenderer may be adjusted towards the SD requirement or recovered from his future bills in the event of non – submission of the same by the L1 tenderer. Security deposit has to be paid by MSE vendors too.

The Security Deposit / Retention Money shall remain at the entire disposal of Owner as a security for satisfactory execution and completion of the Work(s). Owner shall be at liberty to deduct and appropriate

from the Security Deposit / Retention Money such damages (liquidated or otherwise) and other dues and recoveries from Bidder under this Contract and the amount by which Security Deposit / Retention Money is reduced by such appropriations, will be made by further deductions from Bidder's subsequent bills to that extent as to make up the Security Deposit / Retention Money.

19. Retention Money Withheld

Please Refer Payment Schedule page no. 16 under General Terms and Conditions. The retention money may be refunded to the contractor on completion of work against submission of Performance Bank Guarantee in the prescribed format, issued by Scheduled Commercial Bank for defect liability period twelve (12) months. On extension of the contract, the PBG must be extended by the extended contract period covering defect liability period of twelve (12) months plus Three (3) months for same value.

Section 5: General Terms and Conditions

1. The following terms shall have the meaning hereby assigned to them except where the con- text requires otherwise: -

a) Balmer Lawrie & Co. Ltd shall mean a Company registered under the Indian Companies Act 1913 having its Registered Office at 21, N.S Road, Kolkata 700001 and its Authorized Officers or other Employees authorized to deal with this contract.

b) "TENDERER" shall mean the individual, or firm who enters into this Contract with Balmer Lawrie and shall include their executors, administrators, successors and assignees.

c) "SITE" shall mean the place or places, including project site, where the system will be delivered and installed.

d) " CONTRACT" or "CONTRACT DOCUMENT" shall mean and include the agreement, the work order, the accepted General Terms and Conditions of Contract, Special Conditions of Contract, Instructions to tenderer, etc.

e) Any conditions or terms stipulated by the tenderer in the tender documents or subsequent letters shall not form part of the Contract unless specifically accepted in writing by Balmer Lawrie and incorporated in the Agreement.

f) "TENDER SPECIFICATIONS" shall mean the Scope of Work, Special Instructions/ Conditions, Technical specifications/ requirements, etc., pertaining to the work and any other relevant reference in the Tender Document for which the tenderer is required to submit its offer.

g) "SINGULAR AND PLURAL" words, etc., carrying singular number shall also include plural and vice versa, where the context so requires. Words imparting masculine gender shall be taken to include the feminine gender and words imparting persons shall include any Company or Association or Body or Individuals, whether incorporate or not.

h) "VALIDITY OF THE CONTRACT" the contract will remain valid till all the activities specified therein are completed in all respects to the satisfaction of Balmer Lawrie.

i) "COMPLETION OF THE CONTRACT" The contract will be treated as complete on full and final settlement of all Bills / invoices raised under the contract with no claim on either side.

2. Complaints, notices, communications and references shall be deemed to have been duly given to the

Contractor, if delivered to the Contractor at his declared address or to his authorized agent / representative, either through physical mode or electronically.

3. Risk Purchase

Balmer Lawrie reserves to itself the following rights in respect of this Contract without entitling the Contractor for any compensation.

a) If at any time, during the validity of the Contract, the contractor fails to render all or any of the goods and/or services required under the scope of work of the contract satisfactorily in the opinion of Balmer Lawrie, whose decision shall be final and binding on the contractor, Balmer Lawrie reserves the right to get the work done by other parties or departmentally, at the cost and risk of the contractor.

b) To recover any money due from the Contractor, from any moneys due to the Contractor.

c) To claim compensation for losses sustained, including Balmer Lawrie's supervision charges & overheads, in case of termination of Contract.

4. Observance of Local Laws:

a) The Contractor shall comply with all applicable Laws, Statutory Rules and Regulations, etc.

b) The Contractor shall pay all taxes, fees, licence charges, deposits, duties, tolls, royalties, commissions, or other charges, that may be leviable on account of any of the operations connected with the execution of this Contract.

c) The Contractor shall be responsible for the proper behavior and observance of all regulations by the staff deployed.

d) The contractor has to manage the local authorities in case of any requirement asked by the local authorities.

5. Force Majeure:

a) The following shall amount to force majeure conditions: -
Acts of God, act of any Government, war, blockades, sabotage, riots, civil commotion, insurrection, terrorist acts, acts of public enemy, floods, storms, washouts, fire, explosion, landslides, lightning, cyclone, earthquake, epidemic, quarantine restrictions, arrest and restraints of the Government, necessity for compliance with any court order, law ordinance or regulations promulgated by any Governmental Authority having jurisdiction, either federal /state/civil or military, strikes or other industrial disturbances, lockouts and other similar causes /events over which the Contractor has no control.

b) If the Contractor undergoes delay in the due execution of the contract, due to delays caused by force majeure conditions, as defined above, the agreed time of completion of the work covered by this contract may be extended by a reasonable period of time pro- vided notice of the happening of any such cause / event is given by the contractor to Balmer Lawrie within 14 days from the date of occurrence thereof.

c) The Contractor by the reasons of such events, shall neither be entitled to terminate this Contract nor shall

have any claim for damages against Balmer Lawrie, in respect of such non-performance or delay in performance and deliveries under the Contract, and the same shall be resumed as soon as practicable, after such event has come to an end or ceased to exist. The decision of BL, as to whether the deliveries have been so resumed or not, shall be final and conclusive.

d) Force Majeure conditions will apply on both sides.

6. Prevention of Corruption

a) Canvassing in any form or any attempt to influence directly or indirectly any official of Balmer Lawrie will lead to rejection of the bid.

b) Balmer Lawrie shall be entitled to cancel the Contract and recover from the Contractor, the amount of any loss resulting from such cancellation, if the contractor has offered or given any person any gift or consideration of any kind, as an inducement or reward for doing or intending to do any action in relation to the obtaining or the execution of the Contract, or any other Contract with Balmer Lawrie, or for showing or intending to show favor or disfavor to any person in relation to the Contract with Balmer Lawrie, if the like acts shall have been done by any persons employed by him or acting on his behalf, whether with or without the knowledge of the Contractor, in relation to this, or any other Contract with Balmer Lawrie.

7. Arbitration

Jurisdiction, Governing Law and Arbitration Clause:

This Agreement, and any dispute or claim (including non-contractual disputes or claims) arising out of or in connection with it or its subject matter, shall be governed by and construed in accordance with the laws of India.

Dispute Resolution: All disputes, differences and questions of any nature including interpretation of this Agreement or arising out of or in connection with this Agreement or as to the rights, duties or liabilities under it of the parties shall be referred to Arbitration. The procedure of the Arbitration shall be governed under the Arbitration and Conciliation Act, 1996 (as amended) and the rules thereunder as may be in force from time to time. The Arbitration proceedings shall be conducted in English language. The Seat of Arbitration shall be at Kolkata. The fees of the arbitrator will be divided equally. The Sole Arbitrator shall be appointed from the panel of arbitrators which shall be provided by the Balmer Lawrie & Co. Ltd. to the vendor and the arbitrator shall assign reasons to the award.

Governing Law and Jurisdiction: The construction validity and performance of this Agreement shall be governed in all respects by the laws of the Republic of India. Subject to the above clause, parties irrevocably submit to the exclusive jurisdiction of the Courts at Kolkata only and waive any objection to proceedings in such Courts on the grounds of venue or on the grounds that the proceedings have been brought in an inconvenient forum. Government of India shall not be made party to any such dispute.

The parties hereby waive their right to any form of recourse against an award to any Court or other competent authority, insofar as such waiver can validly be made under the applicable law.

AMRCD Clause:

"Any dispute, question, claim or difference arising out of or concerning this Agreement between the parties shall be settled through mutual negotiation by the parties and parties shall make all endeavours to settle the same amicably. In case the mutual negotiation fails, the dispute shall be referred to Administrative

Ministry for Resolution of CPSEs Disputes (AMRCD), wherever applicable.
If any dispute or difference relating to the interpretation and application of any provision of this agreement remains unresolved, such dispute or difference 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."

The contract shall continue to be operated during the arbitration proceedings unless otherwise directed in writing by Balmer Lawrie or unless the matter is such that the contract cannot be operated till the decision of the arbitrator is received.

8. Laws Governing the Contract: (*applicable only in case of manpower contracts)*

a) If applicable, the Contractor shall obtain the required Contract Labour Licence issued by the Authority designated under the Contract Labour (Regulation & Abolition) Act, 1970. The Contractor shall not undertake or execute any work through contract labour, except under, and in accordance with the licence issued on that behalf by the Licensing Officer.

b) The Contractor shall not undertake or execute or permit any other contractor or sub-contractor to undertake or execute any work on the Contractor's behalf through contract labour, except under, and in accordance with the licence issued on that behalf by the Licensing Officer or other Authority, prescribed under the Contract Labour (Regulation & Abolition) Act, 1970.

c) The Contractor will maintain all the statutory required registers, returns of the workmen engaged by him, as prescribed under the Act. Contractor would also submit returns through online GoI portal (Shram Suvidha) as per the applicable Act, rules and norms.

d) A copy of the above wage-cum-master register has to be submitted along with each month's bill. Payment will not be made till the Contractor submits the aforesaid register. The Contractor will retain the original wage-cum-master register with his Manager/Supervisor at the site office and should produce the same for inspection by the authorized representative of the Company, and/or statutory representative.

e) Notices mentioning hours of work, period of wage payment, rates of wages, etc. as required under the relevant Act would also be displayed, and copies as required, would be sent to the concerned statutory authorities by the Contractor.

9. Indemnity:

The Contractor shall indemnify and keep indemnified Balmer Lawrie of all losses, claims, etc. arising out of any of his acts or out of the acts of his agents or associates or servants or suppliers during the execution of the contract.

10. Discrepancy in Words & Figures quoted in offer

Where the amount is stated differently in words and figures – the amount written in words shall be the amount undertaken to be quoted in offer.

11. Anti-Profiteering Clause

Section 171 of the CGST Act, 2017, provides that, any reduction in the rate of tax on any supply of goods or

services or the benefit of input tax credit, shall be passed on to the recipient by way of commensurate reduction in prices. Vendors to take note of the same and pass on such benefits to BL, while quoting their price at the time of execution of the Contract.

12. <u>Penalty due to Non – Performance or non -adherence to safety measures</u>:

In case of non-performance of vendors of the contractual obligation of work without the consent of BL, the same will attract penalty clause, by which BL will charge at a prescribed rate on the value of the bill(s), and subject to a maximum amount as per the terms of the NIT. This amount will be deducted from the bill(s) submitted.

13. Payment Schedule –

Kindly refer Price Bid format in Annexure for details:

S. No.	Deliverables	Payment Terms
1	Submission of single RA Bill after completion of entire supply items along with GST Invoices, Goods Receipt Note/ Challan certified by BL's representative, and any other required supporting documents.	**70% (Seventy percent)** will be payable by the owner against supply of item wise receipt of materials at site on pro – rate basis as certified by BL official in-charge.
2	Submission of single RA Bill along with GST Invoices, Test Certificates of Materials, Measurement Sheet and any other required supporting documents etc.	**30% (Thirty percent)** will be payable by the owner against Installation, Testing and Commissioning of solar plant as certified by BL official in-charge.
3	Retention Money	**10% (Ten percent)** of total basic value excluding AMC will be retained from **every RA Bill** as Performance Guarantee/Retention Money & shall be released after 6 (Six) years [i.e. after expiry of 5 year AMC period & 1 year Defect liability period] from date of commissioning, Issuance of Completion certificate by BL and also after receipt of required statutory approvals by BL, as applicable or the same can be released after commissioning/issuance of Completion certificate by BL & submission of PBG of equivalent amount valid for 6 (Six) years [i.e. after expiry of 5 year AMC period] from the date of commissioning/ issuance of Completion certificate and also after receipt of required statutory approvals by BL.

4	**Security Deposit**	Within fifteen (15) days, the contractor shall submit to the Owner an Initial Security Deposit amounting to 5% of the total basic contract value (excluding GST). For further details, refer to Clause 18 on Page 11 of the General Instructions to Tenderers.
5	**AMC for 5 years** The AMC charges will be paid on a pro-rata basis against quarterly invoices submitted after completion of inspection/maintenance visits and submission of the corresponding inspection report, as specified in the tender, following all four Preventive Maintenance visits.	100% upon submission of the invoice with Preventive Maintenance and Repair Maintenance reports at the end of the financial year.

Note:

1) All payments will be made in Indian Rupees.
2) This project is being 'Works Contract Services', 12% GST will be applicable on 70% of the total contract value (Supply portion) and 18% GST on the remaining 30% value of total contract value (Service portion). A successful bidder has to raise invoices accordingly.
3) All payments will be made within 20 days from the date of certification by BL official-in-charge.

14. Price

Tenderer shall quote a firm price for the total goods/services deliverable, giving applicable tax breakup which includes implementation, travelling and accommodation (if any). Balmer Lawrie may ask for the activity wise break-up of the price after opening the price bid. No additional expense would be borne by Balmer Lawrie except for the quoted price.

Price should be quoted only in e-procurement site. Format for reference is attached as Annexure-3.

15. Delivery Timeline

Delivery /Commissioning/Installation of goods/ service needs to be done by the successful tenderer within the stipulated time as provided in special terms and conditions mentioned in this tender document.

Section 6: Mandatory Qualification Criteria for tenderer

Tenderers who wishes to bid should conform to the following criteria as of Tender Publication Date. Price bid opening will be done only for the tenderers who comply with the Mandatory Qualification Criteria.

Parameter	Requirement Description	Supporting documents To be submitted

Legal Entity	Whether the entity is a body corporate, or a Partnership Firm, or a Sole Proprietorship Concern, LLP etc. and the date of incorporation	Certificate of Incorporation/ Partnership Deed/ Licence of Shops and Establishment Act, LLP Deed/ GST registration etc.
Power of Attorney	Name and designation of the person authorized to sign the Bid / proposal and all other documents incidental to the RFP.	On Company Letter Head (Signed and Stamped)
Blacklisted	An undertaking (self-certified) that the tenderer has not been blacklisted by a Central/State Government institution and there has been no litigation with any Government Department on account of similar services.	Undertaking (Signed and Stamped)
Local content	An undertaking (self-certified) on the local contents as per Annexure	Undertaking (Signed and Stamped)
Work Experience	The tenderer / OEM {themselves or through re-seller(s)}, should have executed projects, either completed or at least 90% completed, in Design, Engineering, Procurement & Supply, Installation, Testing and Commissioning of PEB Roof Mounted Solar PV Plant to any Central / State Govt Organization / PSU / Public Listed Company / Private Company during the last 7 years ending on the last day of the month immediately preceding the month in which the original bid submission end date falls, considered as hereinunder:: (i)Single order of at least ₹ 93.50 Lakhs; or (ii)Two orders of at least ₹ 58.50 Lakhs; or (iii)Three orders of at least ₹ 47 Lakhs Basic executed value (without GST) shall be considered for matching with above mentioned PQ criteria. In case of startups with valid registration certificate with request for exemption should be submitted. Startup firm must be in existence of minimum period of 1 year on the date of due bid submission.	Purchase Order, Completion Certificate / On-going certification (Signed & Stamped). The Startup registration certificate must be duly signed and stamped by an authorized representative of the bidder and submitted as part of the technical bid.
Financial Stability - Tenderer	The minimum average annual financial turnover of the tenderer during the last three years, should be more than ₹ 35 Lakhs (Rupees Thirty Five Lakhs) (FY 2021-22, FY 2022-23, FY 2023-24).	Submit Audited Balance Sheet and P&L statement/ Turnover Certificate from CA (with valid UDIN) for last three years in support of turnover criteria.

Proposed Technical documents & Drawings	1) Datasheets of Solar Modules (Only 1 make to be selected). 2) Datasheets of Solar String Inverters (Only 1 makes to be selected) 3) Proposed SLD 4) Proposed Solar Module Layout	Submit the documents duly signed and stamped
Comprehensive	Tenderer / OEM has to give an undertaking that after expiry of warranty period, it will provide Comprehensive Maintenance Service (including breakdown maintenance) for next 5 years for the offered products on issuing the work order.	On Company Letter Head (Signed & Stamped)
Integrity Pact	All tenderers have to sign the Integrity Pact (IP) with BL as per the format attached. Bids without a signed Integrity Pact will be rejected. Independent External Monitors (IEMs) details (names and email ids) are as follows: **Name : Shri Sunil Kumar Gupta** **e-mail id :** sunilgupta0603@gmail.com **Name : Shri Arvind Gupta** **e-mail id :** arvindgupta1961@gmail.com A person signing the IP shall not approach the courts while representing the matters to IEMs and he/she will await their decision in the matter.	Duly signed and sealed Integrity Pact
Location	Tenderer / OEM should give an undertaking that that they will provide service & support on-site (CFS, Chennai) for up to 1 year defect liability period and 5 years from the date of installation of the quoted product on issuing work order.	Self-Declaration on company letterhead (Signed & Stamped)
PF / ESI Registration	Bidder should have ESI/PF registration. In case PF/ESI presently not applicable to bidder, In such case a declaration should be submitted. However, Workmen compensation policy should be submitted before start of the work and declaration on this should be provided with technical bid.	PF / ESI Registration certificate / Declaration
Company's Permanent Account No . & GST No.	Whether the Company is tendering the current PAN Card and GST Registration No.	Copy of PAN Card & GST Registration No.

Section 7: Technical Requirement

1. **Background**

Balmer Lawrie & Co. Ltd (BL), a Govt. of India Enterprise under the Ministry of Petroleum & Natural Gas is a professionally managed multi-location company with business spanning both in manufacturing and service sectors. Please visit www.balmerlawrie.com for details of various businesses and locations of the company.

Balmer Lawrie has three state of the art Container Freight Stations (CFSs) at Kolkata, Mumbai and Chennai that form part of SBU: Logistics Infrastructure (LI). The warehousing and distribution facilities at Kolkata and Coimbatore are testimony to Balmer Lawrie's ability to successfully handle a whole range of cargo promptly and safely. The CFSs are wholly equipped for secure handling and on time delivery of cargo, whether it is over dimensional, perishable, temperature sensitive or standard cargo.

SBU (LI) intends to install roof top grid connected 200 kWp Solar Photovoltaic Power Generating system along with 5 years comprehensive AMC contract at Container Freight Station Manali, Chennai 600068. The assignment under this tender shall constitute design, supply, testing and installation of entire solar plant along with necessary wok as mentioned in scope of work and BOQ. Bidders fulfilling eligibility criteria with adequate experience as per bid document may participate in the tender. The bidder, at the Tenderer's own cost/responsibility is compulsory to visit and examine the site of Container Freight Station operation its surroundings to obtain all information that may be necessary for preparing the bid for entering into a contract.

Site Address:
BALMER LAWRIE & CO. LTD. CONTAINER FREIGHT STATION
No. 32, Sattangadu Village, Manali, Chennai – 600068.

The bidders are requested to carefully go through the entire tender document including format for the price bid and accordingly quote the price. Also required documents should be uploaded for technical qualifications.

2. Requirement Synopsis

The scope of Supply & Work includes all design, engineering, procurement & supply of equipment and materials, testing at manufacturers works, inspection, packing and forwarding, supply, receipt, unloading and storage at site, preparation of site, associated civil works, services, permits, licences, Govt statutory, legal and other applicable requirements and approvals, installation, testing and commissioning of Roof Top Grid Connected Solar PV Power Plant at Balmer Lawrie, Container Freight Station, Manali, Chennai.

Work covered in this tender document shall generally be as detailed herein below. However, the contractor shall be responsible to complete the work in all respects and in doing so provide/supply all material and facilities which may not be covered below but nevertheless are required to complete the work envisaged with the exception of only such items as have been specifically excluded from the contractor's scope.

3. Scope of work

1. The Roof Top Solar PV Grid Interactive Power system will be installed on the Sloping Roofs of the new PEB shed warehouse at M/s Balmer Lawrie & Co Ltd CFS, Manali, Chennai. The DC Capacity of the Solar PV Plant should be 200 kWp.

2. Total capacity of the PV Modules to be supplied for the Grid connected Solar Power Plant project is minimum 200 KWp (DC) for PEB roof mounted which is the rated capacity of all solar PV module under supply as per relevant IEC standards under Standard Temperature Condition (STC) tested at Factory.

3. The bidders are advised to visit the site of proposed Solar Plant to assess the quantum of work before submission of their offer.

4. The scope of work and services includes but is not restricted to the following:

5. Design, Supply, Installation, Commission testing of the Roof Top Grid Interactive Solar PV Plant

a) Solar Modules of adequate quantity to meet the design requirements.

b) The Solar Module Mounting structure is adequately designed to meet the technical requirements along with necessary mounting rails, clamps, nut bolts etc. Application of silica sealant on each screw used, to prevent water ingress.

c) On Grid String Inverters with Surge Protection Devices (Class-II SPD) either within the inverter or externally mounted in DC Distribution Box (DC DB).

d) Solar DC Copper Cables

e) LT Power Cables including end terminations and required accessories for AC & DC power.

f) Output from Solar String Inverters shall be fed to the Owner's Main LT Panel through ACDB installed near the Solar Plant and through four pole MCCB of suitable current rating installed in the ACDB. For this purpose, the power may be fed to 320 Amp outgoing feeder in Main LT panel. The proposed solar plant cable (3.5C x 240 sq. mm tentative) will be connected to the feeder.

g) 4 core copper cables to be provided from Inverter to Inverter disconnect Panels. All output cables from Inverter disconnect panels to Solar LT Panel should be XLPE Aluminium Armored cables.

h) Solar L.T Panel with Phase Indication Lamps, Required capacity MCCB's for incoming and outgoing cables. Digital Panel Meter of 0.5 class accuracy with PF, Voltage, Current, kWh, kW etc should be provided.

i) Solar Metering Panel with necessary 4 pole MCCB and CT and Solar Generation Meter as per TANGEDCO specifications.

j) Since spare feeder is not available in main LT panel, the bidder should provide a separate feeder panel in the main LT panel room of the Balmer Lawrie.

k) Remote Monitoring System with Communication cable etc.

l) Data logging system with remote monitoring facility shall be provided.

m) Lighting Arrestor and Protection system, earthing kits and earthing systems shall be installed at the plant area as required as per relevant IS.

n) PVC pipes, cable conduits, cable tray and its coverings shall be provided as required by design.

o) Water piping along with module cleaning equipment including hose pipes and water outlets at convenient locations for regular cleaning of the Solar PV Plant. The client will provide water at a single point on the ground floor of the building. The bidder should provide 2 HP Mono Block with water line UPVC system for maintaining the pressure for auto clean system of solar panels.

p) Fire extinguishers, danger plates, name board etc to be provided as per Electrical Standards.

q) Safety sign as per relevant IS and schematic diagram as per approved design shall be installed at each site.

r) The specification mentioned for all the equipment which include Solar modules, PCU, combiner boxes, DC cables, module mounting structures, CT, PT, LT cables, interfacing panels, switchgears, energy meters, water sprinkler system, safety net, safety ladder and other associated equipment etc., to complete the solar PV power generation and evacuation to the designated LT PCC.

s) Adequate capacity of SPV module, PCUs, Junction boxes etc. to ensure generation of power as per design

estimates. This is to be done by applying liberal de-rating factors for the array and recognizing the efficiency parameters of PCUs, transformers, conductor loss etc.

t) Adequate capacity of SPV module, PCUs, Junction boxes etc. to ensure generation of power as per design estimates. This is to be done by applying liberal de-rating factors for the array and recognizing the efficiency parameters of PCUs, transformers, conductor loss etc.

u) Use of equipment and systems with proven design and performance that have high available track record under similar service conditions.

v) Selection of the equipment and adoption of a plant layout to ensure ease of maintenance.

w) The power plant must operate in parallel with the grid system which is infinite electrical system. Suitable protective measure is to be in built so that any disturbance of the grid will not cause any damage of the equipment of the solar plant. Very fast responsive microprocessor based directional and reverse power flow protection should be provided to ensure isolation of the solar power plant from the grid at the time of any fault.

x) Solar power plant should be designed to operate satisfactorily in parallel with the grid within permissible limits of high voltage and frequency fluctuation conditions. It is also extremely important to safeguard the system during major disturbances.

y) Strict compliance with the approved and proven quality assurance systems and procedures during the different stages of the project starting from sizing, selection of make, shipment, storage at site, during erection, testing and commissioning.

z) The specifications provided with this bid document are functional ones. The bidder must submit a proposal based upon their own design with proven technology so that it shall best meet to guarantee the specified performance factors given in this bid document.

aa) Bidder shall design the equipment and plant in order to have sustained life of 25 years with minimum maintenance effort.

bb) Obtaining all approvals and preparation of documents for obtaining those approvals for Construction and installation and commissioning of the Solar PV Plant from CEA / Local State Electricity Board and getting approval of net metering and continuous follow up with Electricity Board for it's installation and associated activities for completion of the job shall be under the scope of this contract. Necessary statutory fees shall be arranged by the Owner.

cc) Obtaining approval for Net (Import / Export) Metering from Local State Electricity Board / Local Statutory Authority and continuous follow up with competent authority for Supply & Installation of the same NET METER including supply of necessary accessories and necessary modification in metering as advised by local EB (meter tested and approved by Local Electricity Board) in the HT side of the Plant Electrical shall be under the scope of this work. Any charges levied by the Electricity Board due to necessary modification for net metering viz. CT/PT change etc. (not limited to) will be borne by BL. However, vendor must provide their full assistance and follow up with the Electricity Board during the total procedure and the final performance of Solar PV plant after installation of net metering must be ensured by Vendor. Vendor to deploy during the whole project period till completion, a competent engineer and any other manpower deemed required by Engineer-in-Charge appointed by BL. For that bidder to visit the project site to gather necessary in-formation of Owner's HT System before submission of their offer.

dd) AMC shall be as per the description mentioned in Scope of Work. The down time of PV System should not be more than 120 hours from time of reporting to the Vendor. In case of non-rectification of the problem after 5 days (120 hours) from reporting the complaint, owner may consider repairing/replacing such defective system on the cost of the Vendor. Notwithstanding the same, Vendor shall continue to have the responsibilities and obligations of the subject contract.

ee) The Vendor shall have to furnish monthly and annual maintenance schedule to the owner to keep breakdown minimum.

ff) Walkway mounted on the roofs to simplify the cleaning and maintenance operation should be provided.

Stainless Steel Lifeline from the point of entry on the roof to the end of the roof should be provided for the safety of the cleaning and maintenance staff.

A permanent M.S Staircase with 3 feet width should be provided at two places to be provided.

gg) Transportation, loading, unloading of all materials, equipments etc.

hh) Training of Balmer Lawrie nominated executives and technicians.

ii) Testing equipment/ material for maintenance, monitoring and regular upkeeping of the Solar PV Power Generating system.

jj) Construction power and Construction water as required for construction and completion of this contract are to be arranged by the bidder or will be supplied by the Owner on chargeable basis, subject to availability.

6. Any other equipment/ material/ service required for successful completion of the respective Solar PV Power Generating Systems. Design of the Grid Interactive Solar Power Generating System and its associated electrical & mechanical auxiliary systems includes preparation of Single Line Diagrams(SLD), Plant Layout drawing, Solar Module Layout drawing, Electrical Layouts, Communication drawing for remote monitoring and sensors, Solar Module Mounting Structure Drawings, Foundation Drawings, Earthing System Drawings, Control Panels/ Electrical Panels drawings and any other drawings as required for construction of the Solar PV Plant.

7. Installation work shall be performed with respect to the following but not limited to:

a) Clamping and securing the Solar Modules on the Roof rails with Aluminium Mid clamps and SS Earthing Mid clamps and necessary SS fasteners.

b) Installation of String Inverters, Switchgears, AC Distribution Panels/ Inverter Inter- action Panels, Solar LT Panel, Solar Metering Panel etc.

c) Installation and laying of DC cable from string ends to the inverter through flexible PVC pipes. All PVC pipes exposed to be routed through GI Cable trays. The cable tray ends to be sealed to prevent ingress of rodents.

d) Installation and laying of underground AC cables through Conduit pipes / Hume Pipes/ Cement pipes. Cable Chambers with covers to be provided at each end for ease of drawing of cables.

e) Installation of Lighting Arrestor.

8. Testing of all strings, DC inputs, Control Panels, AC & DC Terminations, Solar LT Panels , Communication systems, earth pits, etc and commissioning of the Solar PV Power Plant.

9. Submission of following documents, drawings, Datasheets, design and engineering information to Project-In-Charge of Balmer Lawrie & Co Ltd. or its authorized representative for approval.

a) Datasheets of all equipments/ components.

b) Datasheets for LA, Switchgears.

c) Solar Module Layout drawing

d) String Layout and DC Wiring drawings

e) SLD's

f) O&M Manuals

g) IEC Certificates and Factory Test Reports for Inverter.

h) IEC Certificates and Flash Test Reports for Solar Modules.

10. Any other documents required for approval from Electrical Inspector, Discom or any other authority. The installation shall be carried out by the selected bidder or his licensed electrical contractor holding a valid license as required by the State Government Authorities. All skilled labours like electricians, welders, fitters etc should possess valid certificates / licenses as applicable by local authorities. The selected bidder shall provide the necessary drawings and documents required by statutory authorities and obtain approval before commencement of installation work. It shall be the sole responsibility of the selected bidder to obtain safety certificate/ approval from local statutory authorities. Clearing the site of after installation work should be carried out by the selected bidder. The site during construction stage should also be regularly cleaned of any unwanted material/ plastic packaging/ boxes etc.
11. The selected bidder shall furnish a schedule of inspection / testing of major equipment so that Balmer Lawrie may send its representative to witness the tests. All equipment testing/ inspection reports, factory test reports, and site commissioning reports should be furnished by the selected bidder upon completion of installation and commissioning of the project. However, this shall not absolve the responsibility of the bidder on providing the performance guarantee/ warrantee.
12. Balmer Lawrie team and /or its authorized representative will carry out physical inspection of all material delivered at site.
13. All equipment, components and material supplied should adhere to the latest version of international / national standards.
14. Any other item not specifically mentioned in the specification, but which are required for installation, commissioning and satisfactory operation of the Solar Power plant are deemed to be included in the scope of the specification unless specifically excluded on turnkey basis.

Expected Solar PV Plant Design:

1. The solar modules will be connected in desired series parallel combination with system voltage of not more than 1000V DC. The DC Power generated by the Solar Modules will be converted to AC Power by Grid Interactive String Inverter/s that will deliver 3 Phase, 415V, 50Hz power output duly synchronized with the incoming Utility power.
2. The system would prioritize the Solar Power over the Utility power during the day. In case of lower solar irradiance the balance power requirement over and above the power supplied by the Solar PV System will be supplied by the grid. In case of power requirement before sunrise or after sunset or in case failure of the solar PV system the utility power will feed directly to the loads.
3. The Solar PV Plant will be metered at the TANGEDCO Metering point (Solar Generation Meter) and then connected to the Main TANGEDCO incomer in the Main LT Panel.
4. In case of failure of grid power, the Inverters having anti-islanding feature will disconnect the supply of the Solar Power from the Solar PV System to avoid reverse feeding into the grid.

5. The system must be designed for maximum safety and durability considering the long life of the solar modules.
6. It is proposed to use Mono Crystalline PERC silicon photovoltaic modules. Individual solar photovoltaic module should be of minimum capacity 550Wp to 600 Wp. Higher efficiency Solar Modules will be preferred.
7. The Solar Modules will be mounted with the same tilt angle as the existing roof.
8. The selected bidder will also have to inspect and suitably decide the point of evacuation of energy generated from the Solar PV Plant.
9. The basic and detailed engineering of the Solar PV Plant shall aim at achieving high standards of operational performance, especially considering the following:
   a) Optimum availability of Solar Modules during the daytime.
   b) Ensure proper layout of Solar Modules and structure to prevent shading of Mod- ules.
   c) Selecting the best On Grid String Inverter with high track record, having excellent after sales support in India and ready availability of spare inverters for quick re- placement.
   d) Careful logging of operation data / historical information from Data monitoring systems and sending alerts / notifications etc for quick rectification of faults.
10. SPV Power plants should be designed to operate satisfactorily with TANGEDCO Grid only. (Solar PV Plants will be isolated when TANGEDCO power fails and will remains isolated till power service is restored).
11. Based on the Solar Insolation data, the Solar PV Power System should be so designed that it shall take into the peak and lowest temperatures and suitably select the cable so that all AC side line losses are below 3%.
12. The installation practices should be as per industry standards maintaining all safety standards.
13. Excellent workmanship is expected and aesthetic look and qualitative performance should be as per international / national standards only.

Technical Specification of Solar PV Plant

1. Solar Photovoltaic Modules

1.1 **Modules made by indigenous manufacturers of reputed brand only from Tata Power Solar, Adani Solar, Waaree Energy, Swelect HHV Solar will be considered**.

The solar photovoltaic modules should be qualified the following certification

a) IEC-61215-1-1 & 2:2021/ IS 14286:2023 : Crystalline silicon terrestrial photovoltaic modules (Design qualification and type approval)

b) IEC-61701:2020 : Salt mist corrosion testing of photovoltaic modules

c) IEC- 61853 Part 1/ IS 16170 Part 1: Module performance testing and energy rating : Irradiance, temperature performance measurements and power rating

d) IEC-61730-1, 2 (2023): Photovoltaic module safety qualification, Part 1 for requirements for construction, Part 2 for requirements for testing.

1.2 The proposed PV Module must have the test certificate issued from accredited test laboratories of Ministry of New and Renewable Energy, Government of India. Type Test certificates issued from IEC accredited laboratories shall also be acceptable.

1.3 The Project shall consist of Mono Crystalline PERC silicon photovoltaic modules. The solar cells shall feature an anti-reflective surface coating to enhance light absorption across varying weather conditions, thereby improving overall energy yield.

1.4 Individual solar photovoltaic module should be of minimum capacity from 550 Wp to 600 Wp.

1.5 Module efficiency shall be not less than 20.90% for Mono PERC modules with positive tolerance only and the fill factor should be equal to or above 75%.

1.6 The solar PV module shall be laminated using a high-quality, UV-resistant polymer such as Ethylene Vinyl Acetate (EVA) and with a backsheet composed of established materials such as PET (Polyester) or PVDF-based laminates to ensure long-term durability and performance.

1.7 The solar modules must be equipped with appropriate encapsulation and sealing mechanisms to safeguard the silicon cells from environmental factors. Only modules from reputed manufacturers, utilizing fully automated production lines, shall be considered for supply**.**

1.8 The rated output of the modules shall have a positive tolerance of +5W, and no negative tolerance is allowed.

1.9 SPV modules of similar output with +/- 2% tolerance in single string shall be employed to avoid array mismatch losses.

1.10 The solar module frame shall be constructed using anodized aluminium or another corrosion-resistant material, ensuring compatibility with the structural materials used for module mounting. The frame shall feature atleast 15-micron anodized coating to withstand corrosive and saline environments, ensuring durability in harsh climates. The modules shall meet Application Class A and Safety Class II standards.

1.11 Each module shall be equipped with a 3.2 mm anti-glare glass that has an anti-reflective (AR) coating for enhanced strength and superior light transmission. The glass shall ensure a light transmission of not less than 91%. The backsheet shall be made of a tough, multi-layered polymer that provides environmental protection against moisture and ensures high voltage electrical insulation, contributing to the long-term reliability and performance of the module.

1.12 The junction box used in the modules shall be equipped with protective bypass diodes to prevent hot spots in the event of cell mismatch or shading. The junction box shall be made from UV-resistant materials to prevent degradation throughout the lifespan of the module. The junction box sealing shall comply with IP68 for a high degree of protection against dust and water ingress, ensuring long-term reliability and performance of the module.

1.13 The crystalline silicon-based solar modules supplied shall be PID-free (Potential Induced Degradation) modules. A third-party lab test certificate verifying the PID-free status of the modules shall be provided as part of the documentation.

1.14 The I-V (Current-Voltage) characteristics of all modules, as per the specifications to be used in the system, must be submitted at the time of supply.

1.15 The temperature coefficient of power for the modules shall not be less than (-0.36%) per degree Celsius.

1.16 Each solar module shall be provided with a tamper-proof Radio Frequency Identification (RFID) tag, either embedded within the module or affixed externally. The RFID tag shall be tamper proof and capable of withstanding harsh environmental conditions throughout the entire operational life of the module (typically 25 years or more). It must comply with the relevant MNRE guidelines and be able to store essential module information, including the manufacturer's name, model number, serial number, electrical specifications, and date of manufacture.

1.17 The sealant used for edge sealing of the PV modules shall provide excellent protection against moisture ingress, offer strong electrical insulation, and possess high adhesion strength.

1.18 The bird spikes shall be provided at the highest points of the array/module structure to prevent birds from sitting on the solar modules.

1.19 Whenever multiple modules are required, only identical modules from the same manufacturer shall be used in the installation.

1.20 The SPV modules shall be highly reliable, lightweight, and have a service life of over 25 years.

1.21 All materials used in the manufacturing of solar PV modules shall have a proven history of reliability and stable operation in external applications. The modules shall perform satisfactorily in relative humidity levels up to 95% and temperatures ranging from -40°C to +85°C. The materials should be resistant to adverse climatic conditions, such as high-speed winds, dust, sand particles, and saline climates/soil conditions. They should also be capable of withstanding the harsh environmental conditions typically found in chemical plants.

1.22 The bidder shall provide the data sheet and type test certificates for the solar PV modules (under STC) along with their offer.

1.23 Balmer Lawrie authorized representative reserves the right to inspect the modules at the manufacturer's factory prior to dispatch.

1.24 All drawings, detailed test reports, and compliance certificates of the offered modules should be submitted for the Owner's submission within 10 days from the date of placement of the Contract/ Work Order/ LOI.

1.25 Each module shall carry indelible markings (permanent and tamper-proof identifiers) complying with MNRE, IEC, and ALMM standards like Manufacturer's Name / Logo, Model No., Sl. No., Year of make, Module Peak Power Output (Pmax), Electrical Ratings, Module Efficiency, Country of Manufacture, Compliance and Certification Marks, RFID Tag, Warning Labels / Safety Instructions etc.

1.26 SPV modules should be designed and manufactured to meet the recognized standard, which must have been used extensively with an excellent track record of performance. Higher efficiency Solar PV Modules shall be preferred. Bidders should submit the technical literature with detailed technical specifications of the modules well as the drawings & manuals.

1.27 **Solar Module manufacturers should be listed in the Approved List of Module manufacturers (ALMM) as per the latest list uploaded on the Ministry of New and Renewable Energy's website**.

1.28 **The SPV Module should be tested and should have IEC test certificate from any recognized IEC accredited test centres. The Test certificates can be from any NABL/ BIS accredited Testing / calibration laboratories. The test certificates should have validity of at least 6 months from the date of submission of the tender document.**

1.29 The SPV modules should comply with the minimum technical specifications laid down by **MNRE**.

1.30 SPV Modules shall be certified as per IEC 61215, IEC 61730 and IEC 61701 amended up to date or equivalent standards.

1.31 The PV Modules shall be tested for Salt Mist Corrosion Test as per MNRE requirement.

1.32 **Material Warranty:**

The solar PV modules supplied under this contract shall carry a material warranty of 10 years from the date of commissioning. This warranty shall cover any defects in materials, components, or workmanship under normal application, installation, and operating conditions as per industry standards.

The manufacturer shall guarantee that:

- The PV modules are free from any material or manufacturing defects, including defects in the lamination, glass, junction box, frames, interconnects, and bypass diodes.
- The modules will not suffer from issues such as delamination, corrosion, cell cracking, or discoloration that may affect performance under normal climatic and operational conditions.
- The glass and backsheet shall remain intact and maintain their protective functions over the warranty period.
- The aluminium frame shall remain corrosion-resistant and maintain mechanical strength under recommended load conditions.

If any such defect arises during the warranty period, the manufacturer shall be obligated to repair, or replace the affected modules as per the terms agreed upon, at no additional cost to the Balmer Lawrie.

The warranty shall not apply to damages caused due to:

- Improper handling, installation, or maintenance not in accordance with the manufacturer's guidelines.
- Force majeure events (such as natural disasters).
- Unauthorized modifications or repairs.

This warranty shall be in addition to and not in derogation of any other rights or remedies available under applicable law or contract.

1.33 **Performance Warranty**

Minimum Performance Output Guarantee

The manufacturer shall warrant the output of Solar PV modules for their output peak watt capacity,

which should not be less than 90% of the initial value at the end of 10 years and 80% of the initial value at the end of 25 years.

Power Degradation Limit

The vendor shall provide a warranty ensuring that the linear power output degradation of the solar PV modules shall not exceed 2.0% at the end of the first year and shall not exceed 0.6% per year from the second year onwards, for the remaining duration of the warranty period. All performance values shall be referenced to Standard Test Conditions (STC).

Flash Test Certificate

The performance of the solar PV modules shall be verified through flash test reports/ certificate, conducted either at the factory level or by an MNRE/BIS/NABL accredited third-party testing laboratory, for each module batch. The flash test certificate for each PV module, including the serial numbers, must be submitted along with the handover documents.

Rectification Obligation:

In the event of non-compliance with the guaranteed power output during the warranty period, the supplier shall, at their own cost, take one of the following corrective actions, as approved by the Balmer Lawrie:

- Replace the defective module(s) with new module(s) of equal or higher rating.
- Repair the defective module(s) to restore the performance to the guaranteed level.

1.34 The PV modules shall comply with the stated performance warranty for both power output and overall module quality, ensuring a reliable and long-lasting energy generation capacity over the warranty period.

1.35 The Solar PV Modules should also be warrantied against manufacturing defects and workmanship for 10 years.

1.36 The modules must also confirm to the standards mentioned by the concerned State Nodal Agency.

2. Technical Specification for Inverters

The Inverter used should be robust, intelligent On-grid string inverters manufactured by reputed international companies having sales and service office in India. The inverter/s must conform to the IEC 61683 and IEC 60068- 0068-2-1/2/14/30, IEC 62116, IEC 61727. The typical specifications required are as under:

Parameter	Requirement
Type	String inverter only
IP Rating	Minimum **IP65** or **IP67**, suitable for outdoor installations as per **IEC 60529**
AC Output Rating	70- 80 kW per inverter

Parameter	Requirement
Phase & Voltage	3-phase, 415 V, 50 Hz
Maximum DC Input Voltage	1,100 V DC
Euro / CEC Efficiency	> 98%
Output Frequency	50 Hz ± 1.5%
Power Factor	> 0.99 at full load
Total Harmonic Distortion (THD)	< 3%
Ambient Operating Temperature	-20°C to +55°C
Warranty	Minimum **5-year comprehensive warranty**, extendable up to **20 years**
Cooling	Natural or forced air or Smart Fan/ Fan cooling
Safety Features	Integrated ground fault protection, over/under voltage protection, over-temperature protection, and automatic shutdown in fault conditions
Surge Protection	In-built DC surge protection (SPD Type II) or external SPD in DCDB
Anti-Islanding	Built-in anti-islanding feature, compliant with IEC 62116
Monitoring	Inverters shall be provided with built-in communication hardware (RS485, Ethernet, or Wi-Fi) and software platform for **remote monitoring** of energy generation, alarms, and real-time performance
Construction	**Transformerless design**, compact and corrosion-resistant enclosure
Mounting	Suitable for wall or ground mounting with easy accessibility for maintenance

Approved Makes of the inverter are: SMA / ABB / Schneider/ Refusol / Siemens / DELTA / KACO/ Goodwee/ Sungrow.

PV Array Configurations

The Solar array shall be configured in multiple numbers of sub arrays, providing optimum DC power to available number of sub arrays. The bidder shall submit their own design indicating configuration of PCU and respective sub arrays and associated bill of material.

3. Technical Specification for Solar Module Mounting Structure

3.1 Design Optimization and Roof Space Utilization

a) The Solar Module Mounting Structure (MMS) shall be designed to optimize the available roof space, ensuring maximum utilization of the area without compromising the performance and output of the Solar Photovoltaic (SPV) system. The roof area details and reference drawings of the shed are attached for bidder reference.

b) The design must ensure that the MMS occupies minimal space while maximizing energy generation from the solar modules.

3.2 Alignment, Orientation, and Tilt

The MMS shall be designed to enable proper alignment, orientation, and tilting of the solar modules, ensuring the system's energy generation is maximized. The system must minimize the footprint of the structure on the roof without hindering the solar panel's energy capture.

3.3 Replacement and Adaptability

The structure shall allow for the easy replacement of any individual solar module without requiring significant disassembly of the system. The design must be tailored to the site-specific conditions, taking into account roof type, local climate, and other physical constraints.

3.4 Submission of Design Drawings

The bidder shall submit detailed structural design drawings, including material specifications, proposed mounting configurations, and applicable standards, for prior approval of the Employer within 10 days from the date of issuance of the Contract/ Work Order/ Purchase order/ LOI. These drawings must align with the technical requirements and standards set forth in this document.

3.5 Finite Element Analysis (FEA)

The bidder must provide a Finite Element Analysis (FEA) conducted by the Original Equipment Manufacturer (OEM) for the Module Mounting Structure. The FEA must demonstrate the structural stability and load-bearing capacity of the MMS under various environmental factors such as wind loads, snow loads, and seismic conditions applicable to the project site location.

3.6 Wind Speed Design Criteria

The design of the MMS and associated foundation shall be based on a basic wind speed of 200 km/h. For all design calculations, the wind speed risk factors k1, k2, and k3 shall each be considered as 1.0 (minimum).

3.7 Compliance with Standards

The bidder is responsible for ensuring that the MMS design complies with all relevant local building codes, structural safety standards, and international standards such as IEC 61215, IEC 61730, and other related structural safety standards for solar PV systems.

3.8 Factor of Safety and Structural Design

Adequate factor of safety must be incorporated into the MMS design to account for unforeseen loads or environmental conditions. The bidder shall submit detailed structural design calculations that justify the chosen factor of safety and confirm compliance with industry standards.

3.9 Installation and Mechanical Considerations

a) The MMS shall facilitate simple and efficient mechanical and electrical installation. SPV modules shall be mounted using anodized aluminium channels, with the structure designed to support the modules at the required orientation and tilt.
b) The MMS design must effectively transfer mechanical loads from the solar modules to the roof's purlins or the ground. On-site welding shall not be permitted under any circumstances.

3.10 Material Specifications for Steel Components

a) The array structure shall be fabricated from mild steel sections of appropriate sizes, which are to be hot-dip galvanized with a minimum coating thickness of 80 microns on all sides, including internal surfaces.
b) Prior to galvanization, steel surfaces shall be thoroughly cleaned of paint, rust, grease, and other contaminants to ensure proper coating adherence.

3.11 Space Optimization and Energy Generation

The array structure shall be designed to occupy minimum space on the roof while ensuring no compromise on the energy generation capacity from the SPV modules.

3.12 Corrosive Environments

In corrosive environments (e.g., coastal or industrial areas), the MMS structure shall be additionally PU-coated (polyurethane-coated) as per the Scope of Work to enhance its durability and corrosion resistance.

3.13 Protection of Structural Hardware

All structural hardware, including nuts, bolts, washers (plain and spring), must be adequately protected from the prevailing atmospheric and environmental conditions through appropriate galvanization, coating, or other suitable protection methods to ensure longevity and performance.

3.14 Anti-Theft Fasteners for Modules

Each solar module shall be secured using two stainless steel anti-theft fasteners on two diagonally opposite corners. The fasteners and washers used for mounting the MMS structure shall be of SS 304 / UNS S20430 or equivalent, while those used for fixing modules must be of SS 316 or equivalent, capable of withstanding harsh environmental conditions and ensuring a design life of 25 years.

3.15 Clamping and Shadow-Free Mounting

Modules must be securely clamped and bolted to the structure. The clamps shall be made of Aluminium or Steel with weather-resistant properties. EPDM rubber shall be used with clamp-bolt assemblies to prevent water ingress and avoid casting shadows on the active area of the modules.

3.16 Earthing and Grounding

The structure shall be properly earthed using a maintenance-free earthing kit to ensure safety, grounding compliance, and protection against electrical faults.

3.17 Installation Guidelines

The bidder shall provide detailed installation guidelines, including diagrams for module mounting and structural supports, to ensure proper alignment and setup during installation.

3.18 Alignment Tolerances

For rows containing multiple module mounting structures (MMS units), the alignment of all modules must be within a maximum deviation of 10 mm to ensure consistent and efficient power generation.

3.19 Cable Management

Cables shall be routed through protective conduits or pipes, and UV-resistant cable ties shall be used to secure them aesthetically to the MMS from modules to junction boxes or inverters. Proper cable management should ensure safety and ease of maintenance.

3.20 Mounting of Additional Components

If a String Monitoring Unit (SMU) or Junction Box (JB) is to be mounted on the MMS, the bidder shall account for the additional load in the structural design. Appropriate supports must be provided, or a separate mounting structure may be proposed if necessary.

3.21 Quality Documentation

The bidder shall submit complete quality documentation including test certificates for raw materials, in-process checks, and final inspection/testing related to the MMS structure and components.

3.22 Traceability and Identification

All major components of the MMS shall be properly labelled and numbered for ease of traceability, identification, and future maintenance.

3.23 Roof Slope and Installation

For rooftop installations, the orientation and alignment of modules shall be in accordance with the roof slope and structure based on the location of array installation.

3.24 Installation on Asbestos or Aluminium Sheet Roofs

If mounting is to be done over inclined asbestos or aluminium sheet roofs, the solar panels shall be secured using suitable clamps, anodised aluminium extrusions, and tek screws anchored into the roof purlins.

3.25 Protection of Existing Waterproofing

The bidder must ensure that no damage occurs to existing waterproofing during the installation. If damage occurs, it must be restored to original condition at the bidder's cost. All pedestals and supports must be properly sealed and finished to prevent future water seepage.

3.26 Installation, Testing, and Commissioning

The bidder shall be fully responsible for the installation, testing, and commissioning of the MMS and associated solar modules in accordance with the approved design and project requirements.

3.27 Civil or Mechanical Works for MMS Installation

The bidder shall bear full responsibility for any civil or mechanical works required for the installation of the MMS, including but not limited to:

- Roof surface preparation (e.g., cleaning, minor repairs, reinforcement).

- The bidder shall ensure the provision and installation of a two-way roof access step ladder, which shall include an aluminium cage ladder for enhanced safety. The ladder must be designed in accordance with CEIG norms and tailored to meet the specific site requirements. It should provide safe, stable, and convenient access to the rooftop, ensuring structural integrity and compliance with all applicable safety regulations.
- Installation of foundation bolts or anchoring points.
- Handling of any additional materials, tools, or equipment required for installation.

3.28 Quality Installation Work

All installation work must be executed in a timely, professional, and high-quality manner, maintaining a high standard of workmanship throughout the project.

3.29 Scope of Materials

All materials related to the mounting of SPV modules, including but not limited to Aluminium rails, clamps, rivets, washers, and any other components, shall be the exclusive responsibility of the bidder.

3.30 Warranty and Post-Installation Support

a) The MMS and associated components shall be covered by a minimum 10-year warranty against material defects, corrosion, and failure of structural integrity. Any defects identified during the warranty period must be rectified by the bidder at no additional cost to the bidder.
b) The bidder shall also provide post-installation technical support and be available to address any issues related to the mounting structure during the operation phase of the solar power plant.

4. TECHNICAL SPECIFICATION – CABLES, WIRES & ELECTRICAL CONTROLS

4.1 General Requirements

All cables and connectors used for the installation of the solar field shall be of solar grade, specifically designed to withstand harsh environmental conditions. These conditions include, but are not limited to, high temperatures, UV radiation, rain, humidity, dirt, salt, burial, and attack by moss and microbes. The cables shall have a service life expectancy of at least 25 years and shall meet the relevant voltage standards as per the latest IEC standards. For outdoor installations, DC cables must comply with TUV 2PfG 1169/09.07 to ensure a service life of 25 years.

4.2 Insulation

The outer sheath of all cables shall be electron beam cross-linked XLPO (Cross-Linked Polyolefin) type, black in colour, flame-retardant, UV resistant, and suitable for outdoor exposure. The cable drum number or batch number must be embossed or printed at intervals of every 1 meter along the length of the cable. The cable jacket shall also be electron beam cross-linked XLPO, flame-retardant, UV resistant, and black in colour.

4.3 DC Cables

The DC cables used from the solar modules to the array junction box shall be made of solar grade copper (Cu) conductors with XLPO insulation, rated for 1.1kV only. The cables from the array junction box to the inverter may be made of XLPO-insulated aluminium with a 1.1kV rating, in compliance with the relevant standards. The bidder shall provide type test reports for each type of cable used prior to dispatch.

4.4 Voltage Drop and Ampacity

Wires and cables must be selected with sufficient ampacity to ensure that the voltage drop from the PV modules to the inverter does not exceed 1.5% at full power, including diode voltage drop. The successful bidder shall provide voltage drop calculations in an Excel sheet, confirming compliance with the specified limits.

4.5 Cable Joints

Only terminal cable joints shall be accepted. No in-line cable joints for connecting two cable ends will be accepted under any circumstances. All wires used on the low-tension (LT) side shall comply with IS standards and shall be of appropriate voltage grade. Only copper conductor wires conforming to IEC 60228, Class 5 of a reputed make shall be used.

4.6 Cables for Main Junction Box/Inverter to Owner's Panel

All cables connecting the main junction box and inverters to the owner's electrical panel or transformers shall be XLPE insulated cables conforming to IS 1554. These cables shall also meet IEC 60189 standards for testing and measuring methods.

4.7 Cable Terminations

Cable terminations shall be made with appropriate cable lugs, sockets, etc., which shall be properly crimped and passed through brass compression-type cable glands at the entry and exit points of cubicles and other enclosures.

4.8 Cable Marking

All cables and wires shall be provided with UV-resistant, printed ferrules at both ends. The ferrules should be of high quality, clearly marked with alphanumeric labels, allowing for easy identification of each cable.

4.9 Cable Routing

The interconnection wiring between the solar modules shall be routed through weather-resistant pipes from a reputable manufacturer. All cables shall be routed in GI (Galvanized Iron) cable trays with covers, which must be securely mounted on the rooftop. For underground or buried installations, cables should be run through HDPE pipes or DWC conduits. Where cables cross roads, drains, or trenches, they must be routed through appropriate-sized GI pipes for protection.

4.10 AC and DC Cable Requirements

a) All necessary Solar DC cables and wires shall be made of stranded copper conductors according to IEC 60228 standards, with XLPO insulation. The cables shall be UV-resistant, resistant to water, oil, salt, halogen-free, low smoke emission, and flame retardant. The Solar DC cables should carry TUV certification. The maximum temperature rating for Solar DC cables should be +120°C.

b) AC cables from the inverter to the inverter interactive panel must be 1.1kV grade, 4-core

stranded copper conductors, and sized appropriately per the system's requirements.

c) 4-core or 3.5-core XLPE insulated copper/aluminium armored cables, conforming to IS:1554 or IEC 227, should be used from the inverter interactive panel to the main LT panel.
d) All connections must be made properly using suitable cable lugs or terminals that are crimped correctly.
e) The size of cables and wires should be designed considering line losses, maximum load, and ensuring that the voltage drop is kept within the permissible limit. The maximum permissible line losses should not exceed 3%.
f) All cables and wires must be ISI marked and comply with the latest BIS standards required by the Ministry of New and Renewable Energy (MNRE) for solar applications. The ambient temperature range of the cables should be from -50°C to +90°C or higher.
g) All flexible AC cables shall be neatly arranged in GI cable trays with covers for protection and ease of maintenance.
h) Ferrules for DC cables should be used for proper cable identification and traceability.
i) AC cables should be terminated with proper lugs and crimps to ensure reliable connections.
j) Flexible pipes and conduits should be used at cable bends and at places where the cables may be subject to abrasion.
k) All cables must be of Low Smoke Zero Halogen (LSZH) type and routed through sand-filled trenches from the inverters to the main LT panel and existing LT panels.

4.11 Acceptable Cable Makes

DC Cable: Lapp, Hellukable, TKD, Sichem, KEI, Finolex, UNICAB.

AC Cable: Lapp, Hellukable, TKD, Finolex, Havells, Polycab, Gloster, KEI, Sichem.

5. Lightning, Surge & Over Voltage Protection

5.1 General Requirements

The Solar Photovoltaic (SPV) power plant shall be provided with effective lightning and overvoltage protection to safeguard the system from damage caused by electrical surges and atmospheric disturbances. The primary objective of this protection is to reduce any overvoltage caused by lightning or other atmospheric phenomena to a tolerable level before it reaches the photovoltaic (PV) modules or any other subsystem components. The bidder is required to ensure that all necessary protection measures are incorporated into the system design to meet this requirement.

5.2 Surge Protection Equipment

The system shall be equipped with appropriate surge protection devices (SPDs) for both AC and DC sides of the installation. These SPDs shall be selected and rated as per the latest relevant international and Indian standards, ensuring adequate protection against overvoltages caused by lightning, switching surges, and other electrical disturbances. The devices must be suitable for the specific requirements of the SPV system, ensuring protection of all critical components, including inverters, junction boxes, and electrical panels.

5.3 Lightning Protection for Solar PV Yard/Array

a) The Solar PV Yard/Array area shall be adequately protected against lightning strikes by deploying a sufficient number of Lightning Arrestors, in compliance with IEC 62305 or the latest applicable standards. The number and positioning of the lightning arrestors shall be determined based on the total area of the solar array, the local environmental conditions,

and the height and layout of the solar panels.

b) The lightning protection system shall be designed to provide a direct path to earth for lightning strikes, preventing the overvoltage from reaching sensitive components of the system. Protection against induced high-voltage transients shall be achieved through the use of Metal Oxide Varistors (MOVs) and an effective earthing system, ensuring that induced surges are safely redirected to the ground.

5.4 Lightning Arrestors Specifications

a) The Lightning Arrestors must be non-ESE (Early Streamer Emission) type and designed to meet the standards set by IEC 62305 or equivalent. The arrestors should be capable of safely diverting lightning strikes to the ground, ensuring that no overvoltage conditions occur within the Solar PV Yard or its components.

b) The lightning arrestors must be appropriately positioned to cover the entire Solar PV Yard area, including the modules, inverter panels, and associated equipment. The installation of these arrestors should be done in accordance with the applicable Indian Standards and International Standards to guarantee maximum protection.

5.5 Lightning Masts and Conductors

a) The lightning masts and conductors must be designed and fabricated in compliance with the applicable Indian or International standards. The masts should be made of high-conductivity materials, such as copper or aluminium, and must be properly installed to provide complete protection for the Solar PV Yard and all associated equipment.

b) The lightning masts shall be of sufficient height to ensure that they provide adequate protection to the entire area of the Solar PV Yard. The installation should account for local wind speeds and environmental factors to ensure the stability and durability of the masts and conductors.

5.6 Structural Support for Lightning Conductors

The lightning conductors shall be securely supported to withstand high wind speeds and other environmental conditions. Proper structural supports, including guy wires, shall be used to ensure that the lightning conductors remain stable and do not shift during high winds or storms. The supports shall be designed to meet local wind load requirements and ensure the system's safety and longevity.

5.7 Earthing for Lightning Protection

a) The Lightning Arrestors shall be connected to two separate earth pits, each equipped with suitable copper cables or wires of appropriate size, in compliance with the latest Indian Standards (IS) for earthing. The earthing system shall be designed to provide a low-resistance path for any electrical surge, ensuring effective dissipation of the lightning energy into the ground.

b) The earthing system must be properly tested and certified to ensure it meets all applicable

standards. The design should include corrosion-resistant materials to ensure long-term durability of the earthing system and to prevent degradation over time. The bidder shall provide all necessary test certificates and reports for the earthing system.

5.8 Testing and Commissioning

a) Before commissioning, the entire lightning, surge, and overvoltage protection system must be thoroughly tested to ensure its effectiveness. The testing should include the verification of the proper grounding system, the functionality of the surge protection devices, and the proper installation of the lightning arrestors and conductors. The successful bidder shall provide a detailed test report, including results of all tests carried out, to demonstrate compliance with the specified protection requirements.

5.9 Maintenance of Lightning Protection System

a) The successful bidder shall include periodic inspection and maintenance of the lightning protection system as part of the comprehensive five-year Annual Maintenance Contract (AMC). The maintenance shall include visual inspections, testing of the surge protection devices, and checks of the grounding system to ensure ongoing protection against lightning and electrical surges. Any defects or failures identified during maintenance shall be rectified promptly.

5.10 Documentation and Certification

The bidder shall provide the following documentation:

a) Detailed design calculations and layouts for the lightning, surge, and overvoltage protection system.
b) Test certificates for the surge protection devices, lightning arrestors, and earthing system.
c) Compliance certificates for the installation of all equipment, confirming conformity with the relevant national and international standards.
d) As-built drawings showing the complete lightning protection system, including the locations of arrestors, masts, conductors, and earth pits.

6. Earthing Protection

6.1 General Requirements

The earthing system for the entire solar photovoltaic (SPV) power plant shall be designed, installed, and maintained in strict accordance with IS: 3043 (Indian Standard for Earthing), the Indian Electricity Rules, 1956 (as amended to date), and all relevant statutory requirements. The system shall be designed to ensure safe and efficient operation of the plant, protecting all electrical equipment and personnel from potential electrical faults.

6.2 Earthing System Network

The earthing system shall consist of an interconnected mesh of GI (Galvanized Iron) Flats buried in the ground within the plant premises. The interconnected earth mat shall be designed to ensure the lowest possible earth resistance. The GI Flats used for the interconnection shall be of suitable size as determined by the design requirements and shall be free from pitting, laminations, rust,

scale, and any other electrical or mechanical defects that could impair the conductivity or performance of the system.

6.3 Equipment Earthing

a) All metallic frames of electrical equipment shall be earthed with two separate and distinct connections to the earthing system, with each connection rated for 100% of the equipment's capacity.
b) The metallic sheaths, screens, and armour of all multicore cables shall be earthed at both ends to ensure safety and prevent potential hazards from electrical faults.
c) Neutral connections and metallic conduits/pipes shall not be used for equipment earthing.

6.4 Connection Types

a) All connections between earth leads and electrical equipment shall be bolted type connections to ensure a reliable and permanent connection.
b) The earthing conductors shall be tested for continuity and resistance to ensure proper performance throughout the plant’s life cycle.

6.5 Backfilling

Backfilling material for buried earthing conductors shall be free from stones, sharp objects, or any harmful mixtures that could damage the earth conductors or impede their efficiency. The backfilling shall be done in layers of 150mm thickness, ensuring uniform compaction and proper earth conductivity.

6.6 Spacing Between Earthing Electrodes

The minimum spacing between earthing electrodes shall be 2000mm as per the relevant standards. This ensures that each electrode functions independently and avoids any interference between them during fault conditions.

6.7 Testing Provisions

a) Necessary test point provisions shall be made for bolted, isolated joints of each earthing pit to allow for periodic checking and testing of earth resistance.
b) The earthing system should be designed to ensure an earth resistance of less than 1 ohm across the entire earthing network and mesh.

6.8 Compliance with Indian Electricity Rules

In compliance with Rule 33 and Rule 61 of the Indian Electricity Rules, 1956 (as amended), all non-current-carrying metal parts, including enclosures, frames, and other conductive parts of the electrical system, shall be earthed with two separate and distinct earth continuity conductors. These conductors shall be connected to an efficient and effective earth electrode to maintain safety and compliance with statutory requirements.

6.9 Earth Pit Requirements

a) The solar structure, inverters, and lightning arrestors shall each have separate earth pits. The exact number of earth pits required for each of these components shall be determined by

the bidder, based on the guidelines from the Electrical Inspector or any other concerned statutory body.

b) The earth pits and connections shall be made as per IS: 3043 to ensure compliance with safety standards.

c) All array structures, equipment, and control systems shall be compulsorily connected to the earthing system.

6.10 Approval by Electrical Inspector

The earthing system and its layout shall be approved by the Electrical Inspector or the relevant statutory authority for the region. The bidder shall ensure that all required documentation and approvals are obtained prior to the commencement of installation.

6.11 Submission of Approved Drawings

On completion of the installation and commissioning of the solar PV system, the bidder shall submit the approved earthing drawings from the Electrical Inspector to the Project Owner (Balmer Lawrie) for record-keeping and compliance verification.

6.12 Maintenance of Earthing System

The successful bidder shall be responsible for the maintenance and periodic inspection of the earthing system for the duration of the five-year comprehensive annual maintenance contract (AMC). The earthing system shall be inspected regularly to ensure it remains effective and compliant with the required safety standards throughout the operation of the solar plant.

7. Inverter Disconnect Panel, Solar LT Panel and Solar Generation Metering Panel

7.1 General Requirements

The Inverter Disconnect Panel, Solar LT Panel, and Solar Generation Metering Panel shall be designed, supplied, installed, tested, and commissioned to meet the following specifications. These panels shall ensure safe operation, easy maintenance, and compliance with the relevant Indian and international standards. The panels shall be weatherproof, durable, and made from high-quality materials to ensure long-term reliability in the outdoor environment.

7.2 Construction and Material

- The panels shall be constructed using M.S. (Mild Steel) power-coated boxes with louvers for proper ventilation, ensuring heat dissipation and preventing the buildup of moisture.
- The material used for the fabrication of the panels shall be CRCA (Cold Rolled Close Annealed) sheet metal, with a thickness of 14/16 gauge.
- The panels shall be finished with a power-coated paint of Siemens grey colour to ensure resistance to corrosion and environmental factors.

7.3 Cable Entry and Glands

- The cable entry points shall be equipped with brass or stainless steel (SS) metallic double compression glands for armored cables, ensuring a secure and safe connection.
- For flexible copper cables, PVC glands shall be provided to ensure proper sealing and prevent any

possible damage to the cables.

7.4 Switchgear and Protection

- Incoming and outgoing switchgears in the panels shall consist of suitable 4-pole MCCBs (Moulded Case Circuit Breakers) with phase barriers, rotary handles, and door interlock with defeat for safe operation and maintenance.
- Spreader links shall be provided for the MCCBs to ensure proper distribution of current in the event of a fault or disconnection.
- The panels shall be designed with IP-21 protection for indoor mounting, ensuring the panels are protected from access to hazardous parts and from harmful ingress of solid objects or moisture.

7.5 Mounting and Installation

- The Inverter Disconnect Panel shall be wall-mounted to allow for easy access and efficient use of available space.
- The Solar LT Panel shall be floor-mounted with a stand for stable and secure installation.

7.6 Bus Bar and Metering

- Insulated bus bars of appropriate size and material shall be provided in the panels to ensure safe and efficient distribution of electrical power.
- The Solar Generation Metering Panel shall include a unidirectional meter for recording the total energy generated by the solar system, with a 0.5 class accuracy. The panel shall also include the necessary current transformers (CTs) as per TANGEDCO specifications.
- The bidirectional Solar Generation Meter shall be provided in compliance with the specifications of TANGEDCO to ensure proper billing and monitoring of energy export and import.

7.7 LED Phase Indicators

The panels shall be equipped with LED phase indicators to visually indicate the status of each phase, ensuring clear and easy identification of phase conditions during operation and maintenance.

7.8 Approved Makes

The following makes shall be used for the various components of the panels:

- Switchgear: Schneider, ABB, Siemens, L&T
- Panel Digital Meter: Secure, L&T.
- AC SPD Type II (Surge Protection Device): Phoenix, L&T, Citel, Eaton

7.9 Compliance and Standards

- All panels, components, and installation shall comply with the relevant Indian Standards (IS), IEC standards, and any other applicable regulations for solar PV system installations.
- The Inverter Disconnect Panel, Solar LT Panel, and Solar Generation Metering Panel must be

certified and comply with TANGEDCO specifications regarding generation metering and CTs.

7.10 Testing and Commissioning

- The panels and their components shall be thoroughly tested for functionality, safety, and performance prior to commissioning. This includes testing for insulation resistance, continuity of earthing, correct operation of the MCCBs, and proper functioning of the solar generation metering system.
- The bidder shall provide all necessary test reports, certificates, and documentation to demonstrate compliance with the specified requirements.

7.11 Maintenance

The bidder shall provide a five-year comprehensive annual maintenance contract (AMC), which will include periodic inspections, testing, and servicing of the panels to ensure continuous and reliable operation of the entire solar PV system. This will also include troubleshooting and rectification of any issues that arise during the operation period.

8. Remote Monitoring System

8.1 General Requirements

The bidder shall provide and install a Remote Monitoring System (RMS) for the solar photovoltaic (SPV) power plant, which should be capable of monitoring the daily, weekly, monthly, and annual generation data. The system must enable remote monitoring of the plant's performance using GPRS, LTE, or broadband network to ensure real-time access to generation data and fault detection. The Remote Monitoring System shall preferably be supplied by the inverter manufacturer. If a third-party system is proposed, it must be fully compatible with the supplied inverter system.

The Remote Monitoring System must be designed to:

a) Monitor the performance of the plant continuously.

b) Record and log errors and faults for early detection and resolution.

c) Provide access to authorized personnel of (Client Name) only.

8.2 Data Logging and Transmission

- The Data Logger must be provided to measure standard parameters of the Solar PV Plant. The logger shall gather data such as generation, voltage, current, power output, and other relevant parameters.
- The Data Logger can either be built into the inverter or installed externally, depending on the design preference.
- The Data Logger will gather the inverter data and transmit it to the Remote Monitoring System for storage and analysis. It will also monitor the Performance Ratio (PR) of the plant

to assess its operational efficiency.

8.3 Internet Connectivity & Router

- The bidder shall supply and install an internet router that supports 4G/5G SIM cards for remote access. This router shall facilitate communication between the Data Logger and the remote monitoring system.
- If the client does not provide access to a broadband network, the bidder shall ensure that the router supports SIM cards from local network providers.
- The client will provide the SIM Card (data card) for the internet router unless otherwise agreed upon, and the bidder will ensure that the router is compatible with the network.

8.4 Performance Monitoring and Reporting

- The system shall allow monitoring of the real-time Performance Ratio (PR) of the solar power plant to evaluate the efficiency of the plant on a continuous basis.
- The system should store and provide detailed performance reports on daily, weekly, monthly, and annual generation of the plant.
- The RMS should record all system faults, errors, and performance deviations to ensure early detection, thereby allowing for timely troubleshooting and corrective actions.

8.5 Data Access and Security

- The system shall be configured to allow access to monitoring data only to authorized representatives of (Client Name). The bidder shall ensure that adequate security protocols are in place to prevent unauthorized access.
- The data should be stored securely and made available via a web-based platform or dedicated software application, ensuring easy and user-friendly access for monitoring and analysis.
- The system shall allow for 24/7 monitoring and remote diagnostics, ensuring that the plant's performance can be tracked in real-time from any location.

8.6 Limitations of the Monitoring System

The Remote Monitoring System is intended for monitoring purposes only and shall not be used to control or regulate the solar power plant. It will only provide data and status updates related to the plant’s operational performance, faults, and generation metrics.

8.7 Installation and Commissioning

- The bidder shall install and configure the complete Remote Monitoring System at the designated location (PC allocated by the Owner). This installation must be done in coordination with the system’s commissioning to ensure seamless operation.

- The bidder shall conduct a demo session with the client to explain the functionality of the Remote Monitoring System and provide training to the authorized personnel for effective usage.

8.8 Warranty and Support

- The bidder shall provide a comprehensive warranty for the Remote Monitoring System for the entire duration of the contract period, covering all components and software. This warranty will include free maintenance, support, and any required software updates or upgrades during the contract period.
- The bidder shall provide annual technical support during the five-year comprehensive maintenance contract (AMC), ensuring prompt resolution of any issues related to the Remote Monitoring System.

9. Solar Module Cleaning Facility

9.1 Scope of Work

The bidder shall design, supply, install, test, and commission a Solar Module Cleaning Facility (SMCF) using a water sprinkler-based system to clean solar PV modules installed on the roof of the new PEB warehouse. The system must:

- Effectively remove dust, dirt, bird droppings, and environmental contaminants from the solar modules.
- Operate under manual control (switch-based) with ease of access.
- Ensure uniform water distribution across all modules without causing mechanical or water damage.
- Be durable and suitable for long-term outdoor use in the local climate.
- Minimize water wastage through appropriate piping layout, pressure regulation, and nozzle design.

The scope includes, but is not limited to:

- Detailed design and engineering including drawings and specifications.
- Supply of all materials and equipment.
- Complete installation including water pipeline, pump, sprinklers, support structures.
- Electrical and mechanical integration.
- Commissioning of the system and demonstration of performance.
- Submission of all manuals and documentation.
- Basic training of maintenance staff.

9.2 System Requirements

Cleaning System

- Type: Water sprinkler system using overhead/inline nozzles.
- Control: Operated via ball valves/gate valves or starter switch for pump operation.
- Coverage: Uniform coverage of all installed solar modules on the new PEB warehouse roof.
- Components:
  - Nozzles (brass/stainless steel/UV-resistant plastic) mounted on overhead/incline pipes.

- Piping: UPVC.
- Adequate drainage considerations to prevent water stagnation.
- Sprinkler nozzle as per solar array arrangement

Water Pressure Requirements

Bidder to ensure adequate pressure at the farthest nozzle point.

Water Supply Line

Water to be sourced from garage area near new yard entrance approximately 120 meters from the new PEB warehouse.

Pipeline

- UPVC pipes.
- Pipe diameter (40mm) for incoming line and 19 mm diameter for distribution solar cleaning line to ensure pressure and flow rate.

Fittings and Supports

- Elbows, tees, reducers, etc., to be pressure-rated and UV stabilized.
- Clamps/supports: Galvanized iron (GI) or stainless steel suitable for rooftop installation.

Pumping System

- 3 Hp Mono block motor solar module cleaning system covering 25,000 sq. ft, with adequate head. Hp and discharge to maintain required pressure along with NRV valve.
- Motor: Three-phase, minimum IP55 rating.
- Control: DOL with overload protection.

Filtration Unit

- Inline filter (minimum 100-micron) to prevent nozzle clogging.
- Drain valve for filter cleaning.

9.3 Design Submission Requirements

Bidder must submit the following documents 10 days from the date of issuance of Contract/ work order:

- General Arrangement Drawing (GAD) showing entire pipeline and sprinkler layout.
- Water line routing plan from the water source to the new PEB warehouse.
- Hydraulic calculation with:
  - Pump selection.
  - Pipe sizing.
  - Nozzle discharge rate.
  - Estimated water requirement per cleaning cycle.
- Itemized Bill of Materials (BoM) with make and specifications of all components.
- Datasheets of all major components (pumps, pipes, nozzles, valves, etc.).
- Cleaning methodology and estimated cleaning duration per cycle.

9.4 Standards and Compliance

All components and installation must comply with relevant standards:

- IS 4984 / IS 4985 for pipes.
- IS 325 / IEC 60034 for electric motors.

- IS 8623 / IEC 61439 for control panels (if used).
- All materials must be UV-resistant, corrosion-proof, and rated for outdoor use.

9.5 Installation and Commissioning

- Bidder to carry out all necessary civil, mechanical, and electrical works.
- Proper anchoring and supports for piping on rooftops or structures.
- All work must comply with local building codes, electrical regulations, and safety practices.
- Commissioning will include performance testing of:
  - Water pressure at nozzle end.
  - Uniform coverage and spray pattern.
  - System start/stop operation.

9.6 Training and Documentation

- Provide basic operational training for at least 2 staff members.
- Provide 2 hard copies and 1 soft copy of:
  a) Operation Manual.
  b) Maintenance Instructions.
  c) Piping and component layout drawings.

9.7 Warranty and Support

The entire system including pump, pipeline, valves, and nozzles shall be warranted for minimum 1 year from the date of commissioning.

Bidder must assure spare parts availability for a minimum of 5 years.

Faults shall be attended to within 24 hours of intimation.

9.8 Site Visit and BOQ Verification

- Bidder must visit the site to verify distances, layout, and installation constraints before submitting the bid.
- Site visit certificate duly signed by the authorized officer must be submitted with the bid.
- Any later claim of misunderstanding or missing items due to lack of site assessment will not be accepted.

9.9 Performance Guarantee

- Bidder must demonstrate a cleaning cycle using the installed system during commissioning.
- Effective water pressure and coverage must be verified.

9.10 Safety Features

- Auto-shutdown functionality shall be provided in case of failure or unsafe conditions, such as low water pressure or nozzle blockages.
- The system must include water pressure monitoring devices to ensure safe and consistent operation.

9.11 System Performance and Efficiency

- The cleaning system must be capable of achieving a maximum cleaning efficiency ensuring

that all solar modules are effectively cleaned of visible contaminants.

- The system must be designed to operate under local climatic conditions, including seasonal variations in temperature, humidity, dust, and wind, without compromising performance.
- The system should use minimum water per cleaning cycle while maintaining cleaning effectiveness. Water consumption and cleaning effectiveness shall be optimized to minimize waste and maximize performance.

9.12 Final Approval

- The bidder shall submit the complete design, material supply list (including makes) and installation plan for the Solar Module Cleaning Facility for approval within 10 days from the date of issuance of Contract/ work order to the client before procurement and installation. The system design must meet the client's requirements, site-specific conditions, and comply with all applicable local environmental regulations.
- All supply materials proposed must:
  a) Be ISI/ISO/IEC certified, wherever applicable.
  b) Be sourced exclusively from recognized Indian manufacturers with a proven track record of supplying quality and durable products for similar applications.

10. Array Junction Box / Combiner Box

- Array Junction Boxes / Combiner Boxes shall have to be used for termination of string prior connecting array with each inverter. They shall be equipped with appropriate functionality, safety (including fuses, grounding, contacts etc.) and protection.
- The Array Junction Boxes / Combiner Boxes shall be dust, vermin and water proof and made of poly carbonate plastic. The number of PV Array Junction Box / Combiner Box shall be as per plant configuration.
- The terminals will be connected to copper bus bar arrangement of proper sizes to be provided. The junction boxes will have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cable. Suitable markings shall be provided on the bus bars for easy identification and UV resistant cable ferrules will be fitted at the cable termination points for identification. Input termination through VDE / UL / TUV approved PV connectors made of Polyamide with IP 68 protection and Output termination through VDE / UL approved Glands made of Polyamide with IP 68 protection.
- Junction boxes should be equipped with fuses on both positive & negative input to protect the PV modules from short circuits.
- Copper bus bars / terminal blocks housed in the junction box with suitable termination threads.
- Earth terminal block for earthing.
- Surge Protection Devices are to protect the PV modules as well as the other electrical / electronic systems from transient over voltages created due to lightning and to reduce insulation breakdowns due to lightning.
- If the solar PV modules are not equipped with reverse blocking diode, then each Array Junction shall have suitable nature of fuses.
- Only DC fuses shall be provided for each string / input and DC disconnector of suitable size should be used.
- The Junction Boxes shall have suitable arrangement for the following:
  i) Combine groups of modules into independent charging sub arrays.

ii) Provide arrangements for disconnection for each of the groups.

iii) Provide a test point for each subgroup for quick fault location.

iv) To provide group array isolation.

v) The current carrying rating of the Junction Boxes shall be suitable with adequate safety factor to interconnect the Solar PV array.

- Bidder shall submit all the test reports / test certificates and compliance certificates before installation at site.
- **Accepted make: Hensell / Spellsberg / Trinity /Ensto/ Nordic.**

11. Power Conditioning Unit (PCU)

Power Conditioning Unit (PCU)/ Inverter shall consist of an electronic inverter along with associated control, protection and data logging devices.

The rated power/name plate capacity of the inverters shall be the AC output of the inverter at 50°C. Any inverters with AC output at 50°C, below the name plate/rated power of the inverter shall not be allowed.

The inverter supplied shall have minimum of 25% additional DC input Capacity.

All PCUs should consist of associated control, protection and data logging devices and remote monitoring hardware and compatible with software used for string level monitoring.

Dimension, weight, cooling arrangement etc. of the PCU shall be indicated by the Bidder in the offer. All PCUs shall be suitable for outdoor type installation.

Only those PCUs/ Inverters which are commissioned for more than said (AC) capacity solar PV projects till date in India shall be considered for this project. Bidder has to provide sufficient information to the satisfaction of the Employer before placing the final order for PCUs/Inverters.

The minimum European efficiency of the inverter shall be 98% load as per IEC 61683 standard for measuring efficiency. The Bidder shall specify the conversion efficiency of different loads i.e. 25%, 50%, 75% and 100% in its offer. The Bidder should specify the overload capacity in the bid.

The PCU shall be tropicalized and design shall be compatible with conditions prevailing at site. Provision of exhaust fan with proper ducting for cooling of PCU's should be incorporated in the PCU's, keeping in mind the extreme climatic condition of the site as per the recommendations of OEM to achieve desired performance and life expectancy.

The inverters shall have minimum protection to IP 66 (Outdoor) and Protection Class II.

Nuts & bolts and the PCU enclosure shall have to be adequately protected taking into consideration the atmosphere and weather prevailing in the area.

Grid Connectivity: Relevant CERC regulations and grid code as amended and revised from time to time

shall be complied. The system shall incorporate a unidirectional inverter and should be designed to supply the AC power to the grid at load end. The power conditioning unit shall adjust the voltage & frequency levels to suit the Grid.

All three phases shall be supervised with respect to rise/fall in programmable threshold values of frequency.

The inverter output shall always follow the grid in terms of voltage and frequency. This shall be achieved by sensing the grid voltage and phase and feeding this information to the feedback loop of the inverter. Thus control variable then controls the output voltage and frequency of the inverter, so that inverter is always synchronized with the grid. The inverter shall be self- commutated with Pulse width modulation (PWM) technology.

Operational Requirements for Inverter/ PCU

All PCUs must have the feature to work in tandem with other similar PCU's and be able to be successively switched "ON" and "OFF" automatically based on solar radiation variations during the day. Inverters must operate in synergy and intelligently to optimize the generation at all times with minimum losses.

The PCU shall be capable of controlling power factor dynamically.

Maximum power point tracker (MPPT) shall be integrated in the power conditioner unit to maximize energy drawn from the Solar PV array. The MPPT should be microprocessor based to minimize power losses. The details of working mechanism of MPPT shall be mentioned by the Bidder in its offer. The MPPT unit shall confirm to IEC 62093 for design qualification.

The system shall automatically “wake up” in the morning and begin to export power provided there is sufficient solar energy, and the grid voltage and frequency is in range.

Sleep Mode: Automatic sleep mode shall be provided so that unnecessary losses are minimized at night. The power conditioner must also automatically re-enter standby mode when threshold of standby mode reached.

Stand – By Mode: The control system shall continuously monitor the output of the solar power plant until pre-set value is exceeded & that value to be indicated.

Basic System Operation (Full Auto Mode): The control system shall continuously monitor the output of the solar power plant until pre-set value is exceeded & that value to be indicated.

PCU shall have provisions/features to allow interfacing with monitoring software and hardware devices.

Protection against faults for PCU

The PCU shall include appropriate self-protective and self-diagnostic feature to protect itself and the PV array from damage in the event of PCU component failure or from parameters beyond the PCU’s safe

operating range due to internal or external causes. The self-protective features shall not allow signals from the PCU front panel to cause the PCU to be operated in a manner which may be unsafe or damaging. Faults due to malfunctioning within the PCU, including commutation failure, shall be cleared by the PCU protective devices. In addition, it shall have the following minimum protection against various possible faults.

Grounding Leakage Faults: The PCU shall have the required protection arrangements against grounding leakage faults.

Over Voltage & Current: In addition, over voltage protection shall be provided between positive and negative conductor and earth ground such as Surge Protection Devices (SPD). Type 2 SPD devices should be employed tested as per IS 61643 part 11:2011 and UL 1449 4 th edition.
Nominal voltage -230V 50/60Hz and MCOV ≥ 300 V
The Surge Protection Devices shall have TOV Failsafe (L-N/N-PE) ≥ 440 V for 120 min. Nominal Discharge current (L-N/N-PE) - 20 kA/40 kA (8/20µ sec) & Max Discharge current (L-N/N-PE) - 50 kA/65 kA (8/20µ sec). Protective Elements are High Energy MOV & GDT and the Protection Modes for : 3 numbers of Type 2 SPD for connection between Phase and Neutral and one number of SPD between Neutral and Earth. Short- Circuit Current rating (Isccr) – 25 kA/50 Hz . Back up fuse shall be 315 AgG/gL. Health Status Indication required in all catridge including N to PE and Remote monitoring facility. Total Response time (L-N/N-PE) < 25 ns / < 100ns.

Galvanic Isolation: The PCU inverter shall have provision for galvanic isolation with external transformer, if required.

Anti-islanding (Protection against Islanding of grid): The PCU shall have anti islanding protection. (IEEE 1547/UL 1741/ equivalent BIS standard)

Unequal Phases: The system shall tend to balance unequal phase voltage (with 3- phase systems).

Reactive Power: The output power factor of the PCU should be of suitable range to supply or sink reactive power. The PCU shall have internal protection arrangement against any sustained fault in the feeder line and against lightning in the feeder line.

Isolation: The PCU shall have provision for input & output isolation. Each solid- state electronic device shall have to be protected to ensure long life as well as smooth functioning of the PCU.

PCU shall have arrangement for adjusting DC input current and should trip against sustainable fault downstream and shall not start till the fault is rectified.

Each solid state electronic device shall have to be protected to ensure long life of the inverter as well as smooth functioning of the inverter.

All inverters/ PCUs shall be three phase using static solid state components. DC lines shall have suitably rated isolators to allow safe start up and shut down of the system. Fuses & Circuit breakers used in the DC

lines must be rated suitably.

Standards & Compliances

PCU shall confirm to the following standards and appropriately certified by the labs:

- Efficiency measurement: IEC 61683
- Environmental Testing: IEC 60068-2 or IEC 62093
- EMC, harmonics, etc.: IEC 61000 series, 6-2, 6-4 and other relevant Standards.
- Electrical safety: IEC 62109 (1&2), EN 50178 or equivalent
- Recommended practice for PV – Utility interconnections: IEEE standard 929 – 2000 or equivalent
- Protection against islanding of grid: IEEE1547/ UL1741/ IEC 62116 ore equivalent
- Grid Connectivity: Relevant CEA/ CERC regulation and grid code (amended up to date)
- Reliability test standard: IEC 62093 or equivalent

The Bidder should select the inverter as per its own system design so as to optimize the power output.
Desired Technical Specifications of PCU.

- Sinusoidal current modulation with excellent dynamic response.
- Compact and weatherproof housing (indoor/ outdoor)
- Comprehensive network management functions (including the LVRT and capability to inject reactive power to the grid)
- Total Harmonic Distortion (THD) <3%
- No load loss < 1% of rated power and maximum loss in sleep mode shall be less than 0.05%
- Optional VAR control
- Power factor Control range: 0.9 (lead – lag)
- Humidity: 95% Non – Condensing
- Unit wise & integrated Data logging
- Dedicated Prefabs / Ethernet for networking

Inverter/ Power Condition unit must provide protection against:

- Over current
- Sync loss
- Over temperature
- DC bus over voltage
- Cooling Fan failure (If provided)
- Short circuit
- Lightning
- Earth fault
- Surge voltage induced at output due to external source
- Power regulation in the event of thermal overloading
- Set point pre-selection for VAR control
- Bus communication via -interface for integration
- Remote control via telephone modem or mini web server
- Integrated protection in the DC and three phase system
- Insulation monitoring of the PV array with sequential fault location

Ground fault detector which is essential for large PV generators in view of appreciable discharge current with respect to ground.

Over voltage protection against atmospheric lightning discharge to the PV array is required.

The power conditioner must be entirely self-managing and stable in operation.

A self-diagnostic system check should occur on start up. Functions should include a test of key parameters on start up.

PCU/inverter front panel shall be provided with display (LCD or equivalent) to monitor, but not limited to, the following:

- DC power input
- DC input voltage
- DC Current
- AC power output
- AC voltage (all the 3 phases and line)
- AC current (all the 3 phases and line)
- Power Factor

Documentary Requirements & Inspection

- The bill of materials associated with PCU's should be clearly indicated while delivering the equipment.
- The Vendor shall provide to the Employer, data sheet containing detailed technical specifications of all the inverters and PCUs, Type test reports and Operation & Maintenance manual before dispatch of PCUs.
- The Employer or its authorized representative reserves the right to inspect the PCUs/ Inverters at the manufacturer's site prior to dispatch.

Acceptable make: SMA / ABB / Schneider/ Refusol / Siemens / DELTA / KACO/ Goodwee/ Sungrow.

12. Switchboard box/DC Distribution Box (DCDB)/AC Distribution Box (ACDB) Panels

Successful Bidder shall provide sufficient no. of switchboards / DCDB / ACDB wherever required. ACDB will be designed to house Solar energy meter and CTs calibrated by TANGEDCO (if required).

All boxes/ panels should be equipped with appropriate functionality, safety (including fuses, grounding, etc.) and protection.

The terminals will be connected to bus-bar arrangement of proper sizes to be provided. The panels/ boxes will have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables.

Adequate rating fuses & isolating MCB/ MCCB should be provided.

The panels/ boxes shall have suitable arrangement for the followings:

- Provide arrangement for disconnection

- Provide a test point for quick fault location
- To provide isolation
- The current carrying rating of the boxes/ panels shall be suitable with adequate safety factor
- The rating of the boxes/ panels shall be suitable with adequate safety factor to interconnect to the local/ internal grid
- Thermal/ heat dissipation arrangement/ Vent for safe operation.
- Adequate number of spare terminals

The boxes/ panels shall be dust, vermin, and waterproof and made of thermoplastic/ metallic in compliance with IEC 62208, which should be sunlight/ UV resistive as well as fire retardant & must have minimum protection to IP 65 and Protection Class II.

All panels/ boxes shall be provided with adequately rated bus-bar, incoming control, outgoing control etc. as a separate compartment inside the panel to meet the requirements of the Plant. All live terminals and bus bars shall be shrouded. The outgoing terminals shall be suitable to receive suitable runs and size of cables required for the Inverter/Transformer rating.
The boxes/ panels must be grounded properly to ensure all safety related measures for safe operation. The parts of panel, wherever applicable, must be insulated properly.

All the Panels to be manufactured with sufficient space for working and must have temperature suitability up to 85° C with separate cable and bus bar alley.

13. Lightning Protection for PV Array

The source of over voltage can be lightning or other atmospheric disturbance. Main aim of over voltage protection is to reduce the over voltage to a safe level before it reaches the PV or other sub-system components as per NFC 17 – 102. Bidder to provide at least 4 numbers of Franklin rod/Lightning rod type lightning arrester, placed at strategic locations to protect the plant from lightning and shall not cause any shadow on the solar modules. Lightning protection should conform to IEC-62305. Bidder to provide calculations showing validations of the number of lightning arrestor.
Necessary foundation / anchoring for holding the lightning conductor in position to be made after giving due consideration to shadow on PV array, maximum wind speed and maintenance requirement at site in future.

The site is prone to lightning strikes and hence bidder is suggested to take utmost care while designing the lightning protection system. The Bidder shall submit the drawings, calculations and detailed specifications of the PV array lightning protection equipment to Employer for approval before installation of system.

The lightning conductor shall be earthed through 25X3 mm Galvanized Iron flat/ 35 sq mm Copper multistrand PVC insulated cable and connected to the grounding mats as per applicable Indian Standards with earth pits. Earth pits shall be provided as per the site requirement. Each lightning conductor shall be fitted with 2 individual earth pit as per required Standards including accessories, and providing masonry enclosure with cast iron cover plate having locking arrangement, watering pipe using charcoal or coke and salt as required as per provisions of IS. Resistance value of earth pits and grid to be in accordance with IS.

Vendor to provide with detail calculation for lightning. A total of 4 lightning rods and 8 earth pits dedicated for lightning is considered. However, the same to be verified after detailed calculation and arrangement design.

14. Earthing for PV Array

The photovoltaic modules, BOS and other components of power plant requires adequate earthing for protecting against any serious faults as guided by IEC 60364.

The earthing system shall be designed with consideration of the earth resistivity of the project area. Unless otherwise specified, earthing system shall be in accordance with IS: 3043 and IEEE 80, Indian Electricity Rules, Codes of practice and regulations existing in the location where the system is being installed.

The permissible system fault power level at HT side shall also be kept in consideration while designing the earthing system. Each array structure of the PV yard, LT power system, PCU, All junction boxes, ACDB & DCDB and any special earthing as required (electrical/electronic) shall be grounded properly as per IS 3043 - 1987. All metal casing / shielding of the solar power plant shall be thoroughly grounded in accordance with Indian electricity act / IE Rules.

The earthing for array and LT power system shall be made of 3.0 m long 40 mm diameter perforated GI pipe / chemical compound filled, double walled earthing electrodes including accessories, and providing masonry enclosure with cast iron cover plate having pad-locking arrangement, watering pipe using charcoal or coke and salt as required as per provisions of IS: 3043.

Each string/ array and MMS of the plant shall be grounded properly.

For each earth pit, a necessary test point shall be provided.

Earthing Mesh is to prepared and installed in entire power plant.

The array structures are to be connected to earth pits as per IS standards. Necessary provision shall be made for bolted isolating joints of each earthing pit for periodic checking of earth resistance.

The complete earthing system shall be mechanically & electrically connected to provide independent return to earth.

In compliance to Rule 11 and 61 of Indian Electricity Rules, 1956 (as amended up to date), all non-current carrying metal parts shall be earthed with two separate and distinct earth continuity conductors to an efficient earth electrode.

The Bidder should submit the earthing system design calculations along with the system layout for Owner approval prior to the installation of the system.

Unless otherwise specified, the earthing system primary and secondary grid conductors, equipment

connections shall be constructed with galvanized iron flat. However, the earthing of transformer neutrals, plc and inverter terminals and electronic earthing shall be provided using copper earthing conductor only.

15. Energy Meter (as per Schedule of Work)

Bidirectional Meter for Net Metering: This meter is capable of bidirectional metering. Power is monitored in both directions (upstream and downstream from the meter). The meter is housed in a thermoplastic enclosure suitable for installation of DIN rail mounting/panel mounting.

The bidirectional meter is provided at HT Switchboard of Electrical System of the plant. All necessary accessories and modification of the existing control circuit shall be under the scope of this contract. Bidder to visit site to gather information about Owners HT System before submission of their bid.

Acceptable Make: EM 6400 IE 0.5 of Schneider or equivalent of L&T (or, as approved by Local Electricity Board) only.

16. Safety Net (for Roof Top Installation – applicable if specifically mentioned in the Schedule of Work)

A safety net should be provided under the asbestos/aluminium sheet for the safety of people working above as well as below the roof. Safety net having tested quality IS:5175 manufactured with 12mm poly propylene border rope and 4 mm poly propylene rope with mesh of size 4”x4” with sufficient strength and shall be with braided safety net.

17. Structural Ladder

For safe and convenient personnel access from the ground floor to the top of the PEB (Pre-Engineered Building) warehouse, the bidder shall provide and install a heavy-duty vertical caged structural ladder constructed from Mild steel, 2 coat primer and 2 coat enamel paint conforming to IS 807 and OSHA/IS 3696 (Part 1) standards. The ladder shall be securely anchored to the structural façade and include a cylindrical safety cage starting from 2.2 meters above ground level, extending up to 1 meter above the roof level, as per safety guidelines.

In addition:

a) A roof access ladder (if separate from vertical ladder) or appropriate continuation shall be provided to facilitate entry onto the roof where the solar PV modules are installed.
b) Platform rest stages shall be incorporated if the vertical climb height exceeds 9 meters, to ensure safety and prevent fatigue-related risks.

18. Safety Walkway

To facilitate safe access during installation, routine maintenance, and cleaning of solar panels, a roof-mounted walkway system shall be provided between solar module rows. The walkway shall be:

- Made from non-corrosive, anti-skid galvanized steel grating of **TATA/ JSW make or equivalent ISI-certified manufacturer**.

- Minimum width: 450 mm, height above roof: as per module layout clearance, with proper support structure.
- Anchored with SS304/galvanized fasteners and compatible supports to avoid interference with roof sheeting or water flow.

To mitigate fall hazards around roof edges, roof hatches, or skylights, the following safety measures shall be adhered to:

- All personnel accessing the rooftop must use Personal Protective Equipment (PPE) including full-body harnesses, fall arrest lanyards, and anchor points.
- Provision of roof lifeline system or anchor rings fixed at designated maintenance zones is recommended.
- Adequate warning signage, guardrails, or parapet walls shall be incorporated where fall height exceeds 2 meters and where feasible.

All access and safety systems must comply with applicable local building codes, Indian safety standards (IS 3696/IS 875), and international best practices for working at heights.

Rooftop Water Seepage Prevention

The bidder shall ensure that the installation of the rooftop solar power plant is carried out in a leakage-proof and water-seepage-resistant manner, without compromising the structural integrity or waterproofing of the rooftop.

All drilling, anchoring, cabling, and mounting activities must be performed using appropriate sealants, flashing systems, gaskets, and waterproofing compounds in accordance with the following applicable standards:

(i) IS 3067:1988 – Code of Practice for General Design Details and Preparatory Work for Damp Proofing and Waterproofing of Buildings

(ii) IS 2645:2003 – Specification for Integral Waterproofing Compounds

(iii) NBC 2016 – Part 6 (Section 1: Structural Design) – Guidelines related to waterproofing and structural safety

For PEB structures, all roof sheet penetrations must be sealed with non-corrosive, UV-resistant, and thermally stable weatherproofing materials, and the method of sealing shall be compatible with metal roofs to prevent corrosion or thermal stress-related damage.

The contractor shall be solely responsible for ensuring that all rooftop penetrations (e.g., for module mounts, cable trays, conduits, fasteners) are effectively sealed. All joints and anchoring points shall be treated to prevent rainwater ingress and long-term deterioration.

Inspection and Post-Installation Testing Requirements:

- The contractor shall conduct a **joint pre-installation inspection** with the Employer's representative to assess the existing roof condition and plan for water-seepage prevention measures.
- Upon completion of installation, a **post-installation water leakage test** (such as ponding test, spray test, or any suitable non-destructive test method) shall be conducted in the presence of the Employer's representative.
- A **site inspection checklist and waterproofing compliance report** shall be submitted post-installation, detailing the sealing materials used, methods of application, and confirmation of test results.
- Any leakage or seepage observed during testing or within the **defect liability/warranty period** shall be rectified by the contractor at **their own cost and risk**, without affecting the structural or operational integrity of the solar system or building.

19. Documentation

The bidder shall furnish three (3) complete sets of detailed Installation, User, and Operation & Maintenance (O&M) Manuals, along with one (1) soft copy in a USB flash drive (pendrive), to the client at the time of system commissioning and handover.

Each submission shall include the following:

Manuals and Documentation

- Comprehensive system description, including working principles and operational guidelines.
- Detailed array layout, system block diagram, and single-line diagrams (SLDs).
- Manufacturer's technical datasheets/catalogues for all major components: PV modules, inverters, mounting structures, junction boxes, surge protection devices, cables, etc.
- Warranty certificates and OEM authorization documents for critical components.
- Step-by-step procedures for preventive maintenance, inspection, cleaning, and system servicing.
- Troubleshooting guides with fault codes, diagnostics, and recommended corrective actions.

CAD Drawings (A1/A3 size as applicable)

- Approved General Arrangement Drawings (GADs) of the plant layout.
- Roof layout plans showing module positioning, walkways, ladders, cable routing, and inverter placement.
- Foundation / mounting structure details, including anchor bolt layouts if applicable.
- All drawings shall be submitted in AutoCAD (.dwg) and PDF formats, with clear revision history.

Statutory and Regulatory Approvals

i) Documentation of statutory approvals at various project stages, including:

- Local DISCOM/utility approval for grid synchronization.
- Electrical Inspectorate approval (if applicable).
- CEIG (Chief Electrical Inspector to Government) approvals.
- Safety compliance certificates and test reports as per applicable IEC/IS standards.
- Net metering application, approval, and commissioning certificates.

ii) Copies of test reports and commissioning certificates duly signed by the client's representative.

Submission Format

i) Three (3) bound hard copies of the complete manual set including printed drawings (folded and inserted in file).

ii) One (1) USB flash drive (pendrive) containing all documents, drawings, and test certificates in organized folders with editable and non-editable (PDF) formats.

All submissions must be clear, legible, and professionally formatted in English. The complete documentation package shall be submitted to the client within 15 days of project commissioning and is subject to final review and approval.

20. Other Facilities for Installation

a) Staircases: The bidder should provide 2 industrial staircases with side railing and foundation. The specifications for the staircase material as per site conditions and industry standard.

i) The bidder should design the staircases for stability and provide suitable foundations.

ii) The staircases should be epoxy painted.

b) Safety Railing: M.S Fabricated safety railings should be provided wherever necessary. The Safety railing should be epoxy painted as well.

c) Lifeline: A Stainless steel lifeline and necessary accessories should be provided by bidder for safety of personnel during maintenance activity.

The bidder should provide the staircase, Safety lifeline and walkway before commencement of any installation activity on the roofs.

d) Net Meter and Solar Generation Meter:

The existing Main Meter will be replaced with a Bi-Directional Net Meter. The specifications of this meter will be as per TANGEDCO guidelines. The Solar Generation meter will be unidirectional and will be as per TANGEDCO Specifications. Supply, testing and installation of both these meters will be in the scope of the bidder. The testing fees for the same will be paid by successful bidder to TANGEDCO.

21. Warranties & Guarantees

a) The selected bidder shall give full warranty that all the equipment/ devices/ instruments/systems/sub-systems/any materials supplied under the CONTRACT shall be new and of first quality according to the specifications and shall be free from defects (even concealed faults, materials & workmanship).

b) If any trouble or defect, originating with the design, material, workmanship, performance of any material/ equipment arises at any time prior during DLF, the selected bidder shall, at his own expense and as promptly as possible, make such alterations, repairs and replacements as may necessary to permit the materials to function in accordance with the specifications and to fulfil the foregoing guarantees.

c) The mechanical structures, electrical works and overall workmanship of the Grid Connected Solar PV

Plant must be warrantied for 1 year from the date of commissioning of the plant. The date of commissioning that would be considered is the day on which the inverter is synchronized with the TANGEDCO grid with all permissions pertaining from Electrical inspectors office and TANGEDCO and power delivered to Balmer Lawrie

d) Each solar PV module used in the solar power plant, shall be warranted by the manufacturer with free replacement if the output peak wattage capacity under standard test condition (STC), falls below 90% in first 12 (twelve) years and falls below 80% in 27 (twenty seven) years, from the date of successful commissioning of SPV power plant. The Solar Modules shall also be warrantied against manufacturing defects for 10 years from the date of commissioning of the Solar PV plant. The warranty shall be transferred in the name of Balmer Lawrie after commissioning of the Solar PV Plant.

- String Inverters and data monitoring system shall be warrantied for 5 years provided by OEM. The warranty shall be transferred in the name of Balmer Lawrie after commissioning of the Solar PV Plant. The Warranty of the Solar Inverter should be extendable up to 20 years by the OEM with payment of necessary additional warranty charges.
- All other components, equipments like Inverter Disconnect Panels, Solar LT Panel, AC & DC cables, connectors, Module Mounting Structure, foundations, metering cubicles etc should be warrantied for 1 years from date of commissioning of the Solar PV Plant. The warranty from all OEM equipments shall be transferred in the name of Balmer Lawrie after commissioning of the Solar PV Plant

Inspection, Testing:

i) Successful bidder to provide Balmer Lawrie the Quality Assurance plan (QAP) and drawings for approval before starting the installation work. Drawings shall include, SLD of Solar PV System, String design drawings, Earth pit Drawing, Solar PV Plant Layout drawing showing all components/equipment locations, Solar Module Mounting Structure GA drawing, Foundation drawing for mounting structure, Solar LT Panel GA drawing with metering arrangement, other foundation drawings, LA drawing with protection radius clearly shown as per the requirements of the Electrical Inspector.

ii) Tests certificate from the manufacturer for the all major equipments like Solar modules, inverters, DC Cables. AC Cables shall be submitted along with the handing over documents.

22. Scope of Annual Maintenance Contract:

The Defect Liability Period is for 12 months from the date of commissioning of the Solar PV Plant. The Annual Maintenance Contract of the Solar PV Plant would commence immediately after the Defect Liability Period. The duration of the AMC will be 5 years from the date of commissioning of the Solar PV plant. The Service Engineer of the selected bidder should visit the site once every 3 months for preventive maintenance of the Solar PV Plant. Periodic Cleaning of Solar Modules is not in scope of the AMC.

The scope of the AMC activities would be as under:

Sr. No	Activity	Frequency
1.	Visual Inspection of Modules	Every 4 months
2.	Checking string voltages of modules	Every 4 months
3.	Inverter Fan Checking and cleaning	Every 4 months
4.	Checking DC SPD's	Every 4 months

5.	Checking the DC cable connections from Modules to Inverter	Every 4 months
6.	Checking and tightening of AC Connections at inverter input	Every 4 months
7.	Checking and tightening AC Connections at Inverter Disconnect Panels, Solar LT panel and Ma	Annually
8.	Checking AC SPD's in IDP's	Every 4 months
9.	Cleaning of IDP and Solar LT panel	Annually
10.	Checking voltages and currents at all Panels and Inverters	Every 4 months
11.	Checking and tightening connections for structural/ body earthing, lightening arrestor, inverter and panels	Annually before the monsoon season
12.	Checking/ tightening of Modules bolts	Annually before the monsoon season
13.	Random Check of Module Mounting structure	Every 4 months
14.	Earth pit inspection and testing	Every 4 months
15.	Remote Monitoring system	Every 4 months
16.	Plant Fitness report	Every 4 months
17.	Any unscheduled repair maintenance	As per requirement

The selected bidder must under the repair and replacement carryout the activities as under

a) Repair or replacing the damaged equipment's like inverter within 14 days from the date of acceptance of defect by the OEM. (The Selected bidder must register the complaint and ensure that the warranties are enforced)
b) Replacing the defective solar module within 14 days from the date of acceptance of defect by the OEM. (The Selected bidder must register the complaint and ensure that the warranties are enforced).
c) Replacing the faulty Cables/ MCB's/ fuses/ Connectors /SPD's/ s etc so that the system remains safe and healthy to operate with 7 days
d) The penalty applicable for non-rectification of the fault beyond 30 days will be @ ₹3,000/- (Rupees Three Thousand only) per day. However, the total accumulated penalty during the year shall be sealed to the maximum of 10% of the annual charge of the AMC.

Note: The selected bidder must have all necessary tools and equipment's duly calibrated by accredited laboratories during the AMC.

23. Permissions

a) The selected bidders should seek necessary permissions from Electrical Inspectors office for connecting the Solar PV Plant to the Grid as per the Electricity Act of 2003 and the further amendments time to time.
b) The selected bidder should seek necessary permissions from TANGEDCO for connecting the Solar PV Plant under net metering policy of 2019 and latest amendments thereof.

24. Document submission at various Stages

1) **Documents to be submitted for Technical Evaluation**

a) Datasheets of Solar Modules (Only 1 make to be selected)
b) Datasheets of Solar String Inverters (Only 1 makes to be selected)

c) Proposed SLD
d) Proposed Solar Module Layout

2) **Documents to be submitted by Selected Bidder for Notice to Commence (NOC) work from Balmer Lawrie (Submission within 10 days from date of LOI or PO whichever is earlier)**

a) Project Activity Schedule / Bar Chart
b) Solar PV Plant Layout Drawing showing the location of Inverters, Inverter Disconnect Panel, Lightning Arrestors (LA), Earth Pits, Solar LT Panel, etc.
c) Lightning Arrestor Coverage Drawing along with design calculations
d) Single Line Diagram for Solar PV Power Generating System
e) Earthing System Drawing along with design calculations
f) Any additional drawings or documents may be required by Balmer Lawrie.

3) **Handing Over documents (Within 7 days from Successful Commissioning of the Solar PV Plant)**

a) "As-Built" drawings
b) Operation manual
c) Maintenance manual

Three (3) sets of the Installation / Operation / User and Maintenance Manuals shall be submitted. These manuals shall contain comprehensive system details including, but not limited to, array layout, system schematic, inverter specifications, technical catalogues of all major system components, warranty certificates, and system working principles. The manuals must also provide step-by-step procedures for system maintenance and troubleshooting. The manuals shall include the following minimum information:

- Overview of Solar Photovoltaic Modules and String Inverters
- Clear instructions for installation, operation, and maintenance of the Solar PV modules, string inverters, and associated equipment
- List of Do's and Don'ts
- Detailed guidelines for regular maintenance and troubleshooting
- Contact details of service personnel or authorised support centre for failure or complaints.

d) Approved Layout and Electrical Single Line diagram by Electrical Inspectors office.
e) Receipts for Meter Testing, Current Transformer (CT) Testing, and any other government fees paid by the selected bidder.
f) Sanction Letter for Net Metering issued by the respective DISCOM.
g) Net Metering Agreement executed between DISCOM and Balmer Lawrie.
h) Factory Test Certificates and IEC Certificates for Solar Inverters and other OEM-supplied components.
i) Flash Test report of Individual Solar Modules.
j) Factory Test Certificate for ACDB and Solar LT Panel
k) Factory Test Report of ESE Lightning Arrestor
l) Earth resistance report for individual earthpits.
m) Solar PV Plant Installation Report

n) Solar PV Plant commissioning report.

o) Soft Copy Submission: One (1) pen drive containing the complete set of project documents in soft copy format, including:

- All approved drawings in CAD (DWG) and PDF format
- All statutory approvals and permissions
- Statutory fee receipts
- Certified copies of final bills and payments
- Scanned copies of all documents mentioned under handing-over requirements above
- Operation and Maintenance Manuals in PDF format

25. Generic

1) **Data Sheet of the product(s)/service(s)**: Shall be provided by the tenderer

2) **Escalation Matrix**: Shall be filled in by the tenderer for Service Support

3) **Site Visit**: The intending bidders must visit the site and familiarised themselves thoroughly with the site conditions before submitting the tender. Non-familiarity with the site conditions will not be considered reason either for extra claims or for not carrying out the work in strict conformity with the drawings and specifications. The tenderer is advised to visit and examine the delivery site/client office and obtain for itself on its own responsibility all information that may be necessary for preparing the Bid. The costs of visiting the site shall be borne by the tenderer.

4) The successful tenderer has to supply all essential accessories required for the successful installation and commissioning of the goods/services supplied.

5) Scope of work also includes liasioning and obtaining necessary approval and permissions to run the PV Solar Plant from Electrical Inspector/Competent Authorities and net metering from TANGEDCO. The price quoted for "TURNKEY DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ROOF TOP GRID CONNECTED 200 kWp SOLAR PHOTO VOLTAIC POWER GENERATING SYSTEM ALONG WITH 5 YEARS COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT" should be inclusive of cost of liasioning and obtaining necessary approval.

6) This project is being 'Works Contract Services', 12% GST will be applicable on 70% of the total contract value and 18% on the remaining 30% value. A successful bidder has to raise invoices accordingly.

7) The contractor has to submit the Bill of quantity based on approved drawing before initiating the supply of these materials. Only upon verification, the invoice towards supply will be certified for payment.

Section 8: Special Terms & Conditions

1. Completion Period

Time is the essence of the contract. The time schedule for total work according to the contract shall be Five (5) Calendar Months from the date of placement of Contract/ work order.

2. RIGHT OF OWNER TO TERMINATE THE CONTRACT

(i) If the Vendor being an individual or a firm commits any 'Act of Insolvency' or shall be adjudged as insolvent or being an Incorporated Company shall have an order for compulsory winding up made against it, or pass an effective resolution for winding up voluntarily or subject to the supervision of the Court or shall be unable to carry out and fulfil the contract and to give security therefore, is so required by the Engineer-In-Charge.

Or if the Vendor (whether an individual, firm or incorporated company) shall suffer execution to be issued.

Or shall suffer any payment under this Contract to be attached by or on behalf of any of the creditors of the Vendor.

Or shall assign or charge, encumber or sublet this contract without the consent in writing of the Engineer-In-Charge first obtained.

Or shall charge or encumber this contract or any payments due or which may become due to the Vendor thereunder.

Or if the Engineer-In-Charge shall certify in writing to the Owner that the Vendor –

a) has abandoned the Contract or

b) has failed to commence the works, or has without any lawful excuse under these conditions, suspended the progress of the works for 14 days after receiving from the Engineer-In-Charge written notice to proceed or

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

d) has used sub-standard or inferior material or materials not conforming to the specifications or has employed inferior workmanship in carrying out the works or part thereof or has not exercised due diligence in execution of the said work, or

e) has neglected or failed persistently to observe and perform all or any of the acts, deeds, matters or things by this Contract to be observed and performed by the Vendor
requiring the Vendor to observe or perform the same, or

f) has to the detriment of good workmanship or in defiance of the Engineer-In-Charge's instructions to the contrary, sub-let or sub-contracted any part of the contract, or

g) has failed to comply with the Engineer-In-Charge's instructions, or

h) has in the opinion of the Engineer-In-Charge committed any breach of this Contract, then and in any of the said cases the Owner with the written consent of the Engineer-In- Charge may notwithstanding any previous waiver, after giving seven days' notice in writing to the Vendor terminate the Contract, but without hereby affecting the right of the Owner of the powers of the Engineer-In-Charge or the obligations and liabilities of the Vendor in respect of work, the contract shall continue enforce as fully as if the contract has not been so determined and the obligations of the Vendor in respect of work subsequently executed shall continue as if the works subsequently executed has been executed by or on behalf of the Vendor. And further, the Owner by its agents or servants shall been titled forthwith to enter upon and take possession of the works and all plants, tools, scaffoldings, sheds, machinery, steam and other power implements, machinery equipment and materials lying upon the site or the adjoining lands or roads and use the same as its own property and to employ the same by means of its own servants and workmen in carrying on and completing the work or by employing any other Vendor and the Vendor shall not in any way interrupt or do any act, matter or things to prevent, intimidate or hinder such other Vendor or other person or persons employed for completing and finishing or using the materials and plant for the work. When the works shall be completed or as soon thereafter as convenient, the Engineer- In-Charge shall give a notice in writing to the Vendor to remove his surplus materials and plant and should the Vendor fail to do so within the period of 14 days after receipt thereof by him, the Owner shall sell the same either by public auction or a private sale and shall be given credit to the Vendor for the amount realized. The Engineer-In- Charge shall thereafter ascertain and certify in writing under this hand what (if any- thing) shall be due or payable to or by the owner, the expense or loss which the owner shall have been put to in procuring the works to be completed and the amount, if any, owing to the Vendor and the amount which shall be so certified, shall thereupon be paid by the owner to the Vendor or by the Vendor to the Owner, as the case may be and the Certificate of the Engineer-In-Charge shall be final and conclusive and binding on the parties hereto. In the event of termination under this Clause, the Owner shall not be bound by any provision of this Contract to make any further payment to the Vendor until the said works are completed.

i) Owner shall, at any time, be entitled to determine and terminate the Contract, if in the opinion of the Owner the cessation of the Work becomes necessary owing to paucity of funds or for any other cause whatsoever, in which case the cost of approved mate- rials at the Site at current market rates as verified and approved by Engineer-In-Charge and of the value of the Work done to date by the Vendor shall be paid for in full at the specified in the Contract. A notice in writing from the Owner to the Vendor of such determination and termination and the reason therefore shall be the conclusive proof of the fact that the Contract has been so determined and terminated by the Owner.

j) Should the Contract be determined under sub-clause of this clause and the Vendor claims payment to compensate expenditure incurred by him in the expectation of completing the Work, the Owner shall consider and admit such claim as are deemed fair and reasonable and are supported by the vouchers to the satisfaction of the Engineer-In-charge. The Owner's decision on the necessity and propriety of such expenditure shall be final and conclusive and binding on the Vendor.

3. <u>Service Timelines</u>

Timely servicing / rectification of defects during warranty period & CMC period: After having been notified of the defects / service requirement during warranty period, seller has to complete the required service / rectification as per instruction/requirement of owner.

4. On-site Warranty

The standard manufacturer's warranty for all the supplied items against defects in materials and workmanship should be one years from the date of installation. After the expiry of warranty, the product should be supported through Annual Comprehensive Maintenance Contract (CMC) for minimum up to five years from the date of installation. Balmer Lawrie reserves the right to enter into a CMC agreement with the successful tenderer / OEM after expiry of the warranty period at above mentioned rate and the payment for the CMC charges would be made annually before rendering of the CMC Services of the relevant CMC period. The Performance Bank Guarantee of the successful tenderer shall be forfeited if it fails to accept the CMC contract when called upon by Balmer Lawrie. CMC would include the cost of preventive and breakdown maintenance (Upload the undertaking).

5. Pre-Dispatch Inspections (goods)

Before shipment, vendor should completely test the system in its factory.

Materials: should be checked by the Vendor
Construction and Mounting: should be checked by the vendor

6. Preventive Maintenance visit

Vendor must conduct the pre-visit to ascertain preventive maintenance requirements.

7. Availability of spares

The bidder shall ensure that necessary spares are always available with their service centers in the Chennai to provide the necessary after sales service to Balmer Lawrie during the performance guarantee period and AMC period. Documentary evidence or letter declaration for the details of service centers situated in Chennai from the plant site should be enclosed with the offer.

8. INSTALLATION, COMMISSIONING & TRAINING

The installation, testing and commissioning of the equipment shall be carried out by competent engineers/technicians of the Tenderer at the work site. During installation / commissioning, Tenderer's engineer / technician shall impart necessary training to Owner's personnel in driving and servicing the equipment to the level of clear understanding / adoptions. No separate charge shall be payable by the Owner for the purpose.

9. QUANITITY VARIATION

The quantity as mentioned in the Schedule of Work/ Price Bid is indicative. The selected bidder/Vendor shall, however, ascertain the exact quantity required at site, obtain approval from the owner on quantity, supply and install accordingly. As the work progresses, it is possible that there will be quantity variations to any extent & omission of items. Specially, the quantity of cables, steel structure may vary extensively based on detailed design requirements/site conditions. Under all such circumstances, the rates should be firm.

10. TESTING & INSPECTION

i. All materials required for the execution of the work should be new and should conform to applicable standard specification and approved by the Engineer-in-Charge before actually put to use. Commencement of work without prior approval shall be entirely at the risk and cost of the Vendor. No delay due to non-availability of the materials, tools, equipment etc. will be entertained by the Owner. In the case of certain Machinery / Equipment, the Engineer-in-Charge may inspect the item for approval before they are brought to site.

ii. The Owner shall be entitled at all times at the risk of the Vendor to inspect and/or test by themselves or through any independent person(s) or agency (ies) appointed by the owner and/or to direct the vendor to inspect and/or test all material(s), items and com- ponents whatsoever supplied or proposed for supply, for incorporation in the work inclusive, during the course of manufacture or fabrication by the Vendor and/or at the Vendors work or otherwise, such materials or items or components. The inspection and/or test shall be conducted at the expense of the Vendor and if conducted by the Vendor may be directed by the Owner to be conducted by agency (ies) nominated by Owner and/or in the presence of witness (ess) nominated by the Owner.

iii. The Vendor shall furnish to the Engineer-in-Charge for approval when requested or as required by the specification or other contract documents, adequate samples of mate- rial intended for incorporation in the works. Such sample to be submitted before the work is commenced permitting sufficient time for tests, examination(s) thereto by the Engineer-in-Charge. All materials furnished and incorporated in the work shall conform to the sample(s) in all respects.

iv. The Engineer-in-Charge shall be entitled to reject at any time any defective materials, item or components, (including special manufactured or fabricated items or components) supplied by the Vendor for incorporation in the works.

v. The Vendor shall at all times ensure highest standard of workmanship, relating to the work to the satisfaction of the Engineer-in-Charge. The Engineer-in-Charge shall have the power to inspect the work as also to test or instruct the vendor to test the works or any structure, material or component thereto at the risk and cost of the Vendor, either by the Vendor or by any agency(ies) nominated by the Engineer-in-Charge or Site Engineer on his behalf.

vi. The Vendor shall provide all facilities, instruments material / labour and accommodation required for testing the works (including checking the set time out of work) and shall provide Engineer-in-Charge all assistance necessary to conduct the test whenever and wherever required.

vii. The Engineer-in-Charge on inspection or test be not satisfied with the quality or workmanship of any work, structure, material, component (decision of the Engineer-in- Charge being final in this behalf), the Vendor shall re-perform, replace, re-install and / or re-erect as the case may be such work, structure material or component, as no such rejected work, structure, material, item or component shall be re-used without the prior permission of Engineer-in-Charge.

viii. Notwithstanding any provided in the foregoing clauses hereto and notwithstanding the Engineer-in-Charge/ or his representative has inspected tested and/or approved any particular work, structure, material or component, such inspection, test or approval shall not absolve the Vendor of his full responsibilities under the contract inclusive or relative to the specification, performance guarantee. The said inspection and test procedure being intended basically for satisfaction of the Owner / prima-facie erection and/or material and

equipment supplied for incorporation in the work is in order.

ix. On no account shall the Vendor proceed with the covering up or otherwise placing beyond reach of inspection or measurement any work before necessary inspection, entries are filled in the Site Inspection Register by the Engineer-in-Charge or his authorized representative. Should the vendor do so the same shall be uncovered at the vendor's risk and expense for carrying out the inspection and measurement. Measurement of Work shall be recorded as per the direction of Engineer-in-Charge.

x. If any tests are required to be carried out in connection with the work or materials or workmanship not supplied by the Vendor, such tests shall be carried out by the Vendor as per the instructions of Engineer-in-Charge and cost of such tests shall be reimbursed by the Owner.

xi. The owner reserves the right to inspect the Equipment at Tenderer's works by them or through a third party nominated by the Owner. Tenderer will provide all assistance to Owner's inspector in carrying out such inspection at Tenderer's works free of any charges.

11. Warranty

The Vendor will repair and/or replace all defective parts, components / fittings, accessories etc. which shall be notified to them in writing within the Defect Liability Period Promptly at free of cost. The vendor will provide similar warranty on the parts, components, fittings, accessories etc. repaired and/ or replaced.

12. Site Particulars

The intending tenderers shall be deemed to have visited the site and familiarized themselves thoroughly with the site conditions before submitting the tender. Nonfamiliarity with the site conditions will not be considered a reason either for extra claims or for not carrying out the work in strict conformity with the drawings and specifications.

13. SUPPLY OF MATERIAL

i. All materials required for the work shall be supplied by the Vendor. In addition, all materials required for temporary and enabling work shall be arranged and provided by the Vendor. All incidental expenses, loading, unloading, transportation, handling etc. shall be the responsibility of the Vendor and cost towards such expenses should be included in the finished item rates.

ii. All other materials, as required to complete the works in all respects according to the contract rates shall be inclusive of all freight, taxes, duties, loading, unloading, transporting, handling and storage charges etc. GST shall be payable separately as per applicable rate.

14. Time for Completion of Work

Time is the essence of the contract. The tenderer shall submit their plan to complete the whole work according to the overall time allowed for the execution of work as given in the Tender Documents and NIT.

i) The Vendor shall complete in all respects in accordance with the Contract, the entire work at each job site within the time specified in this behalf in the Time Schedule.

ii) If the Owner so requires, the Progress Schedule in the form of CPM, giving the latest dates of starting and latest dates of finishing of various operations comprising the work as also the activities in the critical path and latest dates for achievement of specific milestones in respect of the work so as to complete in all respects the works (including testing and consequential operations) within the time provided in the Time Schedule. This Progress Schedule should also indicate the interlinking of the various activities and bring to light the specific/critical items on which the inputs from the owner/ Engineer-in-Charge/Consultant or

other agencies, if any, would be required, to ensure adherence to the schedule.

iii) If the Vendor shall fail to submit to the Owner/ EIC a Progress Schedule as envisaged above or if the Owner/EIC and Vendor fail to agree upon the Progress Schedule as envisaged above, then the Engineer/ Officer-in-Charge shall prepare the Progress Schedule (the dates of progress as fixed by the Engineer/ Officer-in-Charge being final and binding upon the Vendor except as herein otherwise expressed provided), and shall issue the Progress Schedule so prepared to the Vendor, which shall then be the Approved Progress Sched- ule and all the provisions of clauses 14 ii) shall apply relative thereto.

iv) Any reference in the Contract Documents to the Approved Progress Schedule" or to the "Progress Schedule" shall mean the "Approved Progress Schedule" specified in clause 14 ii) above or the "Progress Schedule" prepared and issued by the Engineer/ Officer-in- Charge as specified in clause 14 iii) above, whichever shall be in existence. In the absence of such approved Progress Schedule or such Progress Schedule prepared by the Engineer/ Officer-in-Charge, the Progress Schedule first prepared by the Vendor (with incorporation of the Owner's/ Engineer/ Officer -in-Charge's comments thereon if any), shall until such approved Progress Schedule or such Progress Schedule prepared by the Engineer-in- Charge comes into existence, be deemed to be the Progress Schedule for the purpose of the contract.

v) Within 7(seven) days of the occurrence of any act, event or omission which, in the opinion of the Vendor, is likely to lead to delay in the commencement or completion of any particular work(s) or operation(s) or the entire work at any job site(s) and in such as would entitle the Vendor to an extension of the time specified in this behalf in the Progress Schedule(s), the Vendor shall inform the site engineer and the Engineer-in-Charge in writing of the occurrence of the act, event or omission and the date of commencement of such occurrence. Thereafter, if even upon the cessation of such act or event or the fulfilment of the omission, the Vendor in his opinion that an extension of the time specified in the Progress Schedule relative to the particular operation(s) or item(s) or work or the entire work at the job site(s) is necessary, the Vendor shall within 7 (seven) days after the cessation or fulfilment as aforesaid make a written request to the Engineer-in-Charge for extension of the relative time specified in the Progress Schedule and the Engineer-in-Charge may at any time prior to completion of the work extend the relative time of completion in the Progress Schedule for such period(s) as he considers necessary, if he is of opinion that such act, event or omission constitutes a ground for extension of time in terms of the Contract and that such act, event or omission has in fact resulted in insurmountable delay to the Vendor.

   (i) The application for extension of time made by the Vendor to the Engineer-in-Charge should contain full details of
      a) The notice under clause 14 v) with a copy each of the notice sent to the Engineer in- Charge and Site Engineer.
      b) The activity for the Progress Schedule affected.
      c) The bottleneck(s) or obstruction(s) perceived/ experienced, and the reason(s) there- for,
      d) Extension required/ necessitated on account of c) above
      e) Extension required/ necessitated on account of reasons attributable to the Owner,
      f) Extension required/ necessitated on account of force majeure reasons, and
      g) The total extension of time (if any) required/ necessitated for completion, taking the above into account and after eliminating all overlaps.

   (ii) The opinion/ decision of the Engineer-in-Charge on this behalf and as to the ex- tension of time necessary shall, subject to the provisions of clause 14 vi) hereof, be final and binding upon the Vendor.

vi) Subject as elsewhere herein or in the contract documents expressly provided, only the existence of force majeure circumstances as defined in 14 vii) hereof shall afford the Vendor a ground for extension of time

for completion of the work or any part of the work or any operation(s) involved therein, and specifically without prejudice to the generality of the foregoing, inclement weather, strike, shutdown, third party breach, delay in supply of material(s) or commercial hardship shall not afford the Vendor a ground for extension of time or relieve the Vendor of his/its full obligations under the Contract, nor will any forced shutdown or idleness or other impediment in progress or completion of the work due to any reason whatsoever afford the Vendor a ground for extension of time or relieve the Vendor of his/its full obligations under the Contract except and to the extent otherwise elsewhere herein specifically provided, nor shall any shut down or idle time charges be payable by the Owner to the Vendor for delay in the commencement, progress or completion of the work due to any reason whatso- ever, including due to the existence of force majeure circumstances.

vii) The term "Force Majeure" as employed in this contract shall mean wars (declared or undeclared) or revolutions, civil wars, tidal waves, fires, major floods, earthquakes, epidemics, pandemic, quarantine restrictions and freight embargoes and transporters strike affecting the country as a whole.

viii) Upon an extension of the time for completion of the work or any part of the work or any operation(s) involved therein pursuant to clause 14 v) hereof, the extended date/time of completion shall be deemed to be the relative date of completion in the Progress Schedule, and such extension shall constitute the sole remedy of the Vendor for and/or arising out of such delays, and the Vendor hereby waives any and all contrary rights.

ix) The mere fact that the Owner shall not have terminated the contract or that the Owner or Engineer-in-Charge has permitted the Vendor, for the time being to continue with the work for its completion shall not prejudice the full rights and remedies available to the Owner under the contract arising out of the delayed completion, including the right of Liquidated Damages and/or termination. Such permission(s) shall unless specifically stated to be an extension of time under clause 14 v), not be construed as extension(s) of time extension under clause 14 v), and shall merely constitute an indication or intimation, as the case may be, of the Owner's willingness, for the time being, to accept the delayed completion, subject to its rights under the contract.

x) No assurance, representation, promise or other statement by any personnel, engineer or representative of the Owner in relation to extension of time for commencement or completion of any work(s) or operation thereof or of the entire works under the contract shall be binding upon the Owner or shall constitute an extension of time for commencement or completion of the entire works or any part or operation thereof within the provisions of clause 14 v), unless the same has been communicated to the Vendor in writing by the Engineer-in-Charge under clause 14 v) and in writing specifically states that it embodies an extension of time within the provisions of clause 14 v), and without prejudice to the afore-going, the mere agreement or prescription or signing of a Progress Schedule by the site engineer or any site representative of the Owner at variance of the progress schedule, as the case may be, referred to in clauses 14 ii), 14 iii) and/or 14 iv) hereof or containing an extended time of commencement or completion in respect of the entire work(s) or any part or operation thereof shall not anywise constitute an extension of time in the terms of the Contract so as to bind the Owner or relieve the Vendor of all or any of his liabilities under the Contract, nor shall constitute a promise on behalf of the owner or a waiver by the Owner of any of its rights in terms of the contract relative to the performance of the contract within the time specified or otherwise, but shall be deemed only (at the most) as a guidance to the Vendor for better organizing his work on a recognition that the Vendor has failed to organize his work and/or perform the same within the time specified in the Progress Schedule established within the provisions of clause 14 ii) or clause 14 iii) or clause 14 iv) hereof, as the case may be.

15. Liquidated Damage (LD)

(i) If the Vendor is unable to complete the jobs specified in the scope of work within the period specified in NIT, it may request owner for extension of the time with unconditionally agreeing for payment of LD. Upon receipt of such a request, owner may at its discretion extend the period of completion and shall recover from the Vendor's running account bill, as an ascertained and agreed Liquidated Damages, a sum equivalent to **0.5% of basic contract value** for each week of delay or part thereof. The LD shall be limited to **5% of the total of basic contract value.**

The parties agree that the sum specified above is not a penalty but a genuine pre-estimate of the loss/ damage which will be suffered by the owner on account of delay/ breach on the part of the Vendor and the said amount will be payable without proof of actual loss or damage caused by such delay/breach by the Owner.

(ii) Notwithstanding what is stated in Clause above, the Owner shall have the right to employ any other agency to complete the remaining work at the risk and cost of the Vendor, in the event of his failing to complete the work within the stipulated time or in the even progress of Vendor's work is behind schedule, as judged by the engineer-in-charge.

(iii) Then the Officer/ Engineer-in-Charge upon receiving necessary approval from competent Authority may in writing make a fair and reasonable extension of time for completion of the works as per provision of clause no. 10, provided further that the Vendor shall constantly use his best endeavor to the satisfaction of the Engineer-In-Charge to proceed with the works. Nothing herein shall prejudice the rights of the Vendor under clause herein above.

(iv) The vendor may seek time extension for delay or anticipated delay as per clause no. 14 v) for reasons not attributable to them and in such case time extension may be given without imposition of LD subject to the satisfaction of Engineer-in-charge.

16. Revision / Changes / Quantity Variation

(i) The quantity as mentioned in the Schedule of Work/ Price Bid is indicative. The selected bidder/Contractor shall however ascertain the exact quantity required at site based on drawings, obtain approval from BL on quantity, supply and install accordingly. As the work progresses, it is possible that there will be quantity variations to any extent & omission of items. Under all such circumstances, the quoted rate shall remain firm throughout the execution period. No rate/price escalation whatsoever will be permitted.

(ii) Owner may make in writing any revisions or changes in the purchase order, including additions or deletions from the quantities ordered in the specifications or drawings. The Vendor shall carry out such revision / changes and be bound by the same terms and conditions to the extent applicable, though the said revisions/ changes were not incorporated in the initial order.

(iii) Owner reserves the right to increase or decrease the tendered quantity to any extent or replace specification, drawing, design of any or every item or delete them out at any stage of the work. The Vendor's claim for compensation or damages on account of this shall not be entertained. Such deviation shall be adjusted at the rates contained in the order/ contract or by issuing variation order(s) at the prevailing market rates, if the rates are not available in the order/ contract.

17. Extra Items of Work

During the course of execution of the work, should the vendor come across items of work which are not covered under the Schedule of Rate or not included therein, the Vendor shall draw the attention of the Owner / Engineer-in-Charge to the same and such items of work shall be treated as extra only with the prior approval of Engineer-in-Charge inwriting. Vendor shall submit a quotation along with the rate analysis for such accepted extra items before he commences work or purchases the materials in connection with such items.

For extra items, rates shall be derived from similar item rates included in the schedule of work. Where there is no such similar item available in the schedule, rate shall be analyzed as follows:
Rate for extra item = Cost of material (a) + cost of labour inclusive of all necessary tools, tackles, equipment, machinery and consumable (b) required to carry out the work + 15% of (a+b) towards profit and overhead + taxes, duties etc.

18. LABOUR LAWS

a) No Labour below the age of eighteen (18) years shall be employed on Work. In case female workers are engaged, requisite provisions shall be made as per the statute.
b) Vendor shall not pay less than what is provided under law to labourers engaged by him on Work.
c) Vendor shall at his expense comply with all labour laws and keep Owner indemnified in respect thereof.
d) In addition to above, rules and regulations as contained in Contract Labour (Regulation and Abolition) Act, 1970 will also be applicable for this contract. For the purpose of registration as per the above Act, Vendor may contact Owner for further details.
e) Vendor shall secure full safety of the workers / employees engaged by him in the Site premises and shall take at his own cost, insurances and such other safety regulations for the said purpose.

19. Restrictions on Ground of Defense of India and National Security:

Restrictions on procurement from a bidder of a country which shares a land border with India

I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority.

II. "Bidder" (Seller / Service Provider) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.

III. "Bidder from a country which shares a land border with India" for the purpose of this Order means:
a) An entity incorporated, established, or registered in such a country; or
b) A subsidiary of an entity incorporated, established, or registered in such a country; or
c) An entity substantially controlled through entities incorporated, established, or registered in such a country; or
d) An entity whose beneficial owner is situated in such a country; or
e) An Indian (or other) agent of such an entity; or
f) A natural person who is a citizen of such a country; or
g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

IV. The beneficial owner for the purpose of (iii) above will be as under:

1) In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means. Explanation—
    a) "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent. of shares or capital or profits of the company;
    b) "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;
2) In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
3) In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
4) Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
5) In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

V. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

VI. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority. Any false declaration and non-compliance of the above would be a ground for immediate termination of the contract and further legal action in accordance with the laws.

Declaration in this regard shall be submitted along with the bid.

20. INSURANCE

Vendor shall at his own expense carry out and maintain insurance with reputable companies to the satisfaction of the Owner as follows:

Employee's Compensation and Liability Insurance:
Vendor shall obtain Workmen Compensation policy in his name in respect of Vendor's employees to be engaged for the work towards compensations as admissible under the Employee's Compensation Act, 1923 and Rules framed thereunder upon death/ disablement and also medical treatment of a worker and the same has to be produced to the BL Official-in-charge/ Engineer-in-Charge before start of the work. Owner

should be mentioned as the Beneficiary. The Vendor shall indemnify the Owner against all losses and claims in respect of injuries or damage to any person, including any employee of the Owner, material or physical damage to any property whatsoever including that of the owner arising out of the execution of the works or in the carrying out of the contract, and shall insure against his liability with an insurer until the completion of this contract in terms approved by the owner. Whenever required, the Vendor shall produce the insurance policy and the current premium receipts to the Owner.

The Contractor would be required to ensure adherence to all statutory obligations related to their employees who would be working inside Balmer Lawrie premises. On award of the contract, the bidder shall ensure compliance with all relevant statutory provisions under the relevant labour laws which are as given below:

a) The Contract Labour (Regulation & Abolition) Act 1970
b) The Employees Provident Funds and Miscellaneous Provisions Act 1952
c) The Employees State Insurance Act 1948
d) The Minimum Wages Act 1948
e) The Workmen Compensation Act 1923

and other applicable labour enactment and as amended from time to time in respect of the personnel deployed by bidder at the Company's premises. The personnel deployed in the Company's premises by the Contractor shall be fully qualified in all respects to carry out the activities for which he/she has been deployed. It may be noted that the bill submitted by successful bidder for services rendered shall be processed only on submission of satisfactory proof of remittances Challans in respect of statutory payments such as ESI, PF, etc. for the personnel deployed by him in the Company's premises along with the ESI/PF numbers allotted to them. Cost if any, incurred by the Company in ensuring statutory compliance with the existing labour enactment and as amended from time to time shall be fully charged to the contractor.

21. Third Party Liability Insurance:

The third party liability shall cover the loss / disablement of human life (persons not belonging to the Contractor) and also cover the risk of damages to others' materials / equipment / properties during construction, erection and commissioning at site. The value of third party liability for compensation for loss of human life or partial / full disablement shall be of required statutory value but not less than Rs. 2 lakh per death, Rs. 1.5 lakh per full disablement and Rs. 1 lakh per partial disablement and shall nevertheless cover such compensation as may be awarded by a Court of Law in India or abroad and cover for damage to others' equipment / property

22. Contractor's Responsibility

The contractor will be responsible for the welfare and discipline of his employees inside our CFS premises. He must also undertake to comply with all statutory regulations for employment of his workmen. Any expenses incurred by us under these regulations will have to be reimbursed by him. The contractor will be deemed to be the ultimate employer of his men.

All personnel employed by the contractor are to be engaged as their own employees in all respect and absolve Balmer Lawrie of any responsibility to this effect.

The laid down safety and security rules and regulation of BL-CFS Chennai shall have to be adhered to. The tenderer shall allow only those workers who have the authorized gate entry permits and will ensure that they compulsorily use proper safety equipment. All entry / exit permit for vehicle, equipment, men and material shall be arranged by the tenderer without any extra cost. The contractor shall ensure that proper Uniforms are provided to their personnel deployed by them.

The responsibility to comply with provisions of various labour laws of the country such as Factories Act, Minimum Wages Act, Workmen's Compensation Act, Contract Labour Act, E.S.I Act, Bonus and Gratuity Act, etc. or any other Acts/ Rules, which are applicable as per the Statute, will be that of the contractor.

23. Penalty Due to Non-Performance

Any delay in executing the assigned job due to fault of the contractor may give rise to demurrage / detention claims on the company, which will be at Contractor's "**Risk & Cost"** and the additional amount incurred by the Company thereon shall be recovered from the contractor's bills.

~~Any claims arising out of poor quality of lashing and choking about any damage to cargo, container, the contractor will be responsible to make good the losses as assessed by the surveyor/shipping lines/exporter/any competent authority.~~

24. Alternative Arrangement

In absence of the timely and proper performance by the contractor, BL reserves the right to utilize the services of any other contractor without notice at the **risk and cost** of the contractor and to recover charges and expenses in excess of the contractual terms from the contractor. Similarly, if the contractor fails to meet their contractual obligations, the work shall be completed at their risk and cost through alternative sources/arrangements. This will be without prejudice to the rights of BL for any other action including termination, forfeiture of security deposit etc.

25. Sub-letting of Work

No part of the contract or any share or interest therein shall in any manner or degree be transferred, assigned or sublet by the contractor directly or indirectly to any person, firm or corporation without the consent in writing from Balmer Lawrie. In the event of contractor contravening the conditions, Balmer Lawrie shall be entitled to get the work done from any other firm at the **'Risk & Cost'** of the contract.

26. Construction Water

Water for construction is available at the single point. BL, at their discretion, may provide the same to the contractor **free of cost**. However, necessary arrangement (such as laying temporary pipe line, arranging tankers etc.) for taking it from battery limit/offtake point shall be in the scope of contractor.

27. Construction Power

Construction power is available at site. BL, at their discretion, may provide the same to the contractor at single point for general lighting and construction/fabrication purpose **free of cost**.

In absence of electricity due to any reasons, the contractor shall arrange DG set on his own at their cost.

All temporary arrangements for distribution of construction power shall be removed forthwith after completion of the work or if there is any hindrance caused to the other works, the contractor will re-route or remove the temporary lines at his own cost in a manner so as to continue his (contractor's) work in an uninterrupted manner.

28. Storage

Contractor shall store all the materials/equipment/bought-out items received at site at their custody till the executed work is completed and handed over to BL. All precious materials/equipment must be kept under shed or to be covered with tarpaulin to protect it from sun, rain, theft etc.

Contractor shall replace any misplaced or lost item/equipment if found during installation without any extra cost to BL.

29. Indemnity

The Contractor will be required to indemnify and keep indemnified the Company against all losses and claims for injury and damage to any person or any property whatsoever which may arise out of or in consequence of the work and against all claims, demands, proceedings, damages, cost charges and expenses whatsoever that may arise against the company on ac- count of the faults of the contractor/his workmen employed by the contractor. The company may forward the bidder any such claim demand or complaint made by any other person against the company. In such event, the contractor shall solely be liable for the disposal of the said complaint.

The contractor will be required to Indemnify and absolve the Company of all responsibilities related to employment condition of their employees and should adequately safeguard Company against any possible IR problems including those related to employment. The bidder should adhere to all State and Central Enactments related to employment such as Minimum Wages Act, Workmen Compensation Act, Provident Fund Act, Employees State Insurance Act, Gratuity Act, Bonus Act, Contract Labour [Regulations and Abolition] Act etc. Further, Company will not have any liability towards employment, remuneration or compensation in whatever manner made to the employee of the bidder. Such demand shall be settled by the bidder directly.

The Contractor shall co-operate with the company in all matters relating to introduction/adoption of new equipment technology, machinery, compliance of all relevant laws, rules or regulations, relating to CFS operations and implementation of any scheme/policies/guidelines recommended by the Company aimed at swift and better customer service.

30. Liability & Ensuring Safety

The Contractor will be fully responsible for ensuring safety of lives, cargo, vehicles, property and containers within Balmer Lawrie CFS yard. Any damage to any life and/or property inside the CFS yard due to negligence would be to the account of the contractor. The Contractor will be penalized for any safety violation as follows of the contract. The decision of the Safety Committee headed by Safety In charge will

be final. Secondly for any safety violation viz. not using PPE as required by the nature of the job per violation Rs. 1000/- will be charged. If any major safety violation has been observed which resulted in any loss of property the cost will be debited on actual.

31. Purchase preference policy for MSE Vendors

If it is seen that a Micro, Small and Medium (MSME) has participated and the price quoted by them is within a price band of +15% of the L1 price (which is from a supplier who is not MSME), then such MSME vendor shall be allowed to supply a pre-determined portion of the tendered quantity subject to their matching the L1 price. In case, more than one number of MSME vendors are within the +15% range, all of them shall be given the option of match- ing the L1 price. In such a situation, the pre-determined quantity shall be equally divided amongst all such MSE vendors who have matched the L1 price. In case the total tender value is not split able, 100% of the value order will be given to MSME (within 15% band with non MSME vender) vender subject to matching with L1 price of non MSE vender.

Note: This is no split tender.

32. Purchase Preference for Make in India suppliers

1. **Purchase Preference under Public Procurement (Preference to Make in India) Order:**

A. For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 15.06.2017, 28.05.2018 29.05.2019, 04.06.2020, 16.09.2020 and subsequent revision issued on 19.07.2024 by the respective Nodal Ministry shall be applicable even if issued after issue of this NIT but before finalization of contract / PO / WO against this NIT. In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and /or local content in respect of this procurement, same shall be applicable.

Definitions: for purpose of the above order.

"Local content" means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.

"Class-I local supplier" means a supplier or service provider, whose goods, services or works offered for procurement, has local content equal to or more than 50%, as defined under the Order.

"Class-II local supplier" means a supplier or service provider, whose goods, services or works offered for procurement, has local content mare than 20% but less than 50%, as defined under the Order.

"Non - Local supplier" means a supplier or service provider, whose goods, services or works offered for procurement, has local content less than or equal to 20%, as defined under the order.

"L1" means the lowest tender or lowest bid or the lowest quotation received in a tender, bidding process or other procurement solicitation as adjudged in the evaluation process as per the tender or other procurement solicitation.

"Margin of purchase preference" means the maximum extent to which the price quoted by a *Class-I local supplier' may be above the L1 1or the purpose of purchase preference.

"Nodal Ministry" means the Ministry or Department identified pursuant to this order in respect of a particular item of goods or services or works.

B. For implementation of the above order the following mechanism will be adopted for operating Purchase preference under this Tender enquiry:

ELIGIBILITY

a) Only Class I local suppliers are eligible to bid in any tender for goods, services or works for which there is sufficient local capacity

b) For other goods, services or works, global tender enquiry shall not be issued except with approval of competent authority. Only Class I and Class II local suppliers are eligible to bid. In global tenders, non-local suppliers can also bid

PURCHASE PREFERENCE for (b) above in case of divisible contracts

If L1 is Class I local supplier, full quantity to be awarded to L1.
If L1 is not Class I local supplier, 50% of the order quantity to be awarded to L1;

thereafter, for the balance 50% quantity, lowest bidders among Class I local suppliers to be invited to match the L1 price if their price is within 20% band of the L1 price in order of bid price from lowest to highest

If Class I local supplier matches L1 price but is unable to accept the full balance quantity, the remaining quantity shall be offered to the next higher bidder provided he matches the L1 price and so on

After this exercise, if some balance quantity is left over, the same may be awarded to the original L1 bidder

PURCHASE PREFERENCE for (b) above in case of non-divisible contracts and services (excluding freight forwarding) where bids are evaluated on price alone

If L1 is Class I local supplier, full quantity to be awarded to L1.

If L1 is not Class I local supplier;

lowest bidders among Class I local suppliers to be invited to match the L1 price if their price is within 20% band of the L1 price in order of bid price from lowest to highest If Class I local supplier matches L1 price the contract shall be awarded to them In case none of the Class I local suppliers are able to match the price

then the contract may be awarded to the original L1 bidder

Note:

1. This contract is non-divisible contract
2. For more details and applicability, bidders are requested to refer to Order No. P45021/2/2017-PP (BE-II) dated 19-07-2024 or latest amendment.

33. Compliance of GST

1. Vendor to comply with all requirements under GST and provide their GST Registration details.
2. Vendor to issue a valid invoice with correct and complete disclosures as required under GST invoice rules and payments shall be processed only post receipt of correct invoice from the vendor
3. Vendor has to provide clear indication of place of supply [Invoicing location] related to place of supplies [BL location].
4. Vendors are required to raise invoices as per the GST tax structure and format.
5. Vendors to ensure that all invoices submitted are compliant with GST Laws. Any discrepancies in the Invoice which results in tax credit loss to Balmer Lawrie will be recovered from vendors.
6. In case of advance payment against goods/services, vendor to ensure payment of tax as per GST Laws.
7. Balmer Lawrie will keep a watch on compliance rating of their vendors as per the GST portal. If at any time such a rating falls below prescribed criteria, Balmer Lawrie will have the right to terminate the services without any prior notice to vendor.
8. Central Government vide Notification No.50/2018 dated 13th September 2018, has made TDS provision applicable under GST Law on all payments affected by Public Sector Undertaking (PSU) w.e.f 1st October 2018. BALMER LAWRIE being a PSU these provisions will be applicable for all the payments made by BALMER LAWRIE on / after 1st October 2018. TDS shall be deducted @ 2% of taxable value excluding GST. TDS deducted from your payments will be deposited with GST authorities by 10th of the following month and TDS certificates will be issued subsequently.
9. Vendor should compulsorily follow all the provisions of GST and in the event any default for fulfilling any provisions of the Act, BL would exercise the right for non-payment/withholding payment / blacklisting the vendor / debarring the vendor from participating in future tenders for a certain period [to be decided by BL].

34. <u>GENERAL SAFETY, SECURITY & OTHER REGULATIONS</u>

The laid down safety and security rules and regulation of BL-CFS Chennai shall have to be adhered to. The tenderer shall allow only those workers who have the authorized gate entry permits and will ensure that they compulsorily use proper safety equipment. All entry / exit permit for vehicle, equipment, men and material shall be arranged by the tenderer without any extra cost. The selected contractor shall comply with the provisions of the required Insurance, Minimum Wages Act, Contract Labour Act, Workmen's Compensation Act, ESI, PF, Bonus, Gratuity, etc. or any other Acts/Rules, which are applicable as per the Statute, in respect of the workmen/personnel employed by him

35. Safety

Safety Requirements to be followed

Housekeeping

Contractors shall ensure that their work area is kept clean tidy and free from debris. The work areas must be cleaned on a daily basis. Any disposal of waste shall be done by the Contractor.

All equipment, materials and vehicles shall be stored in an orderly manner. Access to emergency equipment, exits, telephones, safety showers, eye washes, fire extinguishers, pull boxes, fire hoses, etc. shall not be blocked or disturbed.

Confined Space

Before commencing Work in a confined space the Contractor must obtain from BL a Permit to Work, the Permit to Work will define the requirements to be followed.

As minimum Contractors must ensure the following:

(i) Confined spaces are kept identified and marked by a sign near the entrance(s).
(ii) Adequate ventilation is provided
(iii) Adequate emergency provisions are in place
(iv) Appropriate air monitoring is performed to ensure oxygen is above 20%.
(v) Persons are provided with Confined Space training.
(vi) All the necessary equipment and support personnel required to enter a Confined Space is provided.

Tools, Equipment and Machinery

The Contractor must ensure that all tools & equipment provided for use during the Work is:

- suitable for its intended use;
- safe for use, maintained in a safe condition and where necessary inspected to en- sure this remains the case (any inspection must be carried out by a competent person and records shall be available);
- Used only by people who have received adequate information, instruction and training to use the tool or equipment.
- Provided with Earth leakage circuit breaker (ELCBs) at all times when using elec- tric power cords. Use of electrical tape for temporary repairs is prohibited.

Working at Height

Any Work undertaken where there is a risk of fall and injury is considered to be working at height.

For any Contractor Personnel working at height, Contractors shall provide fall prevention whenever possible and fall protection only when fall prevention is not practicable. Before commencing Work in a height the Contractor must obtain from BL a Permit to Work, the Permit to Work will define the requirements to be followed. Supervisor must be present at all point of time, to ensure no deviation occur during the course of work.

Fall Prevention System

Fall prevention systems (e.g. fixed guardrails, scaffolds, elevated work platforms) must provide protection for areas with open sides, including exposed floor openings.

Fall Protection Systems
Where fall protection systems are used then the Contractor must ensure the following is applied:

(i) Only approved full body harness and two shock-absorbing lanyards are used,
(ii) Prior establishment of a rescue plan for the immediate rescue of an employee in the event they experience a fall while using the system,
(iii) Anchorage points must be at waist level or higher; and capable of supporting at least the attached weight,
(iv) Lifeline systems must be approved by BL before use.
(v) Use of ISI marked industrial helmet at all point of time.

Scaffolding

All scaffolds shall subject to a documented inspection by a competent person and clearly marked prior to use. The footings or anchorage for scaffolds shall be sound, rigid and ca- pable of carrying the maximum intended load without settling or displacement. All scaf- folding materials should be of MS tubular type.

Guardrails and toe-boards shall be installed on all open sides and ends of scaffold platforms. Scaffolds shall be provided with an access ladder or equivalent safe access. Contractor Per- sonnel shall not climb or work from scaffold handrails, mid-rails or brace members.

Stairways and Ladders

Ladders should only be used for light duty, short-term work or access in line with the below and the Site Requirements.

(a) Fabricated ladders are prohibited.
(b) Ladders will be secured to keep them from shifting, slipping, being knocked or blown over.
(c) Ladders will never be tied to facility services piping, conduits, or ventilation ducting.
(d) Ladders will be lowered and securely stored at the end of each workday.
(e) Ladders shall be maintained free of oil, grease and other slipping hazards
(f) Ladders will be visually inspected by a competent person and approved for use before being put into

service. Each user shall inspect ladders visually before using.

(g) Ladders with structural defects shall be tagged "Do Not Use," immediately taken out of service, and removed from the Site by the end of the day.

Overhead Work

A secure exclusion zone shall be maintained by Contractor below overhead work to prevent access. It is forbidden to work beneath a suspended load.

Lifting Operations

Cranes and Hoisting Equipment

Contractors shall operate and maintain cranes and hoisting equipment in accordance with manufacturers' specifications and legal requirements.

Only Contractor Personnel trained in the use of cranes and hoists are permitted to use them.

Lifting Equipment and Accessories

All lifting equipment / accessories e.g., slings, chains, webbing, chain blocks, winches, jacks etc shall be indicated with their safe working load have an identification number vis- ible on the unit and be inspected and tested in accordance with legal requirements.

Damaged equipment / accessories and equipment shall be tagged "out of use" and immedi- ately removed from Site.

Lockout Tag out ("LOTO")

Prior to performing work on machines or equipment, the Contractor shall ensure that it is familiar with LOTO and Permit to Work procedures and that all of its affected Contractor Personnel receive the necessary training.

Barricades

Floor openings, stairwells, platforms and walkways, and trenching where a person can fall any distance shall be adequately barricaded and where necessary, well lit. Where there is a risk of injury from a fall then rigid barriers must be used.

Barricades must also be used to prevent personnel entering an area where risk of injury is high e.g., during overhead work activity or electrical testing etc. Such barricading must provide clear visual warning.

Compressed Gas Cylinders

Gas cylinder shall be securely stored and transported and identified and used in line with the local requirements. Hose lines shall be inspected and tested for leaks in line with local requirements. Flash back arrestor to be used to prevent any explosion due to backfire.

Electrical Safety

Prior to undertaking any work on live electrical equipment the Contractor must obtain a Permit to Work from BL. Wherever possible live work should be avoided. Any control measures highlighted shall be implemented prior to work commencing.

The below measures will be taken:

a) Work practices must protect against direct or indirect body contact by means of tools or materials and be suitable for work conditions and the exposed voltage level.
b) Energized panels will be closed after normal working hours and whenever they are un- attended. Temporary wiring will be de-energized when not in use.
c) Only qualified electrical Contractor Personnel may enter substations and/or transformer and only after being specifically authorized by BL.

Hot Works

A Permit to Work must be obtained from BL prior to any hot works (welding, grinding, open flame work). Suitable fire extinguishing equipment shall be immediately available. Objects to be welded, cut or heated shall be moved to a designated safe location, or, if they cannot be readily moved, all movable fire hazards in the vicinity shall be taken to a safe place. Personnel working around or below the hot works shall be protected from falling or flying objects.

Prior to the use of temporary propane or resistance heating devices approval must be obtained from BL.

Environmental Requirements

Waste Management

The Contractor is responsible to remove any waste generated by the work being done on the Site. The Contractor must dispose of the waste in line with the relevant local legislative requirements. The waste disposal route shall be documented and made available for BL to review at any time and may be subject to BL's prior approval.

Wastes (includes rinse from washing of equipment, PPE, tools, etc.) are not to be poured into sinks, drains, toilets, or storm sewers, or onto the ground. Solid or liquid wastes that are hazardous or regulated in any way are not to be disposed of in general site waste receptacles.

Spills

The Contractor is responsible for the provision of adequate spill kits/protection and the clean-up and disposal costs arising from such spills.

Emissions

The Contractor shall identify and quantify any emission sources associated with the Works. The control measures associated with these emission shall be subject to the approval of BL. Emissions include but are not limited to noise, dust, fumes, vapours.

Under no circumstances Balmer Lawrie would be liable for any kind of deviation in following the safety instructions by the bidder.

Violation of not adhering to HSE safety procedures/practices as given above would attract levy of suitable penalty on the part of contractor.

ANNEXURE-1

D E C L A R A T I O N

Having examined the tender documents, we have understood the terms & conditions indicated in the e-proc Tender No BL/LI/CHN/CFS/2025-26/03 DT 03/06/2025 and hereby confirm our acceptance of the same.

Place : Signature of Tenderer

Date : Name & Address

Telephone Nos. Office:

Fax Nos. :

ANNEXURE-2

PARTICULARS OF THE TENDERER'S ORGANIZATION

S. No	Description	Tenderers Details
1	Name of the Tenderer	
2	Address of the Registered Office	
3	Address of the branch / office quoting against the Tender	
4	Contact Number (Mobile/Landline)	
5	E-mail id	
6	Year of commencement of business	
7	Whether Sole Trader/ Partnership / Private Limited Co., or Public Limited Co.	
8	Registration No. (Under companies Act)	
9	Whether copy of Incorporation /Registration certificate from ROC(Registrar of company) uploaded	
10	Income Tax PAN no.	
11	Whether copy of PAN enclosed	
12	Whether copy of latest Income Tax Return uploaded	
13	GST Registration. No.	
14	Whether copy of GST Registration certificate Uploaded	
15	Name of the Banker	
16	Whether registered under MSEMED Act	
17	In case registered under MSMED provide registration number and copy of registration certificate.	
18	MSME status of social category (SC/ST/OBC/General)	
19	MSME Gender Status (Male/Female)	
20	GeM Seller Id	

ANNEXURE-3

PRICE BID FORMAT

Schedule "A"

S. No.	Description of Item	Unit	Qty	Rate	Amount
1	**Design, Supply, Installation, Testing, Commissioning of Photo Voltaic Solar Power Plant as per technical specification, scope of work and other terms and conditions of contract.** Solar Power Plant is **200 kWp** Grid connected, **PEB Roof mounted type**				
1.1	Supply and installation of **MONO PERC solar photovoltaic modules** of **550 Wp to 600 Wp** (each) as per technical specifications, scope of work and conditions of contract (Nominal rating of module Wp and quantity required shall be indicated based on suppliers design parameter). No. of modules should be selected considering at least **200 KWp plant**.	LS	1		
1.2	Supply and installation of **Power Conditioning Unit (PCU)** of minimum capacity **70-80 kW (3 nos. required for 200 kWp)** and all accessories as per technical specifications, scope of work and conditions of contract (Nominal rating of output power of PCU and quantity required shall be indicated based on suppliers design parameter)	LS	1		
1.3	Design, Supply and installation of Module Mounting Structure with anodized aluminium channels fixed with suitable clamps to roof purlins using tek screw and all accessories as per technical specifications, scope of work and conditions of contract. Consider full length rail and use existing screw in the purlin for fixing the channel.	LS	1		
1.4	Supply and Installation of **Data Logger System** with all accessories as per technical specifications, scope of work and conditions of contract.	LS	1		

1.5	Supply and Installation of **AC Distribution Board** of IP65 grade and all accessories as per technical specifications, scope of work and conditions of contract. ACDB will be designed to house Solar energy meter and CTs calibrated by TANGEDCO (if required).	LS	1		
1.6	Supply and Installation of **DC Distribution Board** and all accessories as per technical specifications, scope of work and conditions of contract.	LS	1		
1.7	Supply and Installation of **Uni directional Energy Meter** with all accessories as per technical specifications, scope of work and conditions of contract.(Mounted in ACDB)	LS	1		
1.8	Supply and laying of **DC and AC cables** (PV cell to PCU, PCU to ACDB and all other accessory cables) and **cable trays, conduits** and all accessories for complete wiring system of the plant as per technical specifications, scope of work and conditions of contract. Consider 4 Sq. mm DC Copper Cable.	LS	1		
1.9	Supply and Installation of earthing system for both AC and DC circuits with 25 x 3 mm GI strip,earth electrodes, pits and all accessories as per technical specifications, scope of work and conditions of contract.Consider at least 4 earth pits for DC and 2 earth pits for AC circuit.	LS	1		
1.10	Supply and Installation of lightning protection system with 50 mm Sq, 8mm dia Al alloy solid round conductor and clamp, roof holder, cross connector and down conductor system and all accessories as per technical specifications, scope of work and conditions of contract as per IS/ IEC 62305. Consider at least 4 air terminals and 8 earthing electrodes (3m long, 14.2 mm dia copper coated earth rod) with pits and accessories.	LS	1		

1.11	**Main LT Power Cable** : Supply (delivery, unloading and storing of cables at site) and laying, termination at both end of cables (including supply of necessary clamping hardwares, cable markers etc.) either through conduits, or in RCC Trenches or buried underground or on cable tray/ladder, or by clamping hardwares, cable markers etc.) either through conduits, or in RCC Trenches or buried underground or on cable tray / ladder, or by clamping with wall / structure / machine frame suitably of following sizes of cables as specified. Cost of cable tray for the below cable, trench, buried trench is included in this item). Bidder to visit site to estimate the quantum of the work before submission of the offer. Cable to be laid from ACDB to Main LT Panel.				
a)	3.5 Core 240 Sq.mm stranded Al. Conductor, XLPE insulated, taped PVC inner sheathed, armoured, extruded PVC outer sheathed, 1.1 KV grade cable **Vendor should visit site to ascertain cable length and route.**	LS	1		
1.12	Supply, installation, Testing, Commissioning of Import /Export Metering in the existing HT Switchgear (including Supply and Installation of Bi-Directional Energy Meter in HT Breaker with all accessories as per technical specifications, scope of work and conditions of contract to make the system functional) of the Owner; Obtaining approval of Import / Export Metering from Local Electricity Authority shall be under the scope of this work. Bidders are requested to gather necessary site data before submission of their offer. (all statutory fees to the supply authority shall borne by BL).	LS	1		
1.13	Design, Supply, Installation, and Commissioning of Solar Module Cleaning Facility (SMCF) including water pipeline, booster pump, rooftop plumbing, sprinkler system as per the scope of work outlined in the tender document. **Vendor should**	LS	1		

	visit site to ascertain distance of nearest utility water tapping point.				
1.14	Supply and Installation of **Steel Walkway** (Make: TATA or JSW or approved equivalent), Cold rolled 550 GSM, 350 MPa or equivalent as per site requirement, Anti skid, Easy to walk on 15-20 degree on the roof top and all accessories as per technical specifications, scope of work and conditions of contract. Supply and Installation of **Safety Line** as standard along walkway and edge, Grade SS 316, Corrosion free, along with rope tensioner, shock absorbers and all other accessories required to ensure fall protection.	LS	1		
1.15	Supply, fabrication, and installation of structural vertical ladder with safety cage, as per the elevation drawings of the PEB warehouse. The scope includes preparation and submission of detailed design drawings for review and approval prior to execution. All work shall be carried out in accordance with the approved design, relevant IS codes, and the scope of work defined in the tender document.	LS	1		
	Total				
	GST Considering 12% on supply (70% of Basic) & 18% on service (30% of Basic)		**13.80%**		
	Grand Total				

Total Amount (in words):

Place:

Date:

Signature of Tenderer:
(with Stamp)
Company Address:

Contact Details:

Schedule "B" (RATE Only Item)

S. No.	Brief Description	Unit	Qty	In INR	
				UNIT PRICE	TOTAL PRICE
1	Annual maintenance contract of Solar Plant with spares and consumables. The period would be effected after expiry of one year performance guarantee period. Please refer Scope of Work for details.	Years	5		
	GST 18 % on AMC of Solar Plant				
	Grand Total with GST				

Total Amount (in words):

Place:

Date:

Signature of Tenderer:
(with Stamp)
Company Address:

Contact Details:

TO WHOMSOEVER IT MAY CONCERN
"DECLARATION OF BLACKLISTING/HOLIDAY LISTING"

In the case of a Proprietary Concern:

I hereby declare that neither I in my personal name or in the name of my Proprietary concern M/s._____which is submitting the accompanying Bid/Tender nor any other concern in which I am proprietor nor any partnership/firm in which I am involved as a Managing Partner have been placed on blacklist or holiday list declared by Balmer Lawrie & Company Limited or its Administrative Ministry (presently the Ministry of Petroleum & Natural Gas), or Govt. of India except as indicated below:

(Here give particulars of blacklisting or holiday listing, and in absence thereof state "NIL")

In the case of a Partnership Firm:

We hereby declare that neither we, M/s._____, submitting the accompanying Bid/Tender nor any partner involved in the management of the said firm either in his individual capacity or as proprietor or managing partner of any firm or concern have or has been placed on blacklist or holiday list declared by Balmer Lawrie and Company Limited. or its Administrative Ministry (presently the Ministry of Petroleum & Natural Gas) or Govt of India, except as indicated below:

(Here give particulars of blacklisting or holiday listing and in the absence thereof state "NIL")

In the case of Company:

We hereby declare that we have not been placed on any holiday list or black list declared by Balmer Lawrie and Company Limited or its Administrative Ministry (presently the Ministry of Petroleum and Natural Gas), except as indicated below : (Here give particulars of black listing or holiday listing and in the absence thereof state "NIL") It is understood that if this declaration is found to be false in any particular, Balmer Lawrie and Company Limited or its Administrative Ministry, shall have the right to reject my/our bid, and if the bid has resulted in a contract, the contract is liable to be terminated.

Place: Signature of Bidder: _____

Date : Name of Signatory: _____

Corporate Seal

Annexure-5

Declaration on Local Content

Dated …….

With reference to tender No:_____dated _____for "Turnkey design, supply, installation, testing and Commissioning of roof top grid connected 200 kWp solar photovoltaic power generating system along with 5 years comprehensive annual maintenance contract at CFS Chennai". Bidders are required to refer NIT clause on "Purchase Preference for Make in India & MSE suppliers"

I/We,M/s ....., address ....., hereby declare that the proportion of imported content to Domestic content in terms of per- centage (%) of the total value of quoted item/s are as follows –

Domestic Content (%):

Imported Content (%):

Authorized Signatory:

Company Seal:

Annexure-6

PROFORMA OF BANK GUARANTEE FOR SECURITY DEPOSIT

Balmer Lawrie & Co. Ltd. Container Freight Station,
No. 32 Sattangadu Village, Manali
Chennai – 600068.
India.

Dear Sir,

That Messrs/Mr ..... (set out full name and address and constitution of the Contractor) (herein-after referred to as "the Contractor") filed their/his/its quotation against your Tender being Tender No. …….. dated …….. (hereinafter referred as "the said Tender") for the work … .....(set out the purpose of the job) and in pursuance thereto an Order being No. …… dated..... (hereinafter to as "the Order") was issued by you to the Contractor.

The conditions of the said Tender, inter alia, requires that the Contractor shall pay a sum of Rs .....only) as full security deposit (hereinafter referred to as "the security deposit") in the form therein mentioned. The form of payment of security deposit includes a guarantee to be executed by a Scheduled Bank.

The said Messrs/Mr ..... (set out full name of the Contractor) have/has approached us and at their/his/its request and in consideration of the premises We..... (set out full name of the Bank) having our office, inter alia at.....(state the address of the Bank) have agreed to give such guarantee in the manner following :

1. We, (set out full name of the Bank), hereby undertake with you if default is made by Messrs/Mr..... (set out full name of the Contractor) in performing any of the terms and conditions of the Tender and/or in payment of the security deposit or any other or in payment of money payable to you. We, ...(set out full name of the Bank) shall merely on demand from you without demur or protest shall pay you the said amount of Rs…… (Rupees ..... only) or such portion thereof not exceeding the said sum as you may demand from time to time.

2. We, (set out full name of the Bank), further agree with you that you hereunder to adopt any mode for realisation of your dues from the Contractor and/or to vary any of the Terms and Conditions of your Contract with the said Messrs/Mr ..... (set out full name of the Contractor), or to extend time of performance by Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by you against

Contractor and to forbear or enforce any of the terms and conditions relating to the Contract and we, ... (set out full name of the Bank) shall not be relieved from our liability by reason of any such variation, or any indulgence to be given by you to the Contractor or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so releasing us.

3. Your right to recover the said sum of Rs..... (Rupees ..... only) from us in the manner aforesaid will not be affected or suspended by reason of the fact that any dispute or disputes is/are pending before any Officer, tribunal, court or any other authority or authorities.

4. The guarantee herein contained shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the said Messrs/Mr. ..... (set out the full name of the Contractors), but shall in all respect, and for all purposes be binding and operative until payment of all the money due to you in respect of such liabilities is paid,

5. Our liability under this guarantee is restricted to Rs. ..... (Rupees ..... only).

6. Our guarantee shall remain in force and effect until..... (set out the date of expiry) and unless a claim or demand in writing is made against us under this guarantee before the expiry of six months from the aforesaid date i.e ..... (set out last date of Claim period), the said Guarantee all your rights under this guarantee shall be forfeited and we, ... (set out full name of the Bank) shall be relieved and discharged from all liabilities thereunder.

7. We , (set out full name of the Bank) undertake not to revoke this Guarantee during its currency except with your previous consent in writing.

8. We, (set out full name of the Bank) have power to issue this Guarantee in your favour under our Memorandum and Articles of Association and the undersigned has full power to execute/sign this Guarantee under the Power of the Attorney dated the ..... day of Two Thousand and Four granted by the Bank.

Yours faithfully,

Dated : .....

(Place): .....

(Signature of Officer on.....behalf of .....)

(Set out name of the Bank)

(Date).....

Annexure - 7

Integrity Pact

Balmer Lawrie & Co. Limited (BL) hereafter referred to as "The Principal"

And

_____, hereafter referred to as "The Bidder/Contractor"

Preamble

The principal intends to award, under laid down organizational procedures, contract/s for _____. The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relations with its Bidder(s) and / or contractor(s).

In order to achieve these goals, the principal will appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 – Commitments of the Principal

1. The principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:

   a. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand take a promise for or accept for self or third person, any material or immaterial benefit which the person is not legally entitled to.
   b. The principal will, during the tender process treat all Bidder(s) with equity and reason. The principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder (s) could obtain an advance in relation to the tender process or the contract execution.
   c. The principal will exclude form the process all known prejudiced persons.

2. If the principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC or BNS/Prevention of Corruption (PC) Act, or if there be a substantive suspicion in this regard, the principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s)/Contractor(s)

1. The Bidder(s)/Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

   a. The Bidder(s)/Contractor(s) will not, directly or through any other persons or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

b. The Bidder(s)/Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidder process. Reasons for cartel formation and suggestive remedies are outlined below for basic understanding.

Reasons for Cartelization and its remedies:

(1) Inadequate competition, due to an inadequate number of suppliers in the list/panel of registered suppliers:

i) New firms may be encouraged to register themselves for the subject goods.

ii) A review of technical specifications (especially tailor-made specifications) may be done to examine why a commercially available alternative cannot be used instead, or at least review its features so that more suppliers become eligible. Consider using substitute items or new developments in the Market.

(2) Processes, e.g., pre-bid conferences (where a considerable number of competing bidders come together on a platform), may facilitate such cartel formation:

i) This may be avoided as far as feasible or be held only virtually.

However, a pre-bid conference may be advantageous in case of turnkey contract(s) and sophisticated and costly equipment, large works and complex consultancy assignments, and must be done, wherever necessary.

(3) Tendering similar quantities with similar conditions, year on year, provides a stable conspiring environment for the bidders to come to an agreement for quoting prices and quantities. Therefore, the following action can be considered to vary quantity and conditions to make it difficult for cartels:

i) Change the mode of procurement-Open/Public Tender Enquiry (OTE) instead of LTE, or GTE instead of OTE; or bypass the pre-qualification stage and vice versa.

ii) Change the quantity to be procured by packaging/slicing the tendered quantity or by clubbing more than one similar item in a tender (or vice versa).

iii) Change the pre-qualification criteria, especially in the case of slicing/packaging, to broaden the target bidders.

Cartel formation, bid rigging, collusive bidding are against the basic principles of competitive bidding and defeats the very purpose of open and competitive tendering system. Such practices are severely discouraged. Suitable administrative actions which include but not limited to rejecting the offers, holiday listing action as per policy in vogue for breach of integrity may be initiated in such cases.

c. The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC or BNS/PC Act; further the Bidder(s)/Contractors will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d. The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly, the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/representative have to be in Indian Rupees only. Copy of the **"Guidelines on Indian Agents of Foreign Suppliers,"** as annexed and marked as **Annexure-A**.

e. The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

2. The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3: Disqualification form tender process and exclusion form future contracts

If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of **Section 2**, above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or act as per the procedure mentioned in the "Balmer Lawrie Policy on Blacklisting". Copy of the **"Balmer Lawrie Policy on Blacklisting,"** is annexed and marked as **Annexure-B**.

Section 4: Compensation for Damages

a. If the Principal has disqualified the Bidder(s) form the tender process prior to the award according to **Section 3**, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/Bid Security.
b. If the Principal has terminated the contract according to **Section 3**, or if the Principal is entitled to terminate the contract according to **Section 3**, the Principal shall be entitled to demand and recover from the contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

Section 5: Previous Transgression

a) The Bidder declares that no previous transgression occurred in the last three years with any other company in any country conforming to the anti-corruption approach or with any other public sector enterprise in India that could justify his exclusion form the tender process.
b) If the bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as per the procedure mentioned in "**Balmer Lawrie Policy on Blacklisting**".

Section 6: Equal treatment of all Bidders/Contractors/Subcontractors

a) The Bidder(s)/Contractor(s) undertake(s) to demand form all subcontractors, a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.
b) The Principal will enter into agreements with identical conditions as this one with all bidders, contractors and subcontractors.
c) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7: Criminal charges against violation Bidder(s)/Contractor(s)/Subcontractor(s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitute corruption, or if the Principal has substantive suspicion in this regard, the **Principal** will inform the same to the **Chief Vigilance Officer.**

Section 8: Independent External Monitor/Monitors

a) The Principal appoints competent and credible Independent External Monitor for this pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

b) The monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. The Monitor would have access to all Contract documents whenever required. It shall be obligatory for him to treat the information and documents of the Bidders/Contractors as confidential. He reports to the **Chairman & Managing Director, BL.**

c) The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all project documentation of the Principal including that provided by the Contractor. The contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to this project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Subcontractor(s) with confidentiality.

d) The Monitor has to also sign declarations on '**Non-Disclosure of Confidential Information**,' and '**Absence of Conflict of Interest.**' In case of any conflict of interest arising later, the IEM shall inform the Management of the Principal and recuse himself from that case.

e) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

f) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The Monitor can in this regard, submit non-binding recommendations. Beyond this, the Monitor has no right to demand form the parties that they act in a specific manner, refrain from action, or tolerate action.

g) The Monitor will submit a written report to the **C&MD, BL**, within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.

h) Monitor shall be entitled to compensation on the same terms as being extended to/provided to **Independent Directors** on the **BL** Board.

i) If the Monitor has reported to the **C&MD, BL**, a substantiated suspicion of an offence under the relevant IPC or BNS/PC Act, and the **C&MD, BL** has not, within the reasonable time taken visible action to proceed against such offence or reported it to the **Chief Vigilance Officer**, the Monitor may also transmit this information directly to the **Central Vigilance Commissioner**.

j) The word 'Monitor' would include both singular and plural.

Section 9: Pact Duration

This pact begins when both parties have legally signed it. It expires for the contractor 10 months after the last payment under the contract and for all other bidders, 6 months after the contract has been awarded. Any violation of the same would entail disqualifying the bidders and exclusion from future business dealings.

Note: (The periods may be extended to suit the individual unit's requirements)

If any claim is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by the **C&MD, BL**.

Section 10 – Disputes

In the event of any dispute between the management and the contractor, in case, both the parties are agreeable, they may try to settle dispute through mediation before the panel of IEMs in a time-bound manner. In case the dispute remains unresolved, even after mediation by the panel of IEMs, the organization may take further action as per terms and conditions of the Contract.

A person signing the Integrity Pact shall not approach the Courts while representing the matters to IEMs and he/she/they will await IEM's decision in the matter.

Section 11 - Other provisions

a) This agreement is subject to Indian law. Place of performance and jurisdiction is the **registered office** of the principal i.e. **Kolkata.**
b) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
c) If the contractor is partnership or a consortium, this agreement must be signed by all partners or consortium members.
d) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
e) Issues like Warranty/Guarantee, etc., shall be outside the purview of IEMs.

(For & on behalf of the Principal)

(Office Seal)

(For & On behalf of Bidder/Contractor)

(Office Seal)

Place ----------
Date ----------

Witness 1:
(Name & Address)

Witness 2:
(Name & Address)

ANNEXURE-A

Guidelines for Indian Agents of Foreign Suppliers

1.1 There shall be compulsory registration of agents for all Global Tender Enquiries (GTE) and Limited Tender Enquiries (LTE). An agent not registered with **Balmer Lawrie** shall apply for registration with them.

1.2 Registered agents shall file an authenticated Photostat copy duly attested by a Notary Public/Original certificate of the Principal confirming the agency agreement and giving the status being enjoyed by the agent and the commission/remuneration/salary/retainership being paid by the Principal to the Agent before the placement of an order by **Balmer Lawrie**.

1.3 Wherever the Indian representatives have communicated on behalf of their principals and the foreign parties have stated that they are not paying any **commission** to the Indian agents, and the Indian representative is working based on salary or as a retainer, a written declaration to this effect should be submitted by the party (i.e., Principal) before finalizing the Contract.

2.0 Disclosure of Particulars of Agents/Representatives in India, if any

2.1 Bidders of Foreign nationality shall furnish the following details in their offer:

2.1.1 The name and address of the agents/representatives in India, if any and the extent of authorization and authority given to commit the Principals. If the agent/representative is a Foreign Company, it shall be confirmed whether it is a real functioning Company, and details of the same shall be furnished.

2.1.2 The amount of commission/remuneration included in the quoted price(s) for such agents/representatives in India.

2.1.3 Confirmation of the Bidder that the commission/remuneration, if any, payable to his agents/representatives in India, may be paid by **Balmer Lawrie** in Indian Rupees only.

2.2 Bidders of Indian Nationality shall furnish the following details in their offers:

2.2.1 The name and address of the foreign principals indicating their nationality as well as their status, i.e., whether manufacturer or agents of manufacturer holding the Letter of Authority of the Principal specifically authorizing the agent to make an offer in India in response to Tender, either directly, or through the agents/representatives.

2.2.2 The amount of commission/remuneration included in the price(s) quoted by the Bidder for himself.

2.2.3 Confirmation of the foreign principals of the Bidder that the commission/remuneration, if any, reserved for the Bidder in the quoted price(s) may be paid by **Balmer Lawrie** in India in equivalent Indian Rupees on satisfactory completion of the Project or supplies of Stores and Spares in case of "**operations**," items.

2.3 In either case, in the event of the contract materializing, the payment terms shall provide for payment of the commission/remuneration, if any, payable to the agents/representatives in India in Indian Rupees on the expiry of 90 days after the discharge of the obligations under the contract.

2.4 Failure to furnish the correct and detailed information, as called for, in para 2.0 above shall render the concerned bid liable to rejection, or, in the event of a contract materializing, the same liable to termination by **Balmer Lawrie**. Besides this, there would be a penalty of banning business dealings with **Balmer Lawrie** or damage or payment of a named sum.

* * * * *

Annexure-B

बामर लॉरी एण्ड कं. लिमिटेड
(भारत सरकार का एक प्रतिष्ठान)
Balmer Lawrie & Co. Ltd.
(A Government of India Enterprise)

Balmer Lawrie Policy on Blacklisting

Introduction

In the endeavour to maintain and foster ethical and corruption free business environment, the Supply Chain/Purchase/Contract & Procurement Procedure is being streamlined to include provision for banning or putting on holiday list vendor/supplier/contractor/consultant indulging in Corrupt, Fraudulent, Coercive and Collusive practices including laxity in services. In view of the complexity of the issue, it has become necessary to develop a comprehensive Policy encompassing the views of all stakeholders, our experience of Supply chain/Purchase/Project Execution/Services.

In the course of contracting, one has to deal with various vendors/suppliers/contractors/consultants who are expected to adopt and maintain highest standards and a high degree of ethics and integrity, commitments and sincerity towards the work undertaken by them. Any aberration, deviation and violation from the expected standards of supplies/services/behavior of the contracting agencies need to be dealt with appropriately so that it becomes a deterrent for all.

This policy is aimed at blacklisting the errant vendors and service providers by following a laid down procedure.

Any business restriction on any person or group involves legal scrutiny and civil consequences, thereby, necessitating to provide an opportunity to the defendant to defend its case. The Banning Procedure given here in under is to be used for all Supply Chain/Contracts/Services and Purchases functions across **Balmer Lawrie & Co. Ltd.**

Balmer Lawrie Purchase Manual provides for evaluation of performance of Vendors/ Suppliers /Contractors/ Consultants. Further, Fraud Prevention Policy of Balmer Lawrie also covers vendors, suppliers, contractors, service providers, consultants or any other external agency/person having business relationship and/or associated with the company in any manner, as well as their representatives.

This Policy contains provision for putting a Vendor/Supplier/Contractor/Consultant on Suspension and/or on banning list if such agency indulged in corrupt/fraudulent/collusive/coercive practice or failed to render services as per acceptable standards.

A. Definitions

A.1 "Corrupt Practice" means the offering, giving, receiving or soliciting, directly or indirectly, anything of value to improperly influence the actions in selection process or in contract execution.

"Corrupt Practice" also includes any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefit may be obtained or an obligation avoided.

A.2 "Fraudulent Practice" means and includes any act or omission committed by agency or with his connivance or by his agent by misrepresenting/ submitting false documents and/or false information or concealment of facts or to deceive in order to influence a selection process or during execution of contract/order.

A.3 "Collusive Practice amongst bidders (prior to or after bid submission)" means a scheme or arrangement designed to establish bid prices at artificial non- competitive levels and to deprive Balmer Lawrie of the benefits of free and open competition.

A.4 "Coercive practice" means impairing or harming or threatening to impair or harm directly or indirectly, any agency or its property to influence the improperly actions of an agency, obstruction of any investigation or auditing of a procurement process.

A.5 Poor Services means services which are not acceptable to Balmer Lawrie in terms of specifications, quality, quantity, timeliness and not as per the verbal/written advice of dealing Executive/Officer of Balmer Lawrie.

A.6 Vendor/Supplier/Contractor/Consultant/Bidder" is herein after referred as "Agency."

A.7 "Appellate Authority" shall mean Committee of Directors consisting of Director (Finance) and Director (I/C) for SBUs/Functions under respective Directors.

A.8 "Competent Authority "shall mean the authority, who is competent to take final decision for Suspension of business dealing with an Agency/ies and Banning of business dealings with Agency/ies and shall be the "Director" concerned.

A.9 "Allied Agency" shall mean all the concerns within the sphere of effective influence of banned/suspended agencies. In determining this, the following factors may be taken into consideration:

(a) Whether the management is common.
(b) Majority interest in the management is held by the partners or directors of banned/suspended firm.
(c) Substantial or majority shares are owned by banned/suspended agency and by virtue of this it has a controlling voice.

A.10 "Investigating Agency" shall mean any department or unit of Balmer Lawrie investigating into the conduct of Agency/party and shall include the Vigilance Department of Balmer Lawrie, Central Bureau of Investigation, State Police or any other agency set up by the Central or state government having power to investigate.

B. **Actions against bidder(s) indulging in corrupt/fraudulent/collusive/coercive practice**

B.1 The Competent Authority for Banning of any agency is the Director (In-Charge) of the SBU/Function.

B.2 Irregularities noticed during the evaluation of the bids:

If it is observed during bidding process/bids evaluation stage that a bidder has indulged in corrupt/fraudulent/collusive/coercive practice, the bid of such Bidder(s) shall be rejected and its Earnest Money Deposit (EMD)shall be forfeited.

Further, such agency shall be banned for future business with Balmer Lawrie & Co. Ltd. For a period specified in para **B.3.2** below from the date of issue of banning order.

A Vendor can also be banned for future business if he fails to supply products/services as per standards as prescribed in the tender or to the satisfaction of the company and its representative(s).

B.3 Irregularities noticed after award of contract

B.3.1 (i) **During execution of contract**:
If an agency, is found to have indulged in corrupt/fraudulent/collusive/coercive practices, during execution of contract, the agency shall be banned from entering into any for future business with Balmer Lawrie for a period specified in para **B.3.2** below from the date of issue of banning order.

The concerned order(s)/contract(s) where corrupt/fraudulent/collusive/coercive practices or failure to provide standard products/services is observed, shall be suspended with immediate effect by SBU/Function Head whereby the supply/work/service and payment etc. will be suspended. Action shall be initiated for putting the agency on banning.

After the conclusion of the process, the order (s)/contract(s), where it is concluded that such irregularities have been committed shall be terminated and Contract cum Performance Bank Guarantee (CPBG) submitted by agency against such order(s)/contract(s) shall also be encashed. The amount that may have become due to the contractor on account of work already executed by him satisfactorily shall be payable to the contractor and this amount shall be subject to adjustment against any amounts due from the contractor under the terms of the contract. Any amount due on account of supply of poor quality of products/services shall not be payable. In case of poor quality of supplies then no amount is payable to the vendor. In case the Company get the supply of same goods from another party for the higher cost for meeting quality requirements such cost also will be recovered from the errant supplier/vendor.

(ii) After execution of contract and during Defect liability period (DLP)/Warranty/Guarantee period:

If an agency/vendor/service provider is found to have indulged in corrupt/fraudulent/collusive/coercive practices, or supply of poor quality of goods/products/services, after execution of contract and during DLP/ Warranty/Guarantee Period, the agency shall be banned for future business with **Balmer Lawrie** for a period specified in para B2.2 below from the date of issue of banning order.

Further, the Contract cum Performance Bank Guarantee (CPBG) submitted by agency against such order(s)/ contract(s) shall be encashed.

(iii) After expiry of Defect liability period (DLP)/Warranty/Guarantee Period

If an agency is found to have indulged in corrupt/fraudulent/collusive/coercive practices or supply of poor-quality products/services after expiry of Defect liability period (DLP)/Warranty/Guarantee Period, or during pendency of the service/products, contract for supply of goods/products/services, the agency shall be banned for future business with **Balmer Lawrie** for a period specified in para **B.3.2** below from the date of issue of banning order

B.3.2 Period of Banning

Banning period shall be reckoned from the date of banning order and ordinarily the period for which agency is banned should not be less than 6 months and should not exceed 3 years. However, in extraordinary circumstances, the period can be more than 3 years depending on the gravity of violations.

In exceptional cases where the act of vendor/contractor is a threat to the National Security, the banning shall be for indefinite period.

B.3.3 Exceptional Cases:

B.3.3.1 However as an exception, the ongoing order(s)/contract(s) where corrupt/fraudulent/collusive/ coercive practice has been observed, or there has been a failure to adhere to the standards, the agency may be allowed to complete the supply/job in case of following situations:

a) No adverse performance of the job as per scope of work (performance to be reviewed on quarterly basis) and;
b) The supply/job is of critical nature in terms of adverse impact on the Project Completion Schedule and/or prospective revenue generation.

However, the discretion for the same rests solely with the company/its representative (s) and the vendor/ contractor/supplier shall not have any right to demand the same.

B.3.3.2 The approval for allowing the agency to complete the supply/job is to be obtained from Director concerned based on the detailed deliberation/recommendation of the committee consisting of Head of SCM /Purchase, A&F, SBU/Function Head of the SBU. Such recommendation shall be put up to Director concerned through Corporate **A & F** Department and Corporate Legal department with their comments.

Further, all such cases shall also be put up to Board of Directors for their information.

After approval of competent authority to allow the agency to complete the supply/job, the agency will be allowed to execute the order/contract and payment shall also be made as per the provisions of the order/contract.

B.3.3.3 The Contract cum Performance Bank Guarantee (CPBG). of such agency against the order(s)/contract(s) where agency is allowed to complete the supply/job in above exceptional case shall not be encashed on this ground. The contract shall be executed as per terms and conditions of the contract. However, the agency shall be put on banning list from the date of banning order.

Also, in the event the contract is terminated owing to poor quality of products/services the CPBG may be encashed by the company.

C Effect of banning on other ongoing contracts/tenders

C.1 If an agency is put on holiday/ banned, such agency should not be considered in ongoing tenders/future tenders.

C.2 However, if such an agency is already executing other order(s)1 contract (s) where no corrupt/fraudulent/ collusive/coercive practice is found, the agency should be allowed to continue till its completion without any further increase in scope except those incidental to original scope mentioned in the contract.

C.3 If an agency is put on the Banning List during tendering and no irregularity is found in the case under process:

C.3.1 After issue of the enquiry/bid/tender, but before opening of Technical Bid, the bid submitted by the agency shall be ignored.

C.3.2 After opening Technical bid but before opening the Price bid, the Price bid of the agency shall not be opened and BG/EMD submitted by the agency shall be returned to the agency.

C.3.3 After opening of price, BG/EMD made by the agency shall be returned; the offer of the agency shall be ignored & will not be further evaluated. If the agency is put on banning list for fraud/mis-appropriation of facts committed in the same tender/other tender where errant agency emerges as the lowest (**L1**), then such tender shall also be cancelled and re-invited.

D. Procedure for Suspension of Bidder

D.1 Initiation of Suspension

Action for suspension of business dealing with any agency/(ies) shall be initiated by SCM/Purchase Department of the SBU/Function, when,

i. Complaint from the indenting users' department/employees against the unsatisfactory/inferior/ substandard service/product given by the Service Provider/Contractor/Vendor.

ii. Corporate Vigilance Department based on the fact of the case gathered during investigation by them recommend for specific immediate action against the agency.

iii. Corporate Vigilance Department based on the input from investigating agency, forward for specific immediate action against the agency.

iv. Non-performance of Vendor/Supplier/Service Provider/Contractor/Consultant leading to termination of the Contract/Order

v. The vendors/bidders/suppliers quoting wrong and misleading information while quoting for a Tender and the same is found out by the Tender Committee while preparing the TCR can also suspend such agency/bidder under these rules.

D.2 Suspension Procedure:

D.2.1 The order of suspension would operate initially for a period not more than six months and is to be communicated to the agency and also to Corporate Vigilance Department. Period of suspension can be extended with the approval of the Competent Authority by two months at a time with a ceiling of six months pending a conclusive decision to put the agency on banning list.

In the cases of supply of poor-quality products/rendering poor services, a recommendation for suspension can be ordered by a committee comprising Indenting department head, **Purchase/SCM** Head & **SBU/Function** Head.

D.2.2 The suspension order shall also be hosted on Balmer Lawrie's intranet and a copy will be forwarded to all **SBU** Heads by **CSM/Purchase** Department of **the SBU/Function**. During the period of suspension, no new business dealing may be held with the agency.

D.2.3 Period of suspension shall be accounted for in the final order passed for banning of business with the agency.

D.2.4 The decision regarding suspension of business dealings should also be communicated in writing to the agency.

D.2.5 If a prima-facie, case is made out that the agency is guilty on the grounds which can result in banning of business dealings, proposal for issuance of suspension order and **show-cause notice** shall be put up to the Competent Authority. The suspension order and **Show Cause Notice** must include that, **(i)** The agency is put on suspension list and **(ii)** Why action should not be taken for banning the agency for future business from **Balmer Lawrie.**

The competent authority to approve the suspension will be same as that for according approval for banning.

D.2.6 The process for putting the agency on suspension list shall be completed within 30 days from the date of receipt of such intimation as mentioned in clause no. **D.1**.

D.3 Effect of Suspension of business:

Effect of suspension on other on-going/future tenders will be as under:

D.3.1 No enquiry/bid/tender shall be entertained from an agency as long as the name of agency appears in the Suspension List.

D.3.2 If an agency is put on the Suspension List during tendering:

D.3.2.1 After issue of the enquiry/bid/tender but before opening of Technical bid, the bid submitted by the agency shall be ignored.

D.3.2.2 After opening Technical bid but before opening the Price bid, the Price bid of the agency shall not be opened and BG/EMD submitted by the agency shall be returned to the agency.

D.3.2.3 After opening of price, BG/EMD made by the agency shall be returned; the offer of the agency shall be ignored & will not be further evaluated. If the agency is put on Suspension list for fraud/mis-appropriation of facts conducted in the same tender/other tender where errant agency emerges as the lowest (**L1**), then such tender shall also be cancelled and re-invited.

D.3.3 The existing contract(s)/order(s)under execution shall continue.

D.3.4 Tenders invited for procurement of goods, works and services shall have provision that the bidder shall submit an undertaking to the effect that **(i)** neither the bidder themselves nor their allied agency/(ies) are on banning list of Balmer Lawrie or the Ministry of Petroleum and Natural Gas and **(ii)** bidder is not banned by any Government department/ Public Sector Enterprise. This shall be part of the **NIT**.

E Procedure to be followed in case of corrupt/ fraudulent/collusive/coercive practice

(i) If Project Manager/Project In-Charge/HOD/Dealing Purchase Officer/SCM Executive or any other authority of Balmer Lawrie, receive/acquire conclusive evidence of any corrupt/fraudulent/collusive/coercive practice/ activity, the concerned should immediately initiate action for putting Agency/vendor/supplier/service provider on banning list as per extant procedure.

(ii) In case of a corrupt, fraudulent, collusive and coercive practices, a committee consisting of concerned Head of **SCM, A&F** and **Head** of **SBU** will examine the case in detail.

(iii) In case committee recommends for banning an agency, the committee will put up its recommendation to the concerned **Director** through **Corporate A&F** Department & **Corporate Legal** along with a draft Show Cause Notice providing a final opportunity to the alleged defaulter to defend his case.

The **Show Cause Notice** should contain all the allegations towards the breach committed by Agency including mentioning the provisions of the tender so breached and seeking explanation as to why the action should not be taken against the agency as per provisions of tender. All the supporting documents also need to be provided to the agency along with the **Show Cause Notice**.

If the Agency desires for personal hearing, the same can also be given.

However, the above provision for personal hearing shall not be made a part of the **Show Cause Notice**.

(iv) After obtaining approval from the concerned **Director, SCM/Purchase** Department of the **SBU** will issue the Show Cause Notice to the concerned agency giving an opportunity to respond within 15 days.

In response to the Show Cause Notice if the agency seeks any additional document (applicable only once), the same should be provided to the agency at the earliest but not later than7days. However, the period to respond in such a case will be appropriately adjusted. However, the agency cannot and shall not be allowed to seek documents repeatedly and seek extension of time on this ground to respond.

(v) On receipt of reply in response to Show Cause Notice, **SCM/ Purchase** Department will prepare a proposal covering point wise reply to issues brought out by the agency in their reply to Show Cause Notice and forward their final recommendation for keeping the agency on Banning List or otherwise through the **SBU Head** for obtaining the approval of the **Director** concerned after legal vetting through **Corporate Legal department**.

In case the committee recommends for putting the agency on banning list, the draft Speaking Order to be issued to the agency with reasons for putting on banning list will also be submitted along with their recommendation.

In case Corporate Legal department make any contrary observation, the file may be referred back to, **SCM/ Purchase** Department for further deliberations and recommendation on the observation made by the **Corporate Legal** Department and further submission to Competent Authority.

While according the approval, reasons are to be recorded by the Competent Authority. These reasons shall also be put up by the committee along with their recommendations. In case Competent Authority does not agree with recommendation of the Committee, it will record the reasons for the same. The decision of Competent Authority shall be final.

(vi) After obtaining approval from the concerned **Director**, **SCM/Purchase** department will issue a letter in the form of a **Speaking Order** to the agency conveying the decision of putting the agency on the banning list along with reasons.

(vii) The banning order shall also be hosted on **Balmer Lawrie's** intranet and a copy will be forwarded to all **SBU/Function Heads** by **SCM/Purchase** Department of the **SBU/Function**. A list of all agencies put on banning will be maintained at Balmer Lawrie Intranet/website, mentioning the period of operation of such ban.

Further, if a communication has been received from the **Ministry of Petroleum & Natural Gas** or other **PSUs** to ban the agency from dealing with any **PSE**, the agency shall be automatically put in the banned list.

(viii) The above process of banning should be completed within 04months from initiation of case by concerned department responsible for invitation of bid.

(ix) Pending the outcome of suspension of work and **Show Cause Notice**, a parallel tender can be invited and processed till Price Bid Opening (PBO) stage to save time required for re-tendering. Eventually, this tender to be concluded or otherwise based on the outcome of process of **Show Cause Notice**.

(x) After issuance of banning order, action for termination of order(s)/contract (s) where it has been concluded that such irregularities have been committed and for the encashment of the Performance Bank Guarantee (PBG) against such order(s)/contract (s), will be taken by concerned **SCM/Purchase** department as per extant **DoA**. The amount that may have become due to the contractor on account of work already executed by him shall be payable to the contractor and this amount shall be subject to adjustment against any amounts due from the contractor under the terms of the contract.

No risk and cost provision will be enforced in such cases i.e. The vendor/contractor is not entitled for any compensation on account of costs already incurred, etc., by him.

(xi) An order for banning/suspension passed for a certain specified period shall deemed to have been automatically revoked on the expiry of that specified period and it will not be necessary to issue a specific formal order of revocation. However, the listing of the defaulting vendor/supplier/service provider on the banned companies list shall stay permanently along with the period/duration.

(xii) While putting the bidder on banning list as per the procedure, the holding company, subsidiary, joint venture, sister concerns, group/division of the errant agency shall not be considered for putting on banning list in case certain ongoing project is being executed by the same agency or its associates/allied agencies without any adverse observation. In all other cases banning of an organization will automatically apply to Allied Agencies.

(xiii) In case of contract(s), if Consortium/JV of the Consortium is put on the Banning List, in that case, other ongoing contract(s)/order(s) on the Consortium/JV shall continue, subject to satisfactory performance.

Further, order(s)/contract(s) where such fraudulent/corrupt/collusive/coercive practice have been noticed shall be terminated and Contract cum Performance Bank Guarantee (CPBG) submitted by the agency against such order(s)/contract(s) shall also be encashed. No risk and cost provision will be enforced in such cases. However, in exceptional cases as mentioned in Para **B.3.3**, hereinabove, the agency may continue, after the approval from the Competent Authority as mentioned, therein.

In case of fraudulent/corrupt/collusive/coercive practice by any member or leader itself, Consortium including errant member & leader will be put on the Banning List and shall not be allowed to participate in the ongoing/future tenders in either as an individual bidder or as a member of Consortium/JV.

(xiv) In case, any Project Management Consultant (PMC) detects fraudulent/corrupt/collusive/coercive practice during evaluation and execution of any contract and recommendations are made to **Balmer Lawrie**, the procedure mentioned, hereinabove, is to be followed after obtaining the documents from the **PMC**, for putting the agency on the Banning List.

(xv) The banning shall be with prospective effect, i.e., with respect to future business dealings.

F. Appeal against the Decision of the Competent Authority

F.1 The agency may file an appeal against the order of the Competent Authority for putting the agency on the Banning List. The appeal shall be filed to the Appellate Authority. Such an appeal shall be preferred, within one month, from the date of receipt of the Banning Order.

F.2 Appellate Authority would consider the appeal and pass **appropriate order** which shall be communicated to the Agency as well as to the Competent Authority.

F.3 Appeal process may be completed within 45 days of filing of appeal with the Appellate Authority.

G. Wherever there is a contradiction with respect to the terms of the '**Fraud Prevention Policy**,' and the '**Policy on blacklisting in case of Corrupt/Fraudulent/Collusive/Coercive Practice**,' the provisions of the '**Policy on blacklisting in case of Corrupt/Fraudulent/Collusive/Coercive Practice**,' shall prevail.

H. The above procedures supersede all earlier circulars/clarifications issued on the subject.

I. This **Policy on blacklisting in case Corrupt/Fraudulent/Collusive/Coercive Practice/rendering poor quality products/services** (Except, **Introduction**, Sub-para **B.3.3, E, H** and **I**) shall be made a part of the tender document.

ANNEXURE-8

DECLARATION –BIDDER TO SUBMIT ON THEIR LETTER PAD FOR RESTRICTIONS ON GROUND OF DEFENSE OF INDIA AND NATIONAL SECURITY

Dated –

With reference to tender No. BL/LI/CHN/CFS/2025-26/XX DT XX/04/2025 for "TURNKEY DESIGN, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF ROOF TOP GRID CONNECTED 200 kWp SOLAR PHOTO VOLTAIC POWER GENERATING SYSTEM ALONG WITH 5 YEARS COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT AT CFS CHENNAI''

We _____ (Name the bidder) have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; we hereby certify that this bidder is not from such a country and is eligible to be considered.

Authorized Signatory :

Company Seal :

ANNEXURE- 9

DECLARATION ON SITE VISIT

We, _____ hereby declare that we have visited Balmer Lawrie & Co Ltd, Container Freight Station (CFS) Chennai on _____ and inspected the entire premises. We have thoroughly understood the scope of work as outlined in Tender No. **BL/LI/CHN/CFS/2025-26/03 DT 03/06/2025** and have accordingly submitted our price bid in line with the requirements specified in the tender.

Name of the Balmer Lawrie representative accompanied in the Site Visit: _____

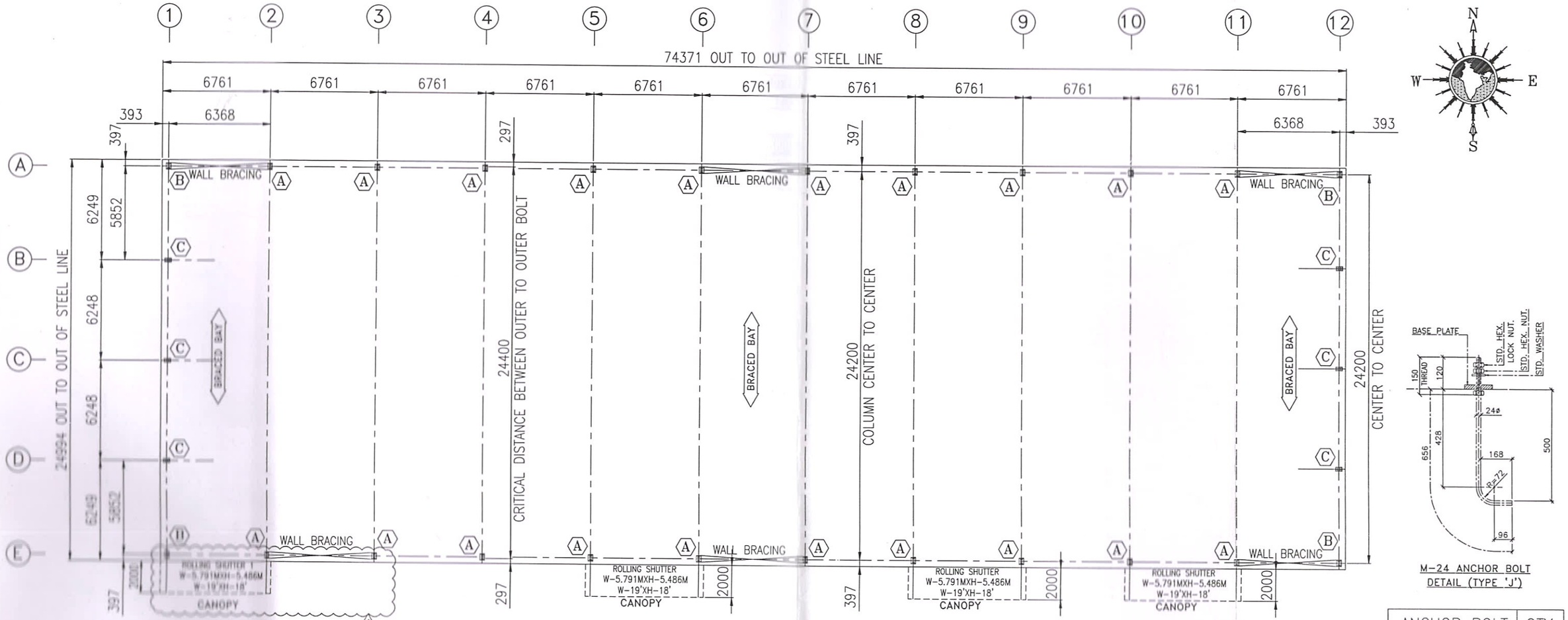
Signature of Balmer Lawrie representative (with date & stamp): _____

Place :

Signature of Tenderer:

Date :

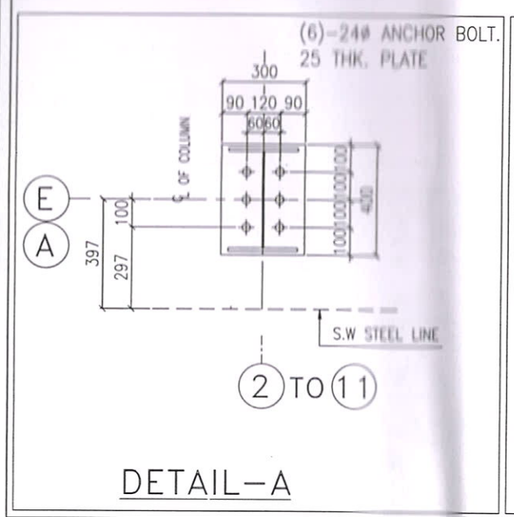
Name and Address:



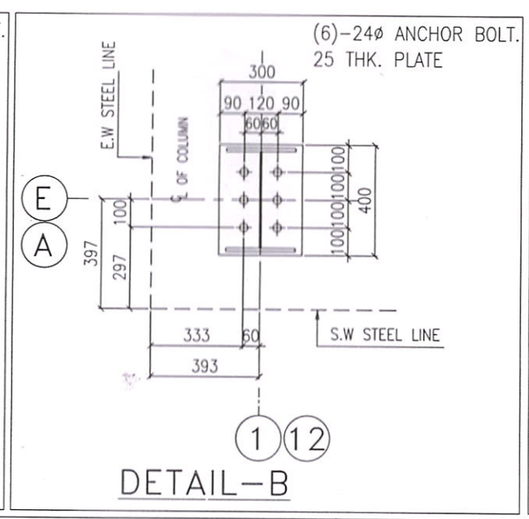
ANCHOR BOLT LAYOUT PLAN

M-24 ANCHOR BOLT DETAIL (TYPE 'J')

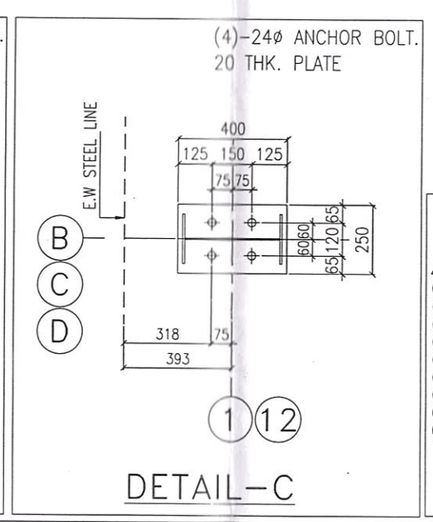
ANCHOR BOLT	QTY
⊕ Dia= 24	168



DETAIL-A



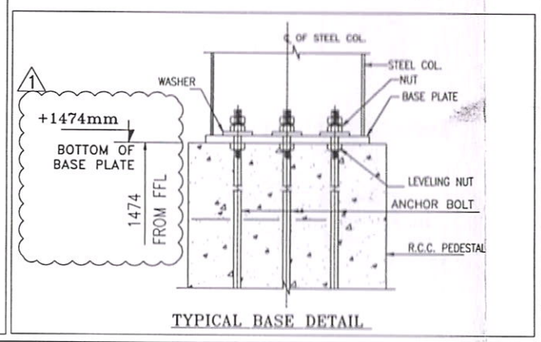
DETAIL-B



DETAIL-C

Structural Designs Proof-Checked

Prof. G. APPA RAO
Structural Engineering Division
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India



TYPICAL BASE DETAIL

NO.	DATE	DETAILS	DES	DRW	CHK
1	23.05.22	RE-ISSUED FOR APPROVAL	KAR	DLS	MLS
0	11.05.22	ISSUED FOR APPROVAL	KAR	DLS	MLS

REVISIONS

CUSTOMER
BALMER LAWRIE & Co. Ltd. CFS

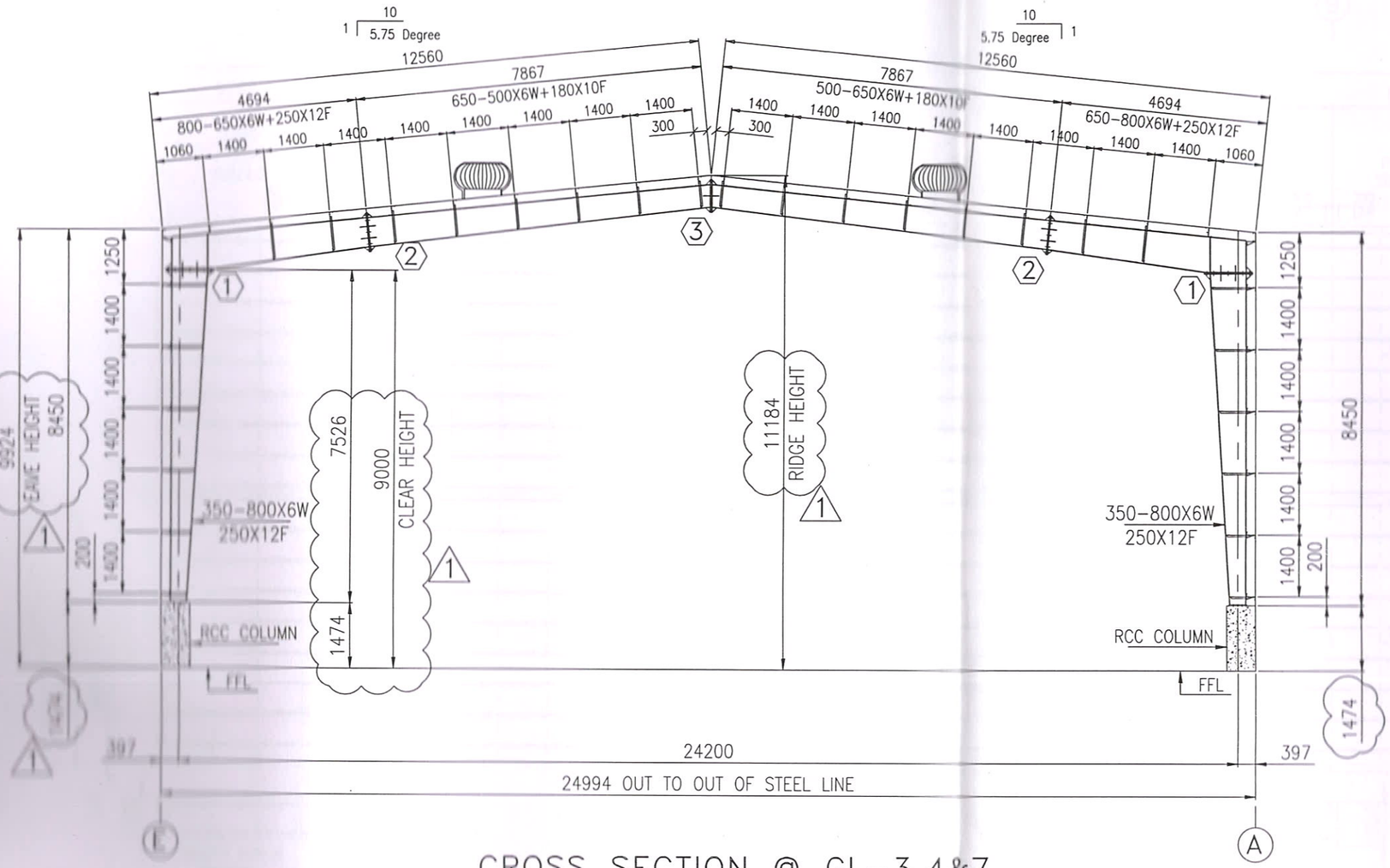
PROJECT
PRE ENGINEERED BUILDING
Contract No.4200024787 / Date : 22.04.2022

LOCATION
32,SATHANGADU VILLAGE,MANALI,CHENNAI-600068

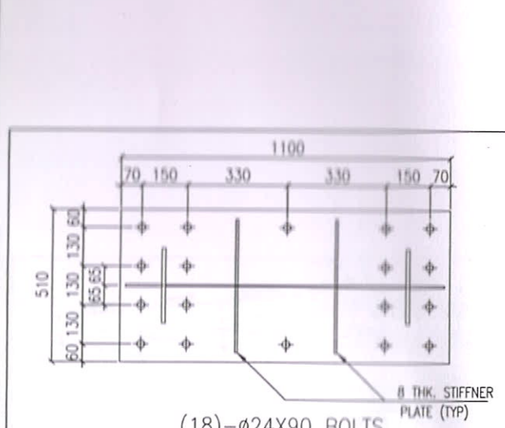
M/s.HARI ENTERPRISES
No.3 SATHYA SAI STREET,MTH ROAD,PATTABIRAM
CHENNAI - 600072
MAIL ID : mukeshe.mescontractor@gmail.com
Phone No : 9940300060

DRG.TITLE
ANCHOR BOLT LAYOUT PLAN

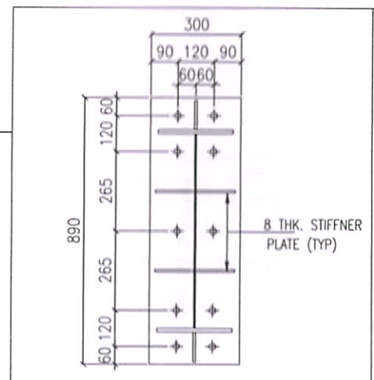
APPRD.	DATE 23.05.2022	SCALE N.T.S	
JOB NO. HE-001	BUILDING NO. 01	DRAWING NO. AB-01	REV. 1



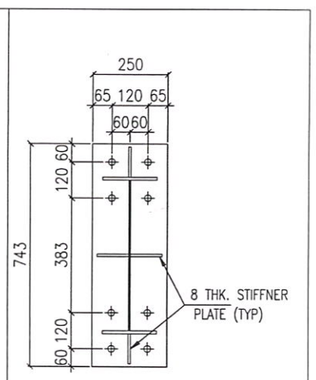
CROSS SECTION @ GL-3,4&7



(18)-ø24X90 BOLTS
25 THK. PLATE
DETAIL-1



(10)-ø20X70 BOLTS
20 THK. PLATE
DETAIL-2



(8)-ø24X90 BOLTS
25 THK. PLATE
DETAIL-3

Structural Designs Proof Checked
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Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

NO.	DATE	DETAILS	DES	DRW	CHK
1	23.05.22	RE-ISSUED FOR APPROVAL	KAR	DLS	MLS
0	11.05.22	ISSUED FOR APPROVAL	KAR	DLS	MLS

REVISIONS

CUSTOMER
BALMER LAWRIE & Co. Ltd. CFS

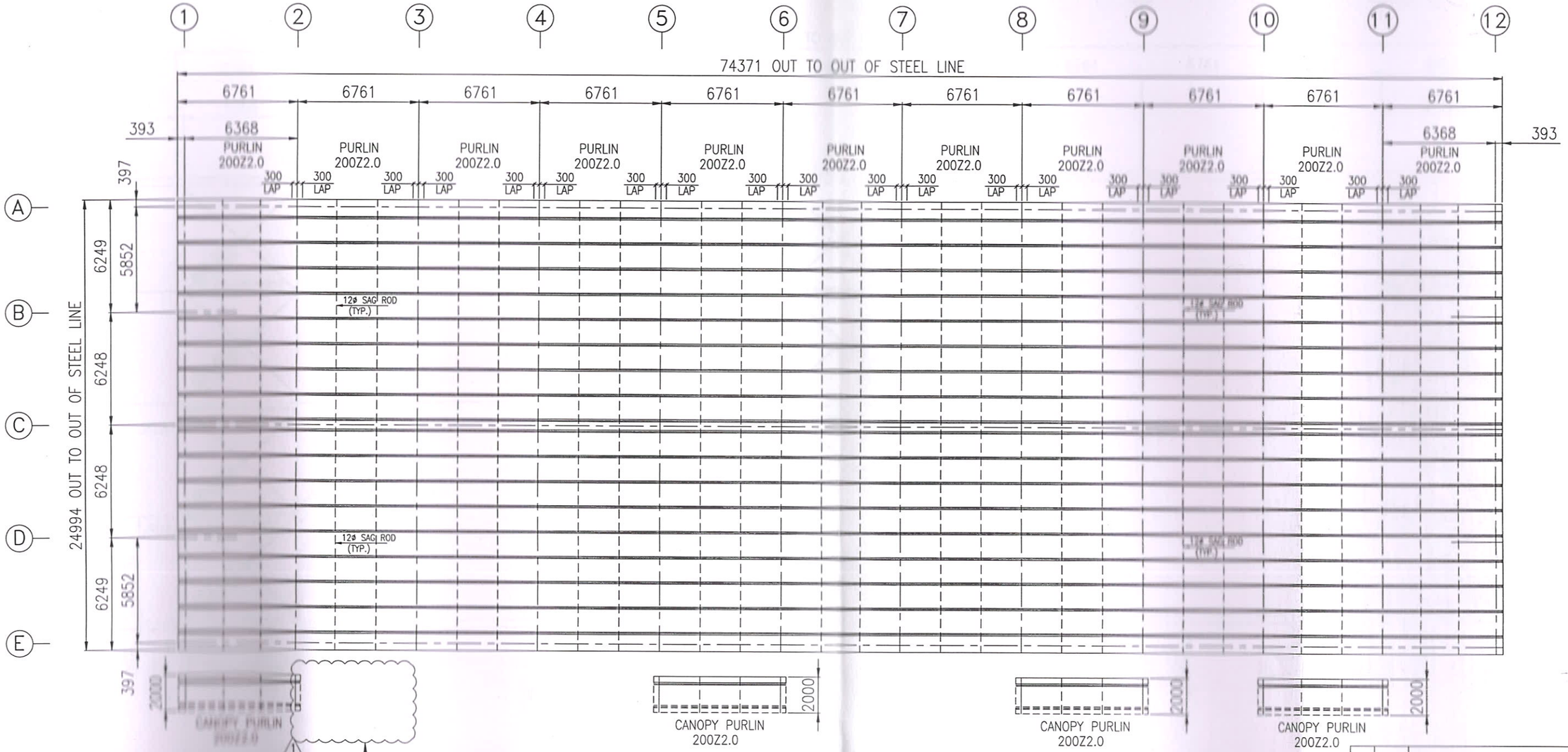
PROJECT
PRE ENGINEERED BUILDING
Contract No.4200024787 / Date : 22.04.2022

LOCATION
32,SATHANGADU VILLAGE,MANALI,CHENNAI-600068

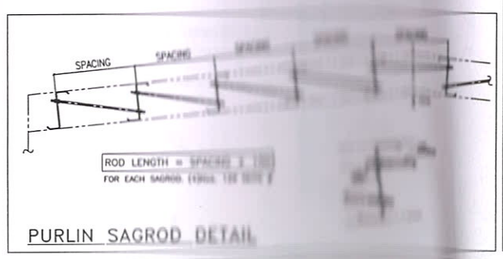
M/s.HARI ENTERPRISES
No.3 SATHYA SAI STREET,MTH ROAD,PATTABIRAM
CHENNAI - 600072
MAIL ID : mukeshe.mescontractor@gmail.com
Phone No : 9940300060

DRG.TITLE
CROSS SECTION @ GL-4&7

APPRD.	DATE	SCALE	
	23.05.2022	N.T.S	
JOB NO.	BUILDING NO.	DRAWING NO.	REV.
HE-001	01	ER-02	1



ROOF FRAMING PLAN



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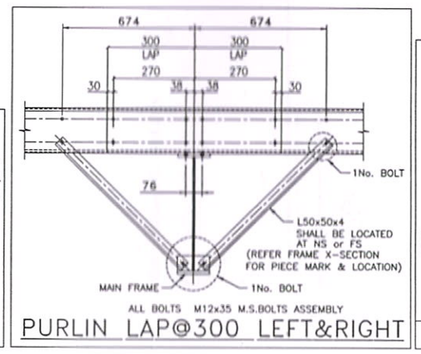
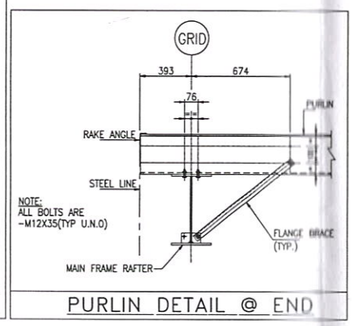


PURLIN LAP@300 LEFT&RIGHT



PURLIN DETAIL @ END

Structural Designs Proof Checked

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Structural Engineering Division
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Indian Institute of Technology Madras
Chennai - 600 036, India

NO.	DATE	DETAILS	DES	DRW	CHK
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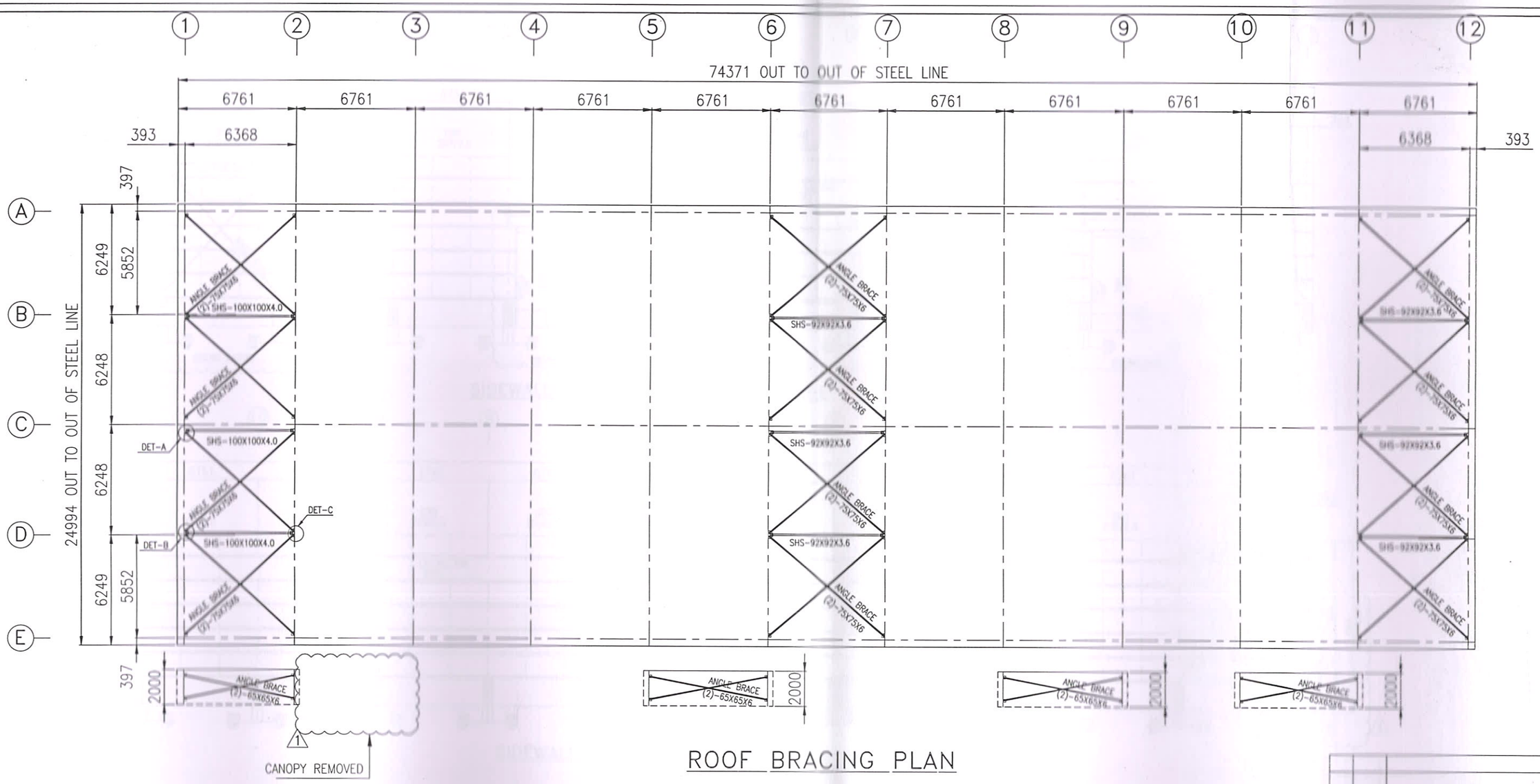
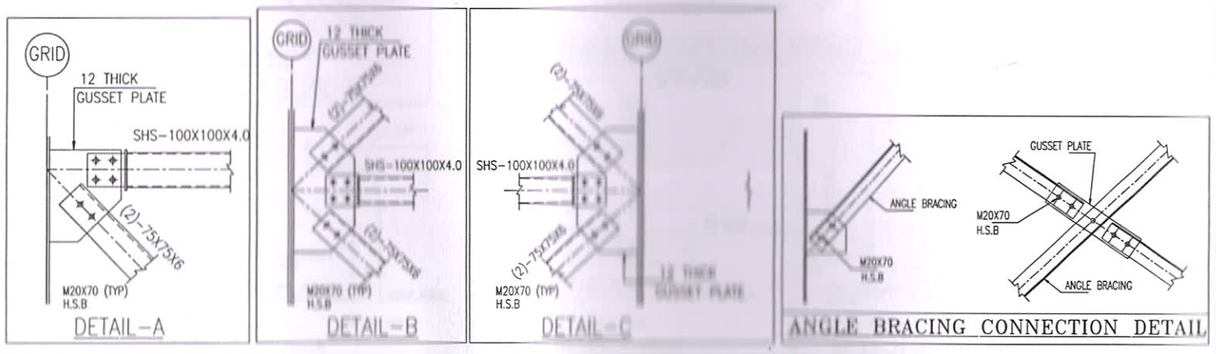
DRG.TITLE
ROOF FRAMING PLAN

APPRD.	DATE	SCALE	
	23.05.2022	N.T.S	
JOB NO.	BUILDING NO.	DRAWING NO.	REV.
HE-001	01	ER-03	1



ROOF BRACING PLAN



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REVISIONS

CUSTOMER: BALMER LAWRIE & Co. Ltd. CFS

PROJECT: PRE ENGINEERED BUILDING
Contract No.4200024787 / Date : 22.04.2022

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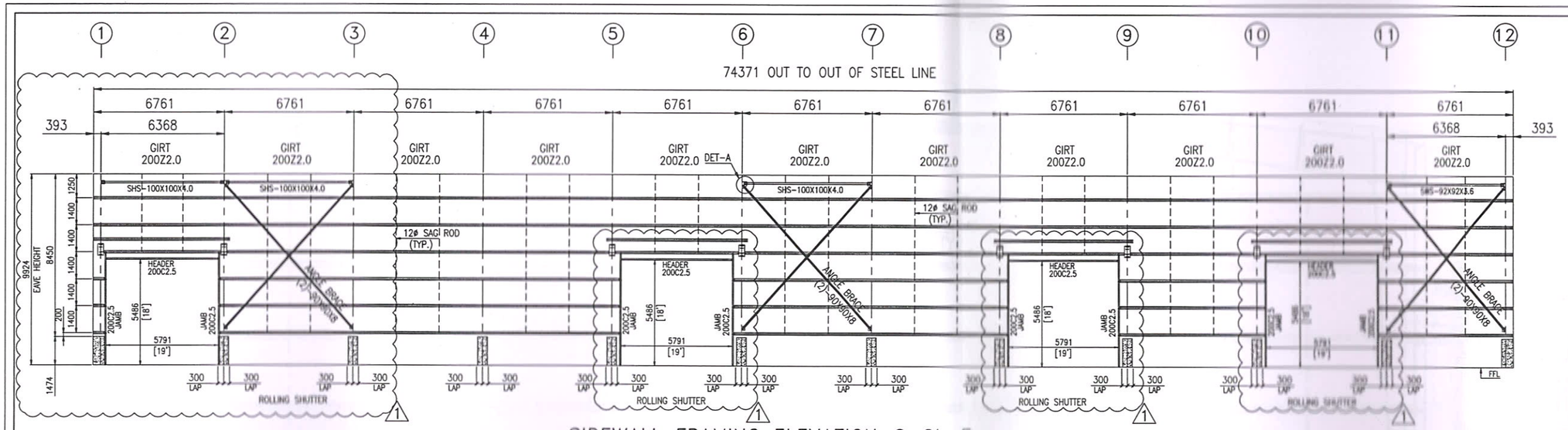
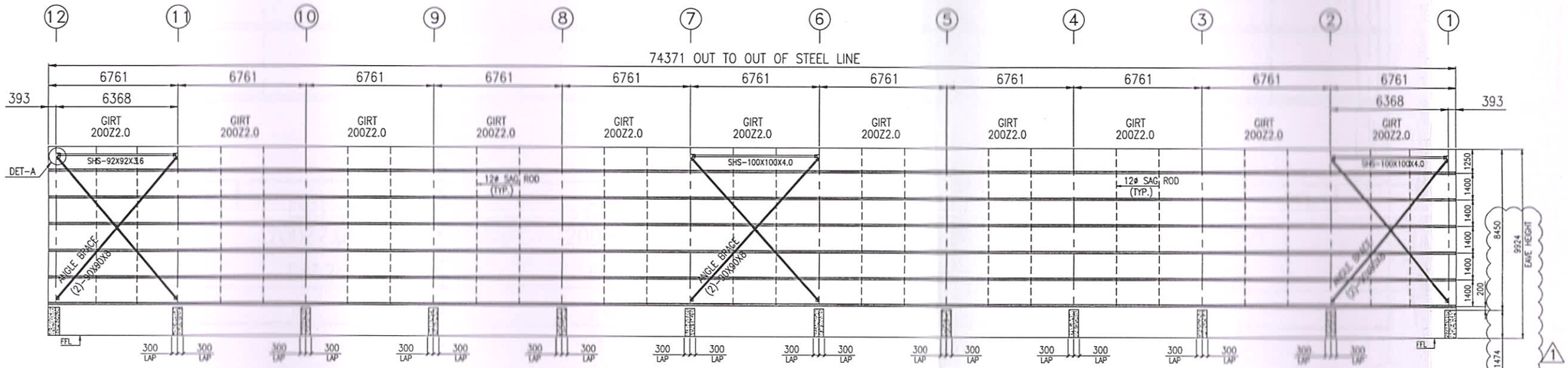
DRG.TITLE: ROOF BRACING PLAN

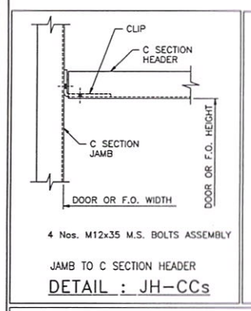
APPRD.	DATE 23.05.2022	SCALE N.T.S	
JOB NO. HE-001	BUILDING NO. 01	DRAWING NO. ER-04	REV. 1



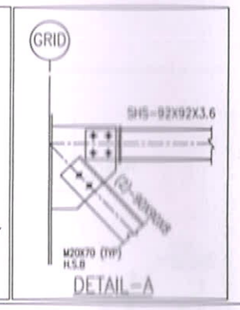
SIDEWALL FRAMING ELEVATION @ GL-E



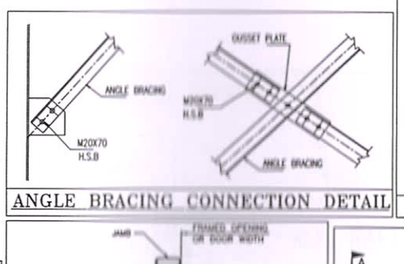
SIDEWALL FRAMING ELEVATION @ GL-A



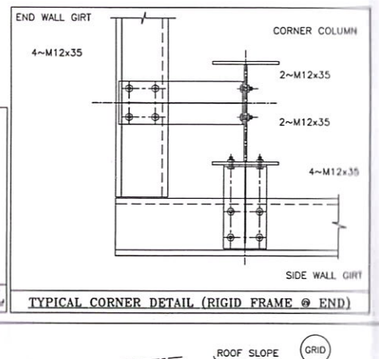
DETAIL : JH-CCs



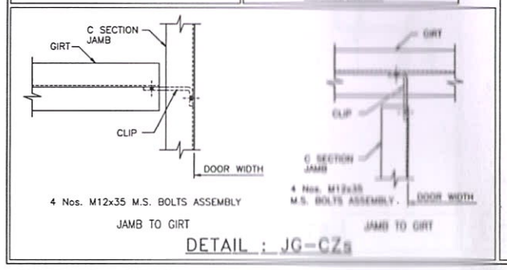
DETAIL-A



ANGLE BRACING CONNECTION DETAIL



TYPICAL CORNER DETAIL (RIGID FRAME @ END)



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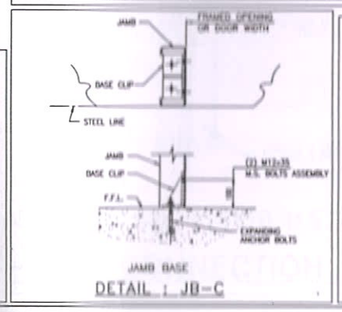

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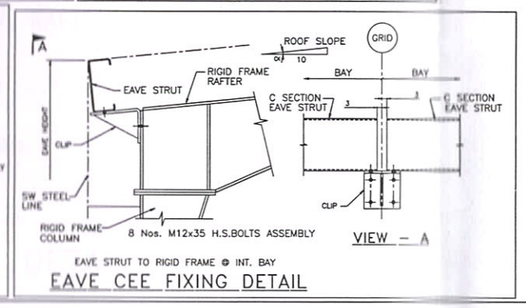
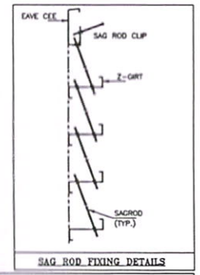
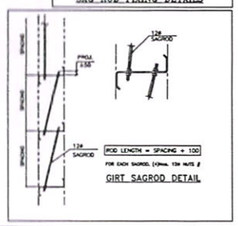


EAVE CEE FIXING DETAIL



SAG ROD FIXING DETAILS



Structural Designs Proof Checked
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REVISIONS

CUSTOMER
BALMER LAWRIE & Co. Ltd. CFS

PROJECT
PRE ENGINEERED BUILDING
Contract No.4200024787 / Date : 22.04.2022

LOCATION
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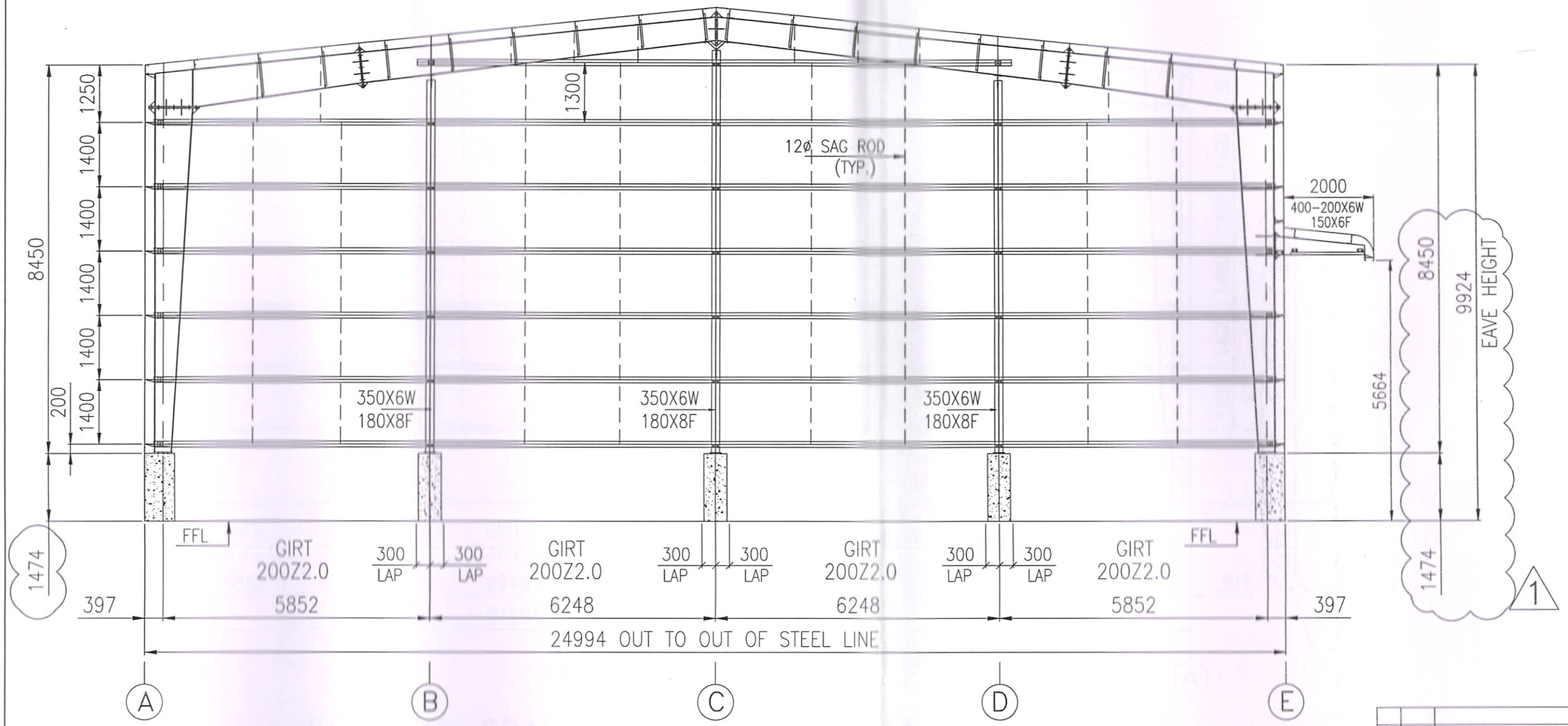
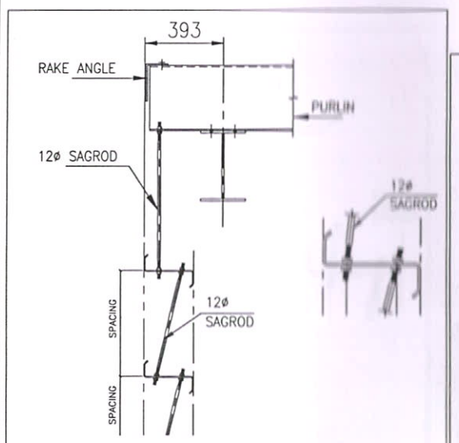
CHENNAI - 600072
MAIL ID : mukeshe.mescontractor@gmail.com
Phone No : 9940300060

DRG.TITLE
SIDEWALL FRAMING ELEVATION

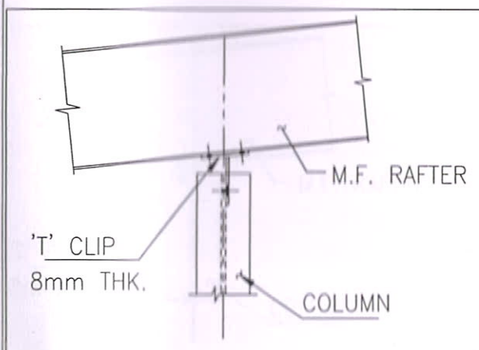
APPRD.	DATE 23.05.2022	SCALE N.T.S	
JOB NO. HE-001	BUILDING NO. 01	DRAWING NO. ER-05	REV. 1



ENDWALL FRAMING ELEVATION @ GL-1

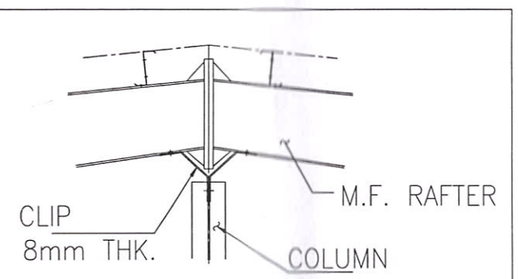


SAGROD DETAIL



ALL BOLTS ARE ø16X70 H.S.B.

T-CLIP CONNECTION DETAIL



ALL BOLTS ARE ø16X70 H.S.B.

CLIP CONNECTION DETAIL

Structural Designs Proof-Checked

Prof. G. APPA RAO
Structural Engineering Division
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

NO.	DATE	DETAILS	DES	DRW	CHK
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PRE ENGINEERED BUILDING
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MAIL ID : mukeshe.mescontractor@gmail.com
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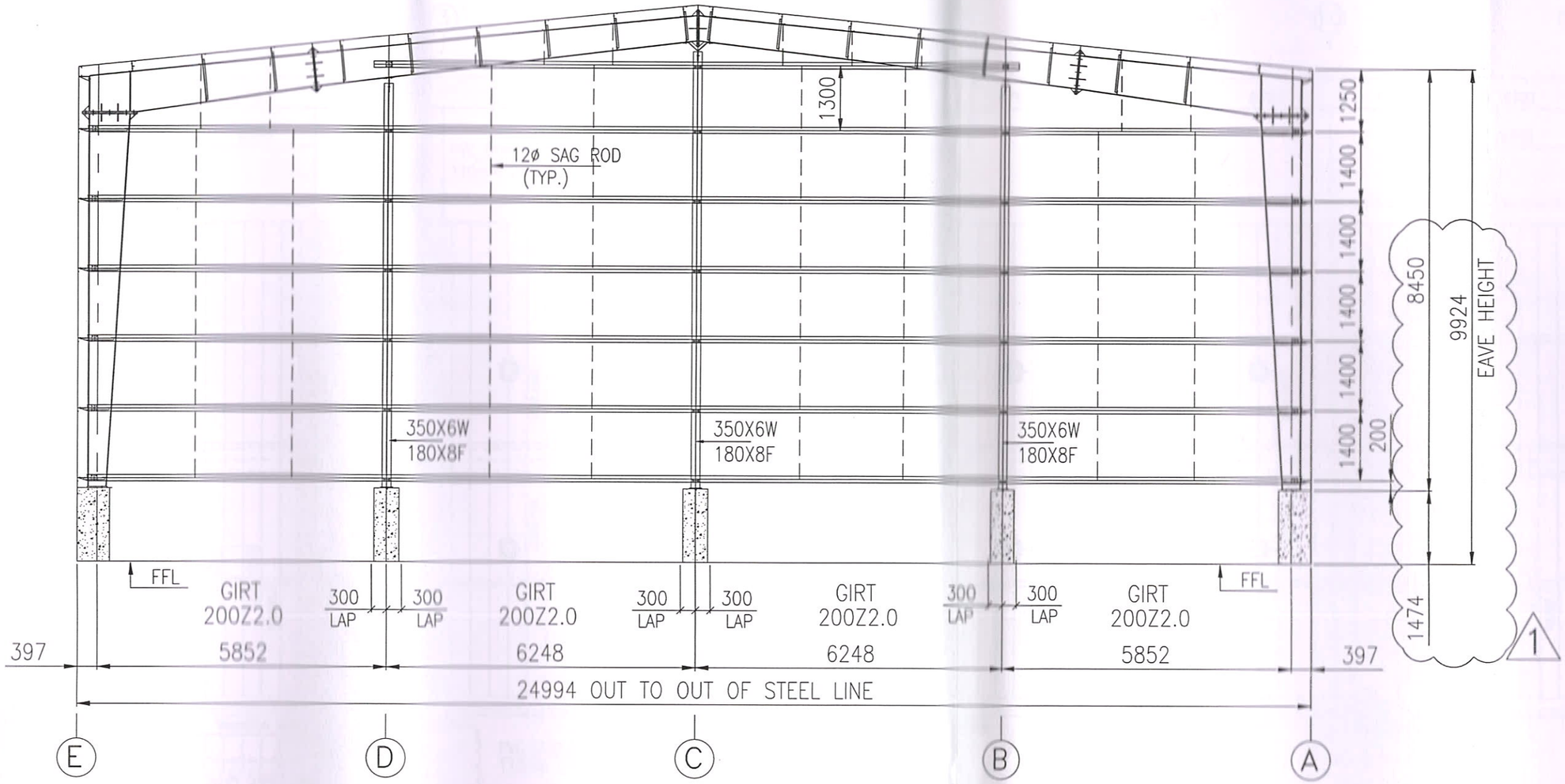
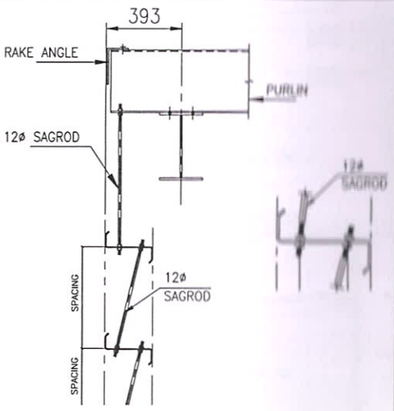
DRG.TITLE
ENDWALL FRAMING ELEVATION @ GL-1

APPRD.	DATE 23.05.2022	SCALE N.T.S	
JOB NO. HE-001	BUILDING NO. 01	DRAWING NO. ER-06	REV. 1



ENDWALL FRAMING ELEVATION @ GL-12



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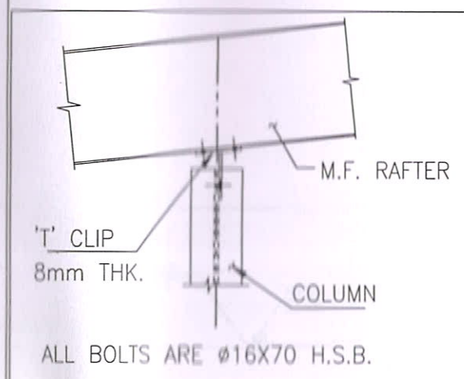
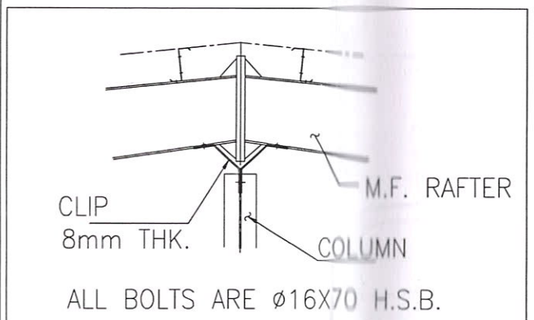


ALL BOLTS ARE ø16X70 H.S.B.

T-CLIP CONNECTION DETAIL



ALL BOLTS ARE ø16X70 H.S.B.

CLIP CONNECTION DETAIL

Structural Designs Proof-Checked

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Indian Institute of Technology Madras
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NO.	DATE	DETAILS	DES	DRW	CHK
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0	11.05.22	ISSUED FOR APPROVAL	KAR	DLS	MLS

REVISIONS

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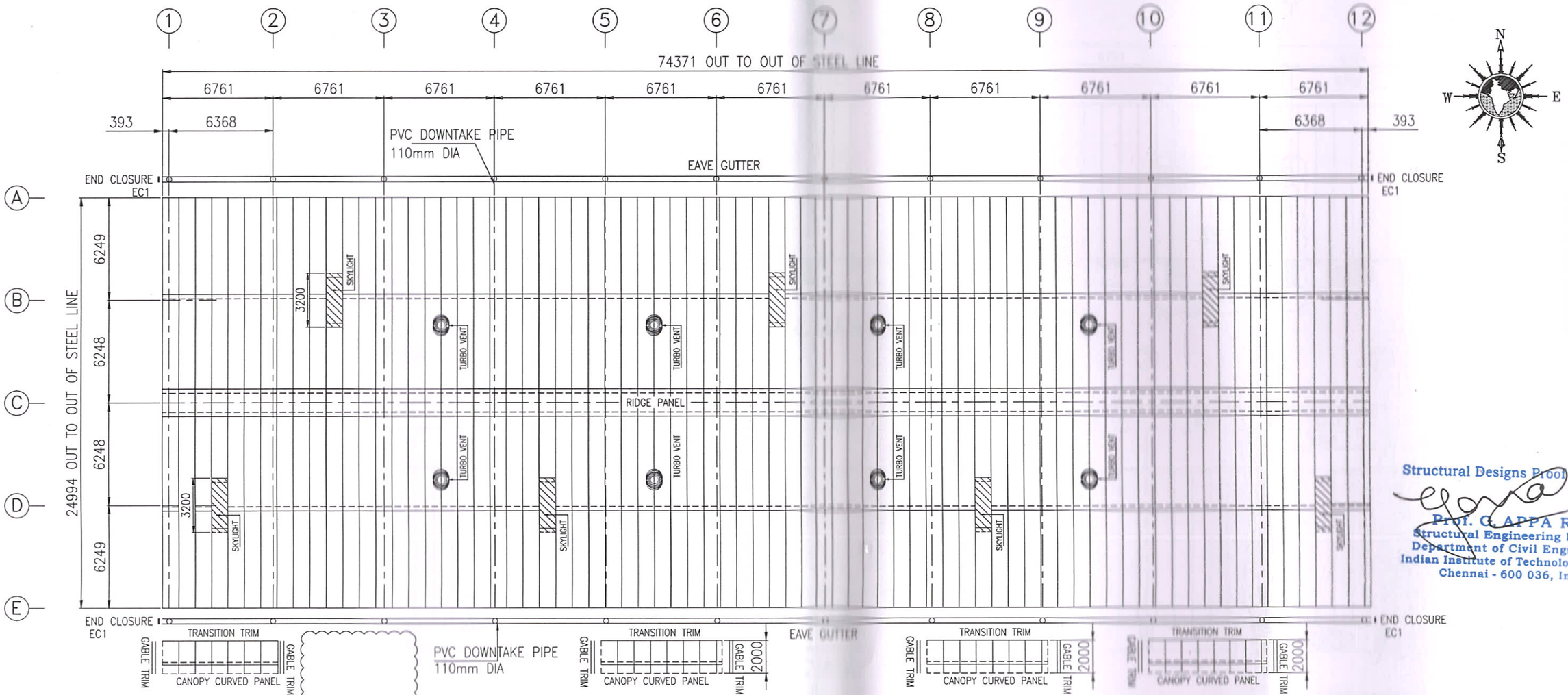
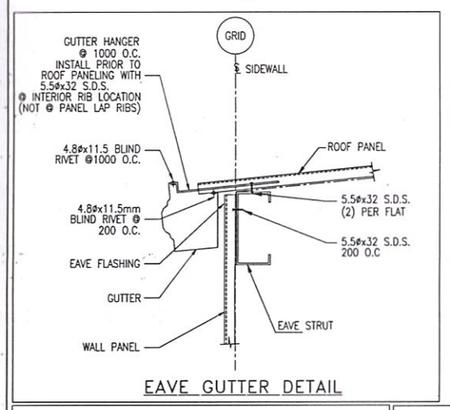
DRG.TITLE
ENDWALL FRAMING ELEVATION @ GL-12

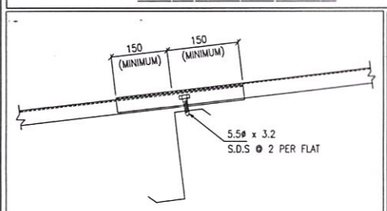
APPRD.	DATE 23.05.2022	SCALE N.T.S	
JOB NO. HE-001	BUILDING NO. 01	DRAWING NO. ER-07	REV. 1



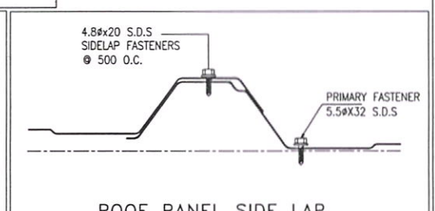
ROOF SHEETING PLAN



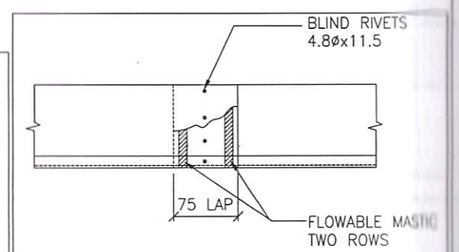
EAVE GUTTER DETAIL



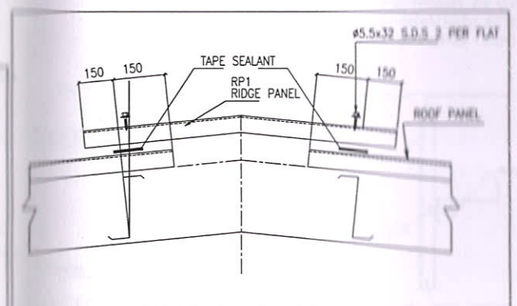
ROOF PANEL END LAP



ROOF PANEL SIDE LAP



TYP.GUTTER SPLICE



RIDGE PANEL DETAIL

Structural Designs Proof-Checked

Prof. C. APPA RAO
Structural Engineering Division
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

NO.	DATE	DETAILS	DES	DRW	CHK
1	23.05.22	RE-ISSUED FOR APPROVAL	MLS	DLS	MLS
0	11.05.22	ISSUED FOR APPROVAL	MLS	DLS	MLS

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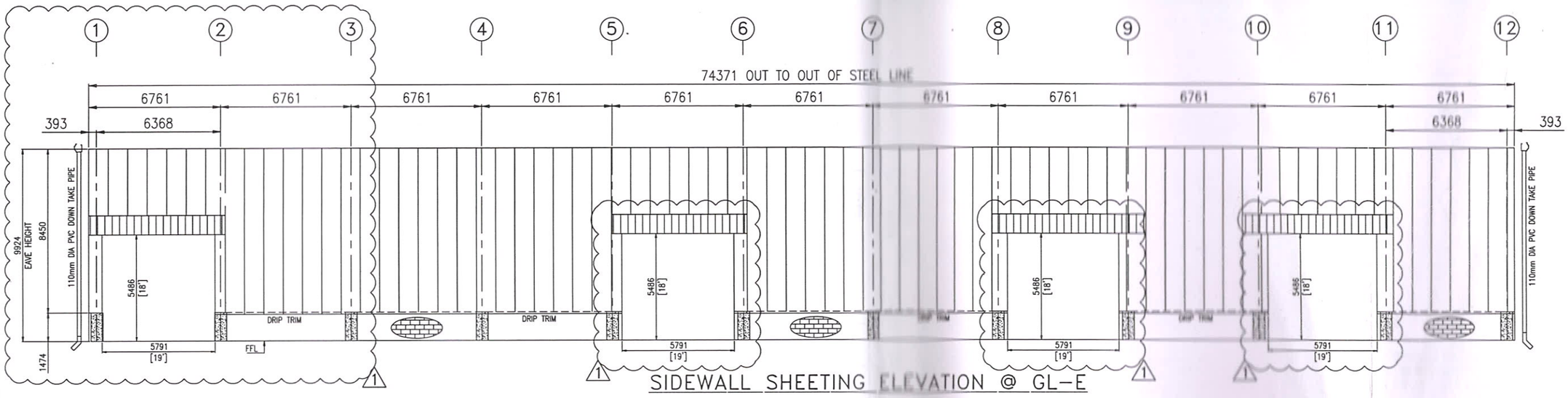
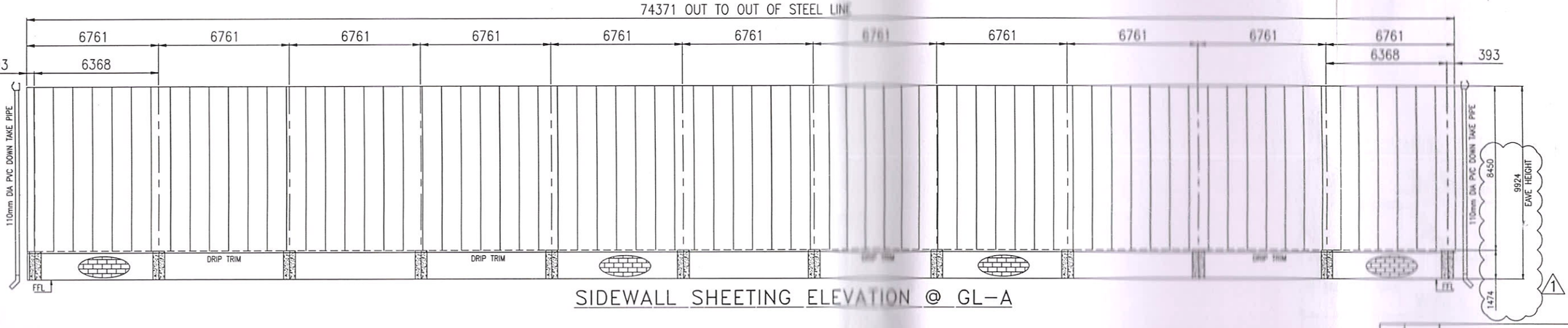
DRG.TITLE
ROOF SHEETING PLAN

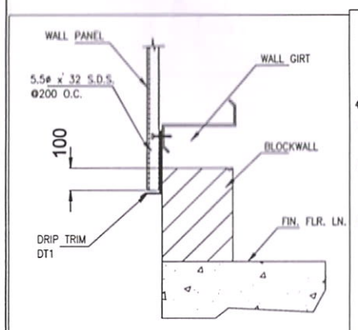
APPRD.	DATE 23.05.2022	SCALE N.T.S	
JOB NO. HE-001	BUILDING NO. 01	DRAWING NO. ER-08	REV. 1



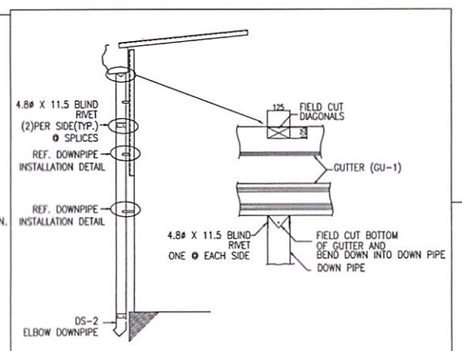
SIDEWALL SHEETING ELEVATION @ GL-E



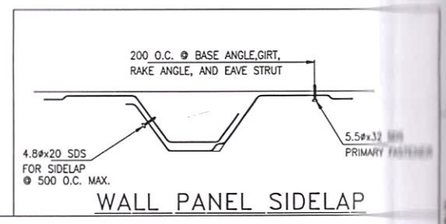
SIDEWALL SHEETING ELEVATION @ GL-A



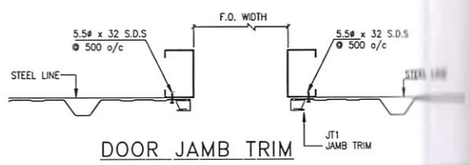
WALL PANEL DETAIL W/ BLOCKWALL



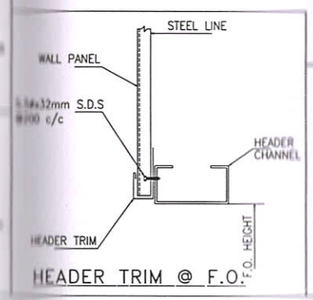
DOWNPIPE FIXING DETAIL



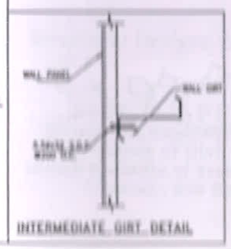
WALL PANEL SIDELAP



DOOR JAMB TRIM



HEADER TRIM @ F.O.



INTERMEDIATE GIRT DETAIL

Structural Designs Proof Checked
Prof. O. APPA RAO
Structural Engineering Division
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

NO.	DATE	DETAILS	DES	DRW	CHK
1	23.05.22	RE-ISSUED FOR APPROVAL	MLS	DLS	MLS
0	11.05.22	ISSUED FOR APPROVAL	MLS	DLS	MLS

REVISIONS

CUSTOMER
BALMER LAWRIE & Co. Ltd. CFS

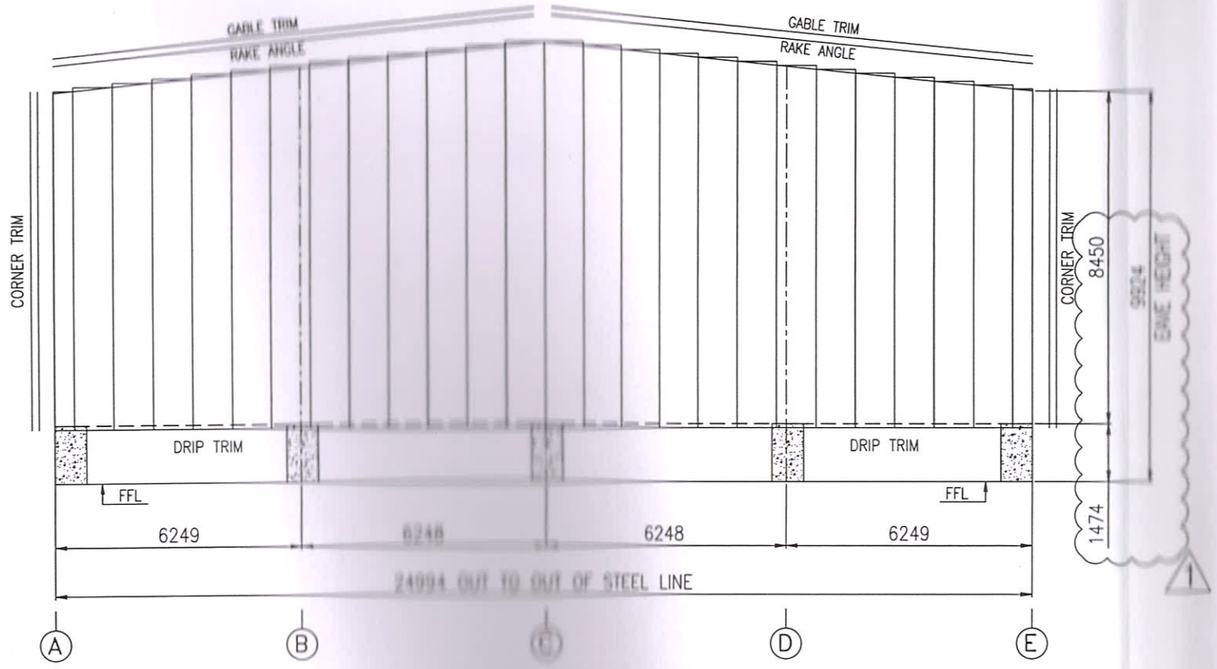
PROJECT
PRE ENGINEERED BUILDING
Contract No.4200024787 / Date : 22.04.2022

LOCATION
32,SATHANGADU VILLAGE,MANALI,CHENNAI-600068

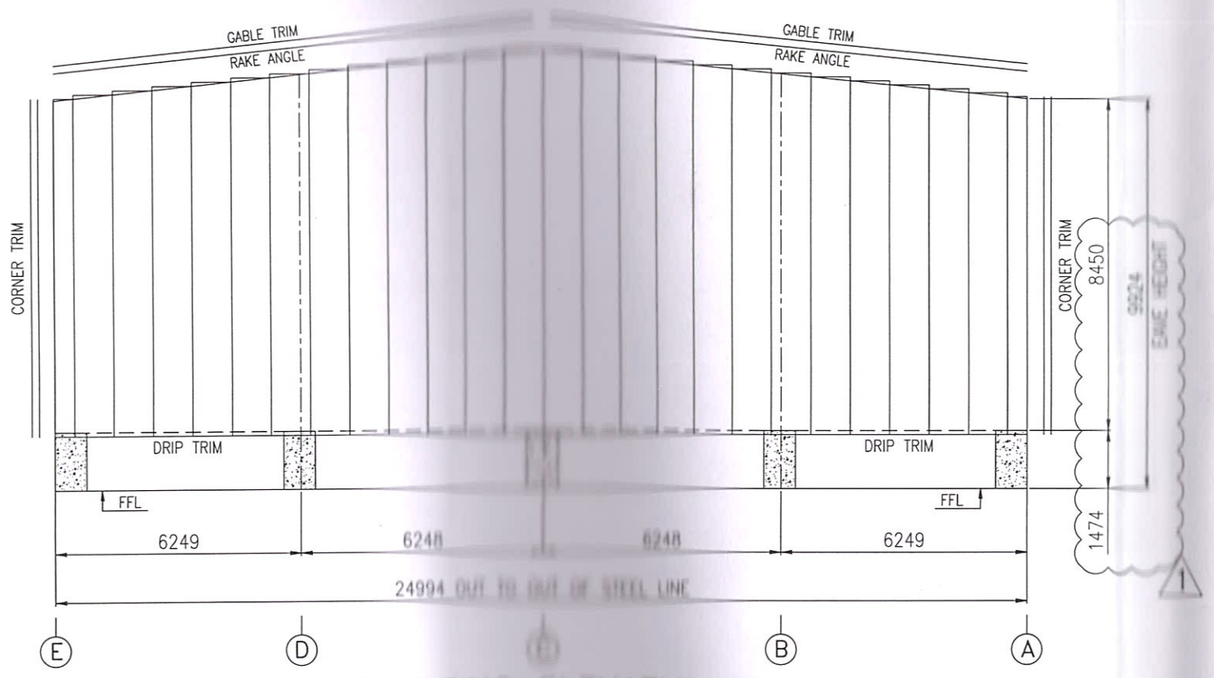
M/s.HARI ENTERPRISES
No.3 SATHYA SAI STREET,MTH ROAD,PATTABIRAM
CHENNAI - 600072
MAIL ID : mukeshe.mescontractor@gmail.com
Phone No : 9940300060

DRG.TITLE
SIDEWALL SHEETING ELEVATION

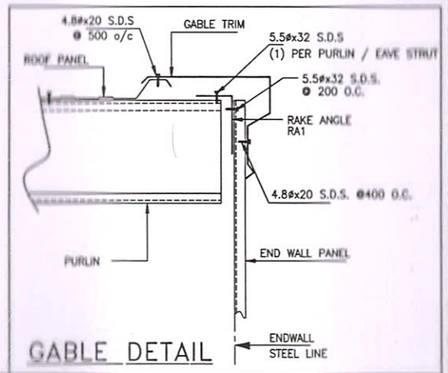
APPRD.	DATE 23.05.2022	SCALE N.T.S	
JOB NO. HE-001	BUILDING NO. 01	DRAWING NO. ER-09	REV. 1



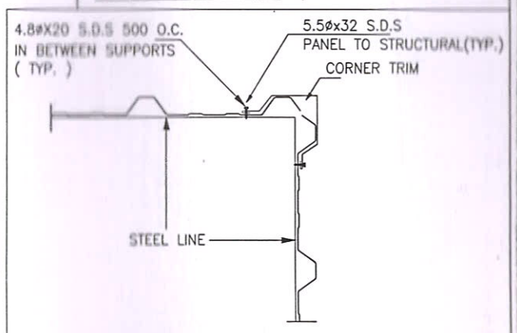
ENDWALL SHEETING ELEVATION @ GL-1



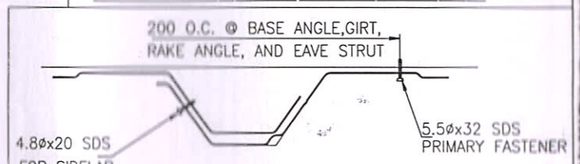
ENDWALL SHEETING ELEVATION @ GL-12



GABLE DETAIL



CORNER TRIM INSTALLATION



WALL PANEL SIDELAP

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ENDWALL SHEETING ELEVATION

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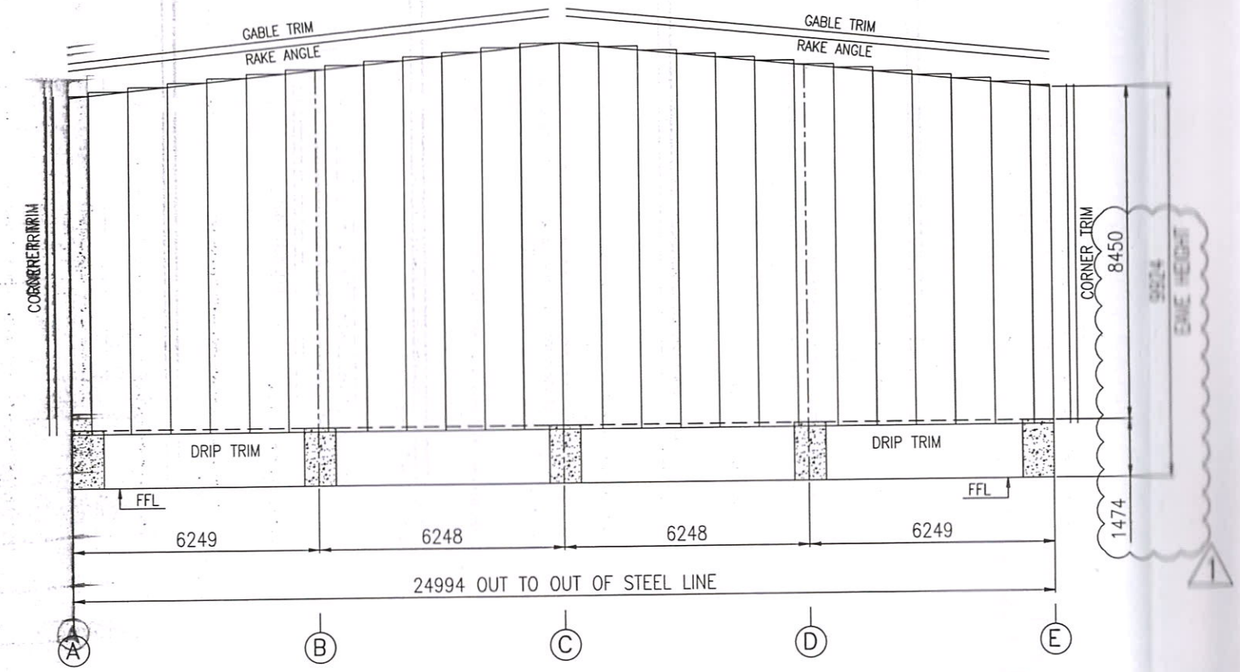
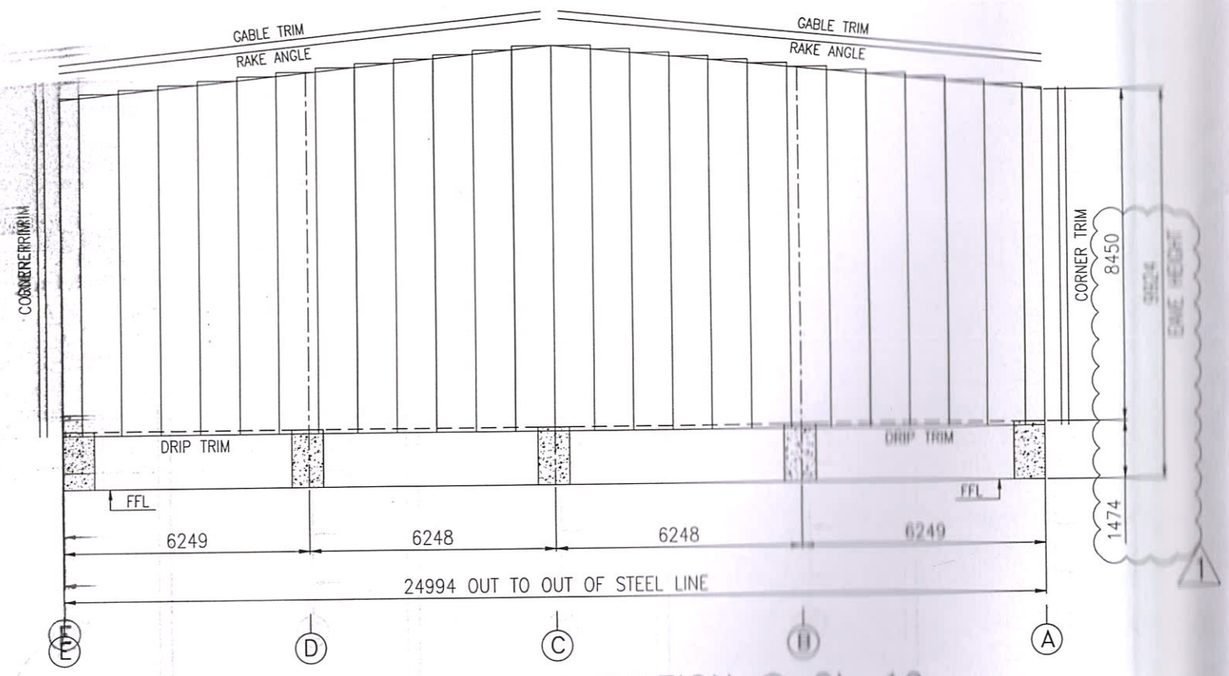
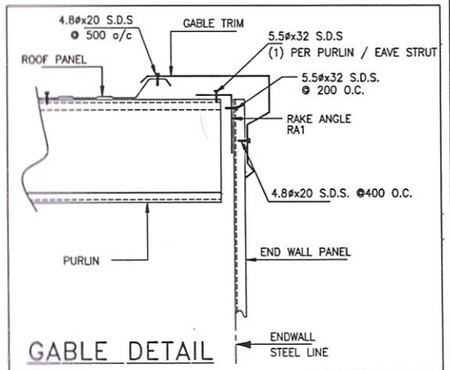
Structural Designs Proof-Checked
Prof. G.APPA RAO
Structural Engineering Division
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India



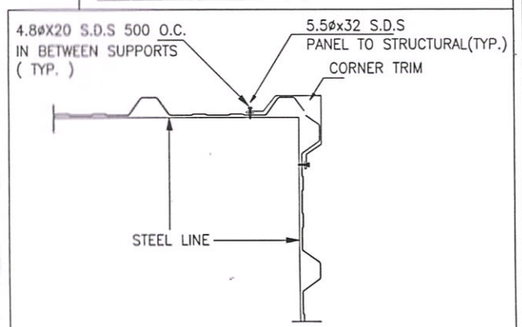
ENDWALL SHEETING ELEVATION @ GL-1



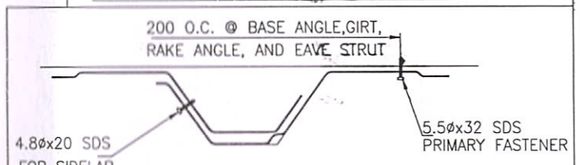
ENDWALL SHEETING ELEVATION @ GL-12



GABLE DETAIL



CORNER TRIM INSTALLATION



WALL PANEL SIDELAP

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