

NOTICE INVITING E - TENDER

ENIT No. 58 of 2023-24 (Fresh) JK Agro

No. Agro/DM/PSJ/4822-25

Dated:- 15.12.2023

JK AGRO invites E-Tender in Double Cover system of tendering for the following work:

| | |
|--|---|
| ENIT No. | 58 of 2023-24 (Fresh) JK Agro |
| Name of Work | Insulation, Cold Room Doors and Docks, Refrigeration System and Ripening Equipment, Racking and Material Handling Equipment, Electrical Fittings and Cabling etc. and Fire Detection equipment Package II Construction of Multipurpose Cold Storage and Ripening Chambers at Talab Tillo, Jammu (J & K) |
| Estimated Cost | Rs. 1792.54 Lacs |
| Completion Period | 09 Months. |
| Earnest Money Deposit | Rs. 35.85 lacs (through RTGS/NEFT/CDR/FDR) |
| Cost of Tender Document (Non-refundable) | Rs 11,800/- (inclusive all taxes & duties) through RTGS/ NEFT/Bank Receipt |
| Date of Publish of NIT (online) | 15.12.2023 |
| Date of Pre - Bid Meeting | 29.12.2023 |
| Document downloading start date/ Bid submission start date | 15.12.2023 |
| Bid submission End date | 04.01.2024 16:00 hrs |
| Date & Time of Opening of Tender | 05.01.2024 15:00 hrs |
| Position of Funds | Available |

For financial eligibility criteria, experience with respect to similar nature of work, etc, please refer to detailed tender notice available on website www.jkagro.com, but the complete tenderdocument can be downloaded from portal www.jktenders.gov.in. Further, Corrigendum / Addendum to this Tender, if any, will be published on www.jktenders.gov.in. Newspaper press advertisement shall not be issued for the same.

(Please contact Er. A.H Salaria, Divisional Manager, Mobile no. 9906136310 for any further information).

Sd/-
Divisional Manager
Member Secretary JK Agro,
Jammu

NOTICE INVITING E – TENDER (E – TENDERING MODE ONLY)

1. Online Open E-Tenders, in **Double Cover** tendering system, is invited for the below mentioned works from established and experienced and contractors in undertaking supply & installation of large modern cold storage equipment.
2. The complete Tender document can be viewed and downloaded only from the portal www.jktenders.gov.in during the tender sale period. The intending bidders should submit the tender documents sale price & tender processing fee details at the time of making online request.
3. Complete tender papers, duly accompanied with payment proof of tender document cost, tender processing fees and EMD shall be received online as per date and time mentioned below. Tender shall be opened through E-Tendering systems, in presence of bidders or their authorized representatives.

| ENIT No. | 58 of 2023-24 (Fresh) JK Agro |
|--|--|
| Name of Work | Insulation, Cold Room Doors & Docks, Refrigeration System & Ripening Equipment, Racking & Material Handling Equipment, Electrical Fittings & Cabling etc. and Fire Detection (Package 2) - Construction of Multipurpose Cold Storage and Ripening Chambers at Talab Tillo, Jammu (J & K) |
| Estimated Cost | Rs. 1792.54 Lacs |
| Completion Period | 09 Months |
| Earnest Money Deposit | Rs. 35.85 lacs (through RTGS/NEFT/CDR/FDR) |
| Cost of Tender Document(Non-refundable) | Rs. 11,800/- (inclusive all taxes & duties) through RTGS/ NEFT/Bank Receipt |
| Date of Publish of NIT (online) | 15.12.2023 |
| Date of Pre - Bid Meeting | 29.12.2023 |
| Document downloading start date/ Bid submission start date | 15.12.2023 |
| Bid submission End date | 04.01.2024 16:00 hrs |
| Date & Time of Opening of Tender | 05.01.2024 15:00 hrs |
| Financial eligibility Criteria | The average annual total turnover / revenue from operations for the last three financial years (i.e. 2020-21, 2021-22 and 2022-2023) should be of value not less than Rs 537.76 Lacs. The information shall be supported by CA certificate with UDIN no. & audited Balance Sheets and Profit & Loss statements of specified last three financial years |

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|--|---|
| <p>Experience with respect to similar nature of work</p> | <ol style="list-style-type: none"> 1. Experience of having successful completed similar works during last 07 years ending last day November 2023 should be either of the following:- <ol style="list-style-type: none"> a. Three similar completed works costing not less than the amount equal to 40% of the estimated cost or b. Two similar completed works costing not less than the amount equal to 50% of the estimated cost. or c. One similar completed work costing not less than the amount equal to 80% of the estimated cost. 2. Tenderer to submit required details & documents in support. <p>Note: Similar nature of work shall cover cold store projects which can include works for supply & installation of PUF Insulation & Cold Room Doors; Refrigeration & Ripening Equipment; Racking & Material handling Equipment; Electrical & Fire equipment.</p> |
| <p>Directions</p> | <ol style="list-style-type: none"> 1. This Notice Inviting E-Tender is also available at website: www.jktenders.gov.in 2. Any downloading from the website is at the sole risk & responsibility of the user after paying the tender sale price and processing fee. 3. EMD should be paid in favour of J & K Agro Industries Development Corporation Ltd through RTGS / NEFT in f/o J&K Agro Industries Development Corp. Ltd bearing Acc No. CD-0097010100000962, IFSC Code- JAKAOTNHALL or in shape of CDR/FDR Pledged in favour of Managing Director J&K Agro Industries Development Corporation Limited. The cost of tender document should be paid through RTGS/NEFT/Bank Receipt in f/o J&K Agro Industries Development Corp. Ltd bearing Acc No. CD-0097010100000962, IFSC Code- JAKAOTNHALL. The receipt of both the documents i.e Cost of tender document and EMD should be scanned and uploaded in the e-tendering website www.jktenders.gov.in along with E-Tender document. 4. To participate in the E-Tender, it is mandatory for the bidder to have user ID & password on the portal www.jktenders.gov.in 5. Corrigendum/Addendum to this Tender, if any, will be published on website www.jktenders.gov.in only. Newspaper press advertisement shall not be issued for the same. 6. Bidder shall quote their rates inclusive of GST as |

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| | <p>applicable.</p> <p>7. GST, Building & other construction workers cess or any other tax, levies, duties on materials and on complete works in respect of this contract shall be payable by the contractor and J K AGRO will not entertain any claim whatsoever in this respect. This should be included in the rates quoted by contractor.</p> <p>8. Insurances (i.e, Contractor All risk policy & Workmen Compensation Policy) for works, persons and property shall be taken by the contractor at his own cost for the entire duration of the project. Therefore, tenderer shall quote their rates inclusive of premium amounts of the Insurance Policies.</p> <p>9. If the overall rate, quoted by two or more qualified successful bidders, is the lowest and same, then the successful bidder will be selected on the basis of lottery in presence of concerned bidders. The Tender Evaluation Committee will conduct the lottery.</p> <p>10. Price Variation clause (PVC) is not applicable in this work contract.</p> <p>11. For any difficulty in downloading & submission of tender document at the website www.jktenders.gov.in. please contact their helpdesk nos.</p> <p>12. J K AGRO reserves the right to reject any or all the tenders without assigning any reason thereof.</p> <p>13. It is a works contract. There is no EMD exemption on account of MSME bidder.</p> |
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(Please contact Er. A.H Salaria, Divisional Manager, Mobile no. 9906136310 for any further information).

Sd/-
Divisional Manager
Member Secretary JK Agro,
Jammu

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Check list to be filled by Bidder before Submission of Bid

| S. No. | Documents to be submitted by the tenderer along with their bid | Check & confirm of having attached these documents alongwith Bid (Yes/No) |
|---------------|--|--|
| 1. | Cost of the Tender document paid (submit copy in case of RTGS/NEFT/Bank Receipt) | |
| 2. | Earnest Money Deposit (EMD) | |
| 3. | Pre-Qualification (PQ) Performa | |
| 4. | Complete audited Balance Sheets alongwith Profit & Loss accounts for the specified last three years and Chartered Accountant's certificate of average financial turnover of last three years with UDIN no. | |
| 5. | Registration Certificate(s) with statutory agencies, P A N, GST Regn, PF & ESI Regn. Contractor Regn. etc. | |
| 6. | Experience Certificate for executing works of similar nature as per tender eligibility requirements, issued by client(s) | |
| 7. | Affidavit for sole Proprietorship / Partnership deed of partnership firm/ Memorandum & Articles of Association with Certificate of Incorporation for company | |
| 8. | Power of Attorney in original | |
| 9. | Letter of submission of tender on the letter head of bidder. | |
| 10. | Submission of complete tender document, duly signed & stamped on all pages | |
| 11. | Bar Chart duly signed | |
| 12. | List of permanent technical persons available with bidder | |
| 13. | Bank Details (Account No., Bank Name, MICR No, RTGS No. copy of cancelled cheque) of bidder | |
| 14. | Affidavit Annexure B to be submitted along with Tender | |

PRE-QUALIFYING (PQ)-PROFORMA
MANDATORY PRE-QUALIFYING (PQ)-PROFORMA/COMPARATIVE STATEMENT
(To be filled by bidder and submitted along with tender document)

| | | |
|--|---|----------------|
| <u>NAME OF WORK:</u> Insulation, Cold Room Doors & Docks, Refrigeration System & Ripening Equipment, Racking & Material Handling Equipment, Electrical Fittings & Cabling etc. and Fire Detection (Package 2) - Construction of Multipurpose Cold Storage and Ripening Chambers at Talab Tillo, Jammu (J & K) | | |
| Tender No: 58 of 2023-24 (Fresh) JK Agro | | |
| NAME OF THE BIDDER | | |
| S. No. | Description | Details |
| 1. | Name, Address, Organization ID, Tel. /Fax No. & e-mail address of Bidder | |
| 2. | Attested copy of Firm Details (Proprietorship/Partnership/private limited / limited company) | |
| 3. | Attested Copy of Power of Attorney details to sign Tender Document. | |
| 4. | Earnest Money Deposit (EMD) of Rs 35.85 lacs through e-payment. (Fill RTGS/NEFT/ CDR/FDR details) | |
| 5. | Cost of Tender Documents of Rs. 11,800/-through e-payment. (Fill RTGS/NEFT/ Bank Draft details) | |
| 6. | PF Registration. | |
| 7. | GST Registration | |
| 8. | PAN No. of the bidder | |
| 9. | Letter of Submission of tender | |
| 10. | Contractor Registration details | |
| 11. | Audited Annual Financial Statements (Balance Sheet, P & L Account etc.) for last three years :- | |
| a) | FY 2020-21 | |
| b) | FY 2021-22 | |
| c) | FY 2022-23 | |
| 12. | The average annual turnover / revenue from operations for the last three financial years (i.e. 2020-21, 2021-22 and 2022-2023) should be of value not less than Rs 537.76 Lacs. The information shall be supported by a CA certificate covering specified last three financial years for the bidder. | |

| | | |
|---|---|--|
| 13. | <p>1. Experience of having successful completed similar works during last 07 years ending last day of November 2023 should be either of the following:-</p> <p>a. Three similar completed works costing not less than the amount equal to 40 % of the estimated cost Or</p> <p>b. Two similar completed works costing not less than the amount equal to 50 % of the estimated cost. Or</p> <p>c. One similar completed work costing not less than the amount equal to 80 % of the estimated cost.</p> <p>“Similar Works” shall mean “Cold store projects which can include works for supply & installation of PUF Insulation & Cold Room Doors; Refrigeration & Ripening Equipment; Racking & Material handling Equipment; Electrical & Fire equipment.</p> <p>The past experience of similar nature of work should be supported by certificate issued by the client’s organization</p> | |
| 14. | Bar Chart for project implementation schedule | |
| 15. | List of Permanent Technical Persons | |
| 16. | Bank Detail i.e. Cancelled Cheque, Name of Bank, Account Number, MICR No. RTGS No., Bank Telephone | |
| 17. | Affidavit (Annexure - B) to be submitted by the bidder as per format along with tender | |
| 18. | Any other details desired to be submitted by bidder | |
| <p>Note: 1. Bidders have to fill the complete details in Pre-Qualifying Performa.</p> <p>2. The documents pertaining to above details should be scanned and uploaded in the e-tendering website at the time of online tender submission.</p> <p>3. RTGS/ NEFT E-payment Challans with UTR no. <u>duly authenticated by Bank/ copy of Bank Draft</u> may also be scanned & uploaded along with tender submission</p> <p>4. Affidavit (Annexure - B) must be submitted by the bidder.</p> | | |

SECTION – I

(TENDER LETTER & AFFIDAVITS)

SECTION - I
TENDER LETTER

To

Name of Work: Insulation, Cold Room Doors & Docks, Refrigeration System & Ripening Equipment, Racking & Material Handling Equipment, Electrical Fittings & Cabling etc. and Fire Detection (Package 2) - Construction of Multipurpose Cold Storage and Ripening Chambers at Talab Tillo, Jammu (J & K)

Dear Sir,

1.0 Enclosed please find herewith a complete set of tender document for work mentioned above.

PART I- TECHNO COMMERCIAL BID

| | | |
|--------------|---|--------------------------------------|
| Section-I | - | Tender Letter |
| Section-II | - | Instructions to Tenderers |
| Section-III | - | Conditions of Contract |
| Section-IV | - | Technical Specifications |
| Section-V | - | Appendix showing important schedules |
| Section-VI | - | Bank Details Performa |
| Section-VII | - | List of Mandatory Tests |
| Section-VIII | - | Testing Performa |
| Section- IX | - | Tender Drawings |
| Section-X | - | Bill of quantity |

Your offer, in E-Tender mode, is invited in **Double Cover** system of tendering, as per time, date and other instructions indicated below. You are requested to peruse instructions contained in the above documents and submit your tender on the due date and time as mentioned in the tender notice duly signed on each page along with requisite credentials, through e-tendering mode on the website www.jktenders.gov.in. No other mode is acceptable. In case of E-Tender being submitted in Double cover tendering system, the Volume-I is technical bid and Volume-II is financial bid. The EMD and pre-qualification documents in requisite form shall be submitted along with techno commercial bid, in case of Double cover system of tendering.

2.0 The tender should accompany the following documents scanned and uploaded using the digital signature for signing the documents:

- i) Attested copies of Affidavit for sole proprietorship / partnership deed / memorandum and Articles of Association along with details pertaining to place of registration, principal place of business of the firm, etc,
- ii) Attested copy of power of attorney on non-judicial stamp paper of appropriate value of the signatory of bid on behalf of the tenderer.
- iii) Earnest money of Rs. 35,85,000/- (Rupees Thirty Five lacs Eighty Five Thousand Only) in proper form as mentioned in the instructions to tenderers. The EMD to be paid through e-payment/CDR/FDR and receipt of the same, duly authenticated, should be scanned and uploaded in the e-tendering website: www.jktenders.gov.in.
- iv) Cost of Tender Documents of Rs 11800/- (Rupees Eleven Thousand Eight Hundred only). The tender document cost to be paid through e-payment and receipt of the same, duly authenticated, should be scanned and uploaded in the e-tendering website: www.jktenders.gov.in.
- v) Attested copy of PF Registration Certificate (as applicable), GST Registration & PAN Card.
- vi) ***A BAR CHART indicating various milestones and their date of completion vis-à-vis deployment of resources. Here it may be noted that the completion period for the work is 06 (Six) months from the 15th day after date of issue of Letter of Acceptance(LOA) including mobilization period.***
- vii) Financial Eligibility Criteria
Attested copy of CA Certificate for average annual turnover/ revenue from operations for the last three financial years (i.e. 2020-21, 2021-22 and 2022-2023) as proof of average annual turnover should be of value not less than Rs 537.76 Lacs with UDIN no.
- viii) Technical Eligibility Criteria
 - a. Attested copies of work order/ PO, completion certificate as proof of having;
 1. Experience of having successfully completed similar works during last 07 years ending last day of November 2023 should be either of the following:-
 - i. Three similar completed works costing not less than the amount equal to 40 % of the estimated cost
or
 - ii. Two similar completed works costing not less than the amount equal to 50 % of the estimated cost.
or
 - iii. One similar completed work costing not less than the amount equal to 80 % of the estimated cost.
 - b. Copies of the work completion certificates self-signed from the clients for having completed works of similar nature should contain following information:-
 - (i) Name of work
 - (ii) Date of start
 - (iii) Date of completion (Stipulated / Original)
 - (iv) Contract value (Actual / Final)
 - (v) Actual date of completion
 - (vi) Cost on completion
 - (vii) Other information (such as scope of work/ value of major items executed).
 - c.
 - (i) **Value of a completed work done by a member in an earlier JV firm** shall be reckoned only to the extent of the concerned member's share in that JV firm for the purpose of satisfying his/her compliance to the above-mentioned technical eligibility criteria in the tender under consideration.

- c. (ii) **Contractual payment received by a member in an earlier JV firm** shall be reckoned only to the extent of the concerned member's share in that JV firm for the purpose of satisfying compliance of the above-mentioned financial eligibility criteria in tender under consideration.

Complete documentary evidence should be submitted by bidder.

- a) List of plant, equipment and machinery owned by the tenderer.
- b) List of permanent technical personnel employed by the tenderer.
- c) Conditions of contract along with addendum / corrigendum and Errata duly read and signed on all pages.
- d) Special conditions of contract duly read and signed on all pages.
- e) Instructions to tenderers read and signed on all pages.
- f) Technical specification read and signed on all pages
- g) Drawings issued along with tender document, read and signed on all pages.
- h) Letter of submission of tender.
- i) Affidavit Annexure - B.
- j) The tender form shall be purchased and submitted only in the name of the bidder (Clause 65.4 of General Condition of Contract (GCC)).

In case of E-Tender, the digital key i.e. registration with e-tendering website should be in the name of bidder and tender form shall be purchased and submitted only in the name of the bidder.

k) Earnest Money Deposit (EMD) shall be submitted only in the name of the bidder and not in the name of any other person/ entity.

Note: (a) Tenderer not fulfilling above requirements, shall be **summarily rejected** (requirement of clause xxiii as above).

3.0 The Financial Bid shall contain the following:-

Bill of quantities with rates & amounts duly filled in figures. Total amount of bid offers should also be indicated in figures duly signed.

4.0 General

4.1 All correspondence in connection with Tenders shall be addressed to "Managing Director, JK Agro Industries Development Corporation Limited"

4.2 The ENIT No. **58 of 2023-24 (Fresh) JK Agro** given above and subject must appear on all correspondence and documents.

4.3 The tender shall be on sale (on line) from **15.12.2023 to 04.01.2024 at website www.jktenders.gov.in**

4.4 Complete tender documents must be submitted on or before 04.01.2024 through E-Tendering mode only at website www.jktenders.gov.in.

4.5 Tender will be opened at 05.01.2024 in presence of tenderers or their authorised representatives who are desirous of being present at the opening through E-Tender system.

4.6 In case tender opening date is declared a public holiday then tenders will be opened at the same time on the next working day.

4.7 The sequence of Tender opening shall be as:-

- (i) Earnest Money Deposit (EMD).
- (ii) Technical Bid.
- (iii) Financial Bid.

5. JK Agro has selected an agency as Project Management Consultants (PMC) with respect to

the project. All action taken by the Site In Charge/ Consultants of PMC shall be taken by J K AGRO for and on behalf of J&K Agro Industries Corporation Ltd.

6. Period of completion of the entire work is 06 Months from the 15th day after date of issue of Letter of Acceptance (LOA).
7. Tenderers are requested to peruse the “Instructions to Tenderers” and all other tender documents and submit their tender through E-tendering system only.
8. No Condition/deviation which is either additional or as modification of the tender condition shall be included in the bids. Conditional tenders shall be summarily rejected
9. J&K Agro Industries Corporation Ltd., reserves the right to accept or reject any or all the tenders in part or full irrespective of their being lowest, without assigning any reason.
10. Time is the essence of the contract and the work is to be completed as per the time of completion including stage completion as stipulated in the Special Conditions of Contract.
11. Tenderers are requested to peruse the minimum qualifying criteria to be fulfilled by tenderers for their eligibility to participate in the tender. The details of minimum qualifying criteria are indicated in “Annexure – A”.
12. IT IS BROUGHT TO THE NOTICE OF TENDERERS THAT THEIR TENDER WILL NOT BE CONSIDERED, IF THEY FAIL TO FULFILL THE MINIMUM ELIGIBILITY AS INDICATED IN ANNEXURE “A”

Yours faithfully,

Sd/-

Divisional Manager
Member Secretary
JK Agro

Annexure-A

Name of Work: - Insulation, Cold Room Doors & Docks, Refrigeration System & Ripening Equipment, Racking and Material Handling Equipment, Electrical Fittings & Cabling etc. and Fire Detection (Package 2) - Construction of Multipurpose Cold Storage and Ripening Chambers at Talab Tillo, Jammu (J & K)

MINIMUM CRITERIA FOR ELIGIBILITY OF THE TENDERERS

01. EMD of Rs. 35,85,000/- (Rupees Thirty Five lacs Eighty Five Thousand only) in favour of “J&K Agro Industries Corporation Ltd.” The EMD to be paid through e- payment/CDR/FDR and receipt of the same should be scanned and uploaded alongwith tender document in the e-tendering website: jktenders.gov.in
02. Cost of Tender Documents of Rs 11800/- (Rupees Eleven Thousand eight Hundred only). The tender document cost to be paid through e-payment and receipt of the same, duly authenticated, should be scanned and uploaded in the e-tendering website: jktenders.gov.in
03. The average annual turnover / revenue from operations for the last three financial years (i.e. 2020-21, 2021-22 and 2022-2023) should be of value not less than Rs 537.76 Lacs. The information shall be supported by a CA certificate covering specified last three financial years for the bidder with UDIN no.
04. Experience of having successful completed similar works during last 07 years ending last day of November 2023 should be either of the following:-
 - a. Three similar completed works costing not less than the amount equal to 40 % of the estimated cost
 - or
 - b. Two similar completed works costing not less than the amount equal to 50 % of the estimated cost.
 - or
 - c. One similar completed work costing not less than the amount equal to 80 % of the estimated cost.
05. **Affidavit (Annexure-B)** duly filled up and signed on stamp paper.

NOTE: i) Tenderer not fulfilling the above requirements, shall be **summarily rejected**.

Annexure-B

AFFIDAVIT

(FORMAT FOR AFFIDAVIT TO BE SUBMITTED BY TENDERER ALONGWITH THE TENDER DOCUMENTS)

(To be executed in presence of Public Notary on non- judicial stamp paper of the value of Rs. 100/- The stamp paper has to be in the name of the tenderer.)

I _____ (Name and designation) _____ appointed as the attorney/ authorized signatory of the tenderer (including its constituents), M/s. _____ (hereinafter called the tenderer) for the purpose of the Tender documents for the work of Insulation, Cold Room Doors & Docks, Refrigeration System & Ripening Equipment, Racking & Material Handling Equipment, Electrical Fittings & Cabling etc and Fire Detection (Package 2) - Construction of Multipurpose Cold Storage and Ripening Chambers at Talab Tillo, Jammu (J & K) as per the Tender No. of J K AGRO, do hereby solemnly affirm and State on behalf of the tenderer including its constituents as under:

1. I/ We the tenderer (s), am/ are signing this document after carefully reading the contents.
2. I/ We the tenderer (s) also accept all the conditions of the tender document and have signed all the pages in confirmation thereof.
3. I/ We hereby declare that I/We have downloaded the tender documents from tender portal www.jktenders.gov.in and printed the same. I/We have verified the content of the printed document from the website and there is no addition, no deletion or no alteration to the content of the tender document. In case of any discrepancy noticed at any stage (i.e. evaluation of tenders & execution of work) The decision of J K AGRO with regard to such discrepancies shall be final and binding upon me/us.
4. I/We declare and certify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
5. I/We also understand that my/our offer will be evaluated based on the documents/credentials submitted alongwith the offer and same shall be binding upon me/us. I/We declare that the information and documents submitted along with the tender by me/us are correct and I/We are fully responsible for the correctness of the information and documents, submitted by us.
6. I/We understand that if the certificates regarding eligibility criteria, submitted by us are found to be forged/ false or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender EMD besides suspending of business for minimum one year. Further, I/We _____ [insert name of the tenderer] _____ and all my/our constituents understand that my/our offer shall be summarily rejected.
7. I/ We also understand that if the certificates submitted by us are found to be false/forged or incorrect at any time, after the award of the contract, it will lead to termination of the contract, alongwith forfeiture of EMD/ SD and Performance Guarantee besides any other action provided in the contract.
8. I/We certify that I/We are not black listed or debarred by Ministry / Department / PSU (Public Sector Undertaking) of the Govt. of India/ JK UT Govt. from participation in tenders/contract on the date of opening of bids either in individual capacity or as a member of JV Firm.

DEPONENT SEAL AND SIGNATURE OF THE TENDERER

VERIFICATION

I / We above named tenderer do hereby solemnly affirm and verify that the contents of my/ our aboveaffidavit are true and correct. Nothing has been concealed and no part of it is false.

DEPONENT

SEAL AND SIGNATURE OF THE TENDERER

Place:-

Dated:-

**Details as appropriate are to be filled in suitably by tenderer. Attestation before
Magistrate/ Notary Public.**

Annexure - C

FORM OF DECLARATION TO BE GIVEN BY THE TENDERER BEFORE TENDER NEGOTIATION

I/Wedo declare that in the event of failure of the contemplated negotiations relating to Tender No. opened on..... my original tender shall remain open for acceptance on its original terms and conditions.

I/We also declare that I/We am aware that during this negotiation, I cannot increase the originally quoted rates against any of the individual items and that in the event of my doing so, the same would not be considered at all i.e. reduction in rates during negotiation alone would be considered and for some items if I/We increase the rates, the same would not be considered and in lieu my originally quoted rates alone would be considered and my offer would be evaluated accordingly.

**Signature of Tenderer's
with stamp**

SECTION – II

(INSTRUCTIONS TO TENDERERS)

SECTION II

INSTRUCTIONS TO TENDERERS

Construction of Multipurpose Cold Storage & Ripening Chambers at J K AGRO's Talab Tillo, Jammu (J&K) - Insulation, Cold Room Doors & Docks, Refrigeration System & Ripening Equipment, Racking & Material Handling Equipment, Electrical Fittings & Cabling etc. and Fire Detection (Package 2)

1.0 Tender documents consisting of Instruction to Tenderers, special condition of Condition of Contract, Technical specifications, schedule of quantities of work, etc, can be downloaded from the website www.jktenders.gov.in from on payment of Rs 11800/- (Rupees Eleven Thousand Eight Hundred only) through e-payment.

2.0 Tenderer digital signature on the E- Tender form will be considered as their confirmation that they have read and accepted all the conditions laid down in the tender documents, unless specific deviation is quoted in the techno- commercial offer form.

2.1 E- Tender form is not transferrable and the same is to be submitted with digital signature/ signed & scanned copy by the pre- authorized personnel of the bidder. Tender is to be submitted through e-tender-mode only at website www.jktenders.gov.in alongwith scanned copies of credential papers.

2.2 For what so ever reasons, if any part of J K AGRO tender document is not uploaded/submitted by the bidder, other than financial and technical offers and requisite Pre-Qualifying credentials, in that case the missing part of the tender document shall be treated as read and acceptable to bidder. **Missing part of J K AGRO tender document shall not be called for re-submission, however, the same shall form part of contract agreement and shall be binding on tenderer.**

3.0 **Earnest Money:** Tender must be accompanied with Earnest Money amounting to Rs.35.85 lacs (Rupees Thirty Five lacs Eighty Five Thousand Only). The EMD is to be paid through e-payment/CDR/FDR and receipt of the same should be scanned and uploaded in the e-tendering website: www.jktenders.gov.in

The tender without the prescribed earnest money, shall be summarily rejected.

Note: - (i) E-Payment of tender document cost, Earnest Money Deposit (EMD) though RTGS/ NEFT/ Bank Receipt in f/o J&K Agro Industries Development Corp. Ltd bearing **Acc No CD-0097010100000962, IFSC Code- JAKA0TNHALL.**

(ii) The tender processing fee should be deposited by bidder at the time of tender purchase through e-payment.

3.1 Any request for recovery from outstanding bills for earnest money against present tender will not under any circumstances be entertained. Tenders submitted with earnest money in forms of cheque, Government Securities or in any form other than those specified above shall not be considered.

3.2 No interest shall be allowed on the Earnest Money.

3.3 Earnest money of the unqualified bidders shall be released after finalization of Technical bid in case of two packet system of tendering. EMD of technically qualified but unsuccessful bidder will be refunded after the award of Tender. EMD of unsuccessful bidders shall be released after finalization of tender in case of Double Cover System of tendering The bidder is advised to provide name of bank,

account number, branch code and RTGS code for account maintained by them/him for any financial transaction if found necessary.

3.4 For the successful tenderer, earnest money will be retained as part of the security deposit in terms of **the Conditions of Contract**. The earnest money of other tenderers shall, save as herein before provided, be returned to them, but J K Agro shall not be responsible for any loss or depreciation that may happen thereto while in their possession, nor be liable to pay any interest thereon.

4.0 The successful tenderer/s shall be required to execute an agreement with J K AGRO for carrying out the work as per the agreed conditions. The cost of stamp paper for the agreement will be borne by contractor.

5.0 The successful tenderer/s shall require to sign the integrity pact with J K AGRO as per enclosed Performa (**Section-III**).

5.1 The contract operations and proceeding in connection with the works at all times be conducted during the continuance of contract in accordance with the laws, ordinance, rules and regulation for the time being in force and the contractors shall further observe and comply with the bylaws & regulations of the Government of India, UT Government, local Municipalities and other authorities having jurisdiction over area involved in connection with the works of site & over operations such as those as carried out by the contractor/s and shall give all notices required by such by-laws & regulations. The hospital and medical regulations in force for the time being shall also be complied with by the contractor/ contractors and his workmen.

5.2 The contractor shall be responsible for the observance of the rules and regulations under the Mines Act and Mineral Rules and Indian Metallurgical rules and regulations of State Government concerned as amended from time to time.

5.3 The contractor shall at all times keep the J K AGRO Administration indemnified against all penalties that may be imposed by the Government of India or UT Government for infringement of any other clauses of the mines act and rules made there under in respect of the quarries from which the quarry material for these works is procured.

5.4 The tenderer's offer shall be valid for **180 days for Double Cover tendering system** from the date of **opening** of the tender. The tenderer shall extend the offer as desired by J K AGRO in case the tender is not finalized within validity period.

5.5 The Tenderer/s shall not increase his/their rate in case J K AGRO negotiates for reduction of rates Such negotiations shall not amount to cancellation or withdrawal of original offer and rates originally quoted will be binding on the tenderer/s.

5.6 The tenderer/s shall submit an analysis of rates, if called upon to do so.

5.7 Contractor is required to get himself registered as per Building & Other Construction Workers Cess Act 1996, PF Registration , Goods and Service Tax, etc. as per Govt. of India law.

6.0 Conditions of Contract and Specifications

6.1 Works will be carried out according to the Conditions of contract, & PWD/ SSR 2022/CPWD Specifications with upto date correction slips along with special conditions of contract, technical specifications issued with this tender document. For roads and pavements, MORTH specification shall be followed. If, however, any particular item or issue is not covered by these specifications and special specifications, then the work shall be carried out in accordance to relevant BIS (IS) Codes and Code of practice.

6.2 The following publications can be obtained from the office of the MD, JK Agro:

- i) Conditions of Contract and regulation's and instruction's to Tenderers.

6.3 The following publications can be obtained from Secretary, Indian Road Congress, Jam Nagar House, New Delhi, book shops

- i) MORTH Standard Specification (latest revised edition) for Road and bridge work; along with upto date correction slips for roads and pavements.
- ii) PWD/ SSR 2022 Specification with up to date correction slips can be obtained from PWD/ SSR 2022 office/CPWD.

6.4 Correction slips issued upto the date of N.I.T. will be operative to the publications mentioned below:

- i) PWD/ SSR 2022 Specification.
- ii) Conditions of Contract, Regulations and Instructions to Tenderers.
- iii) Specifications for Road and Bridge work latest revision (MORTH) specification.

6.5 The bid document shall be taken as complimentary and mutually explanatory of one another but in case of ambiguity or discrepancy, shall take precedence in the order, given below:-

- i) Bill of Quantities (BOQ)
- ii) Technical specifications
- iii) Drawings
- iv) Special Conditions of Contract
- v) Conditions of Contract
- vi) Instructions to tenderers.

6.6 The tenderer should note that the publication mentioned in Para 6.0 have been prepared for use by PWD/ SSR 2022 MORTH. For the use of these publications by J K AGRO the designation mentioned therein will deem to have been modified for use by J K AGRO as follows.

7.0 Time is the essence of the contract. In order to complete the work within the scheduled time, the tenderer is required to submit a PERT/BAR CHART for major mile stones for various activities indicating the time required for the same.

7.1 In case of E-tendering rates should be quoted in figures only. Tenderers may note that non-compliance of above may lead to rejection of their tender.

7.2 Where percentage rate is asked for, tenderer should write percentage in figures only. Tenderers may note that non-compliance of above may lead to rejection of their tender.

7.3 Tenders completed as per instructions will be submitted through e-tendering mode only in the website www.jktenders.gov.in as per the prescribed date and time mentioned in the tender notice and tender will be opened on the prescribed date and time in the presence of tenderers or their authorized representative who may wish to be present. Only one representative of each tenderer, who has submitted the tender, will be allowed.

7.4 The tenderer shall visit the site and acquaint himself fully of the site conditions before quoting the rates. No claim arising out of ignorance of site conditions shall be entertained. The contractor will have to follow the extant procedure enforce for movement of labour, material, vehicles, etc, both for inward and outward. Nothing extra will be paid for it.

8.0 The acceptance of a tender will rest with the competent authority who does not bind himself to accept the lowest tender, and reserves to himself, the authority to reject any or all of the tenders received, without assigning any reason. All tenders in which any of the prescribed conditions are not fulfilled, or are incomplete in any respect, are liable to be rejected. **J K AGRO also reserve the right of accepting the whole or any part of tender and tenderer shall be bound to perform the same at the rates quoted.** J K AGRO also reserve the right for not to invite tender for any work, or to invite open or limited tender.

8.1 Tenders containing any condition leading to unknown/indefinite liabilities shall be summarily rejected.

8.2 If at all any rebate / rebates is/are offered the tenderer shall first quote his rates strictly on the terms and conditions stipulated in the tender document and then show separately any rebates(s) offered specifying the reasons / conditions for such rebate(s), failure to follow this procedure will render the tender liable to rejection.

8.3 Canvassing in connection with tender are strictly prohibited and the tenders submitted by the tenderer who resort to canvassing will be liable to rejection.

9.0 In the financial bid the prices/ rates must be filled after downloading the financial bid document in the prescribed format issued through online e-tendering website. The financial bid should be saved and duly filled up and uploaded to the e-tendering site using **digital signatures** for signing the documents/(signed and uploaded).

10.0 On acceptance of the tender, the name of the accredited representative(s) of the contractor who would be responsible for taking instructions from the Site in charge / PMC shall be communicated to the MD JK Agro.

11.0 **Goods and Service Tax matters:** Tenderer / bidder shall quote their rates inclusive of Goods and Service Tax, as applicable and Goods and Service Tax will not be paid / reimbursed by J K AGRO.

11.1 Goods and Service Tax, Building & other construction workers cess or any other tax, levies, duties on materials and on complete works in respect of this contract shall be payable by the contractor and J K AGRO will not entertain any claim what so ever in this respect. This should be included in the rates quoted by contractor.

11.2 (a) The Contractor / Tenderer / Vendor undertakes to take registration with GST authority for discharge of its obligation to pay GST in respect of each taxable supply and will intimate the registration details to J K AGRO. In respect of each supply of Goods and Services contractor/tenderer will specify whether CGST/SGST will be attracted to IGST will be attracted along with rate thereof.

(b) The contractor/Tenderer/Vendor indemnifies J K AGRO, its directors, officers, employees and associates for any loss it may suffer as a result of the Contractor/Tenderer/Vendor not being registered with GST authorities or if registered, for any loss due to non-payment of tax. On request by J K AGRO, the Contractor/Tenderer/Vendor shall produce evidence that it is so registered and paid all the dues in respect of GST. In case the contractor/tenderer/vendor is unregistered then submit appropriate documents establishing that agency is exempted as per the provisions of GST. Also, in case the agency is registered under Composition Levy Scheme, the same will be duly intimated to J K AGRO with relevant documents.

(c) Contractor/Tenderer/Vendor shall ensure timely issue of documents such as invoices, declaration forms, reporting, uploading etc. undertaking appropriate statutory compliances as may be applicable, timely payment of GST, and filing of statutory returns within prescribed time lines, to ensure availment and utilization of eligible input tax credits by the J K AGRO.

(d) In case of any failure on the part of Contractor/Tenderer/Vendor, any interest/penalty/any other amounts, as may be applicable shall be indemnified by Contractor/Tenderer/Vendor to the J K AGRO.

(e) If as result of Change in Law, Contractor/Tenderer/Vendor obtains a benefit by way of reduction in costs due to lower tax rates and availability of ITC, Contractor/Tenderer/Vendor may so notify the J K AGRO and propose amendment to this Agreement so as to pass the incremental benefit to J K AGRO which puts it in the same financial position as it would have occupied had there been no such Change in Law resulting in such decreased cost to the Contractor/Tenderer/Vendor.

(f) Any denial of input credit due to any omission or failure on the part of the Contractor/Tenderer/Vendor, the Contractor/Tenderer/Vendor undertakes to indemnify the J K AGRO for any delay or denial of input tax credit along with the consequential liability, if any, as may accrue to the J K AGRO.

12.0 Under Income Tax Act, 1961, a deduction for income tax along with surcharge as applicable will be made from sums paid on account and final payments for carrying out the work under this contract.

12.1 The tenderer shall be required to pay cess @ 1% of cost of construction work in accordance with each bill payable on account of such construction to the concerned UT Govt. (Labour Deptt.), Cost of material shall be outside the purview of cess, when supplied under a separate schedule items". J K AGRO shall not entertain any claim whatsoever in this respect.

13.0 Tender for works shall remain open for acceptance for a period of **90 days for Double Cover system of tendering** from the date of **opening** of tenders. Should the tenderer fail to keep the tender open for acceptance as stated above or if the tenderer withdraws his tender before the expiry of the said validity period or makes any modifications in the terms and conditions of the tender, which are not acceptable, then **J K Agro**, without prejudice to any other right or remedy, shall be at liberty to forfeit his earnest money.

14.0 The Tenderer shall scan and upload the work experience certificate of similar nature works completed by him in the last seven financial years. The certificate should indicate name of work, client name, date of start and actual date of completion of completed work, completed value of work, satisfactory completion certificate.

15.0 The tenderer shall scan and upload the CA Certificate, audited balance sheets with Profit & Loss account statement of specified last three years in respect of average financial turnover, Contractor registration Certificate, Power of Attorney, Affidavit of Proprietorship/Memorandum & Article of Association, PF Registration Certificate, PAN Card, Bar Chart, similar nature works completion certificates & their work orders, Goods and Service Tax , list of personnel, list of tools, plants and machinery and undertaking downloaded tender documents.

15.1 No additional documents will be entertained after tender opening, except clarification documents required if any, regarding already submitted documents with tender. Any documents submitted suo-moto by the bidder through e-mail/ post/ hand delivery, etc, shall neither be entertained nor considered for evaluation.

15.2 **For deciding eligibility of tender and award of work**, it is mandatory for tenderer / bidder to submit Affidavit (Annexure - B), EMD, Tender document Fees, Tender processing fees, financial turnover, (audited Balance Sheets with Profit & Loss Account of specified last three years as per NIT), and similar nature of work experience certificates of requisite magnitude as per NIT.

15.3 All other documents like PAN Card, PF Registration, Goods and Service Tax Registration, Bar Chart, List of plant, machinery, technical persons, etc, are also required to be submitted along with tender.

16.0 If the tender is made by **proprietary firm**, it shall be signed by the proprietor with his full name and full name of his firm with its current address.

16.(a). If the application is made by a firm in **partnership**, it shall be signed by all partners of the firm above their full names and current addresses or by a partner holding the power of attorney for the firm by signing the applications in which case a **certified copy** of the power of attorney shall accompany the application. **A certified copy of the partnership deed**, current address of the firm and the full names,

and current addresses of all the partners of the firm shall also accompany the application.

16.(b). If the application is made by a **limited company or a limited corporation**, it shall be signed by a duly authorized person holding the power of attorney for signing the application in which case a **certified copy of the power of attorney** shall accompany the application. Such limited company or corporation will be required to furnish satisfactory evidence of its existence, before the contract is awarded.

16 (c) If the tenderer/tenderers deliberately gives/give wrong information or conceals some facts in his/their tender or creates/create circumstances for the acceptance of his/their tender fraudulently, the J K AGRO reserve the right to reject such tender at any stage, along with forfeiture of earnest money deposit. Tenderers are liable to face the penalty of banning of business dealings with him by J K AGRO.

17.0 Performance Security Deposit

17.1 The contractor shall required to deposit 5% of contract value as security deposit in shape of CDR/FDR Pledged in favour of **Managing Director J&K Agro Industries Development Corporation Limited** within 15 days after issuance of LoI. On deposit of performance security deposit, the full payment of EMD deposited shall be released in favor of the contractor.

17.2 If in case contractor failed to start/complete the work, within the stipulated time period, his Performance Security Deposit shall be forfeited after termination of the contract. Besides, defaulting contractor shall be debarred from taking works in the Department at least for one year.

17.3 The performance security deposit unless forfeited in whole or in part according to the terms and conditions will be refunded on receipt of a certificate from the Site In charge to the effect that the work is completed satisfactorily and maintained in all respects for the period specified in the contract.

18.0 The successful tenderer shall be required to execute an agreement with J K AGRO in prescribed Performa within a maximum period of 30 days after date of issue of LOA.

19.0 MEANING OF TERMS

19.01 In these Regulations for Tenders and Contracts various terms shall have the meaning as defined in the Conditions of Contract. Words importing the singular number shall also include the plurals and vice-a-versa where the context requires.

These Regulations for Tenders and Contracts shall be read in conjunction with the Contract which are referred to herein and shall be subject to modification additions or supersession by special conditions of contract and/or Technical specifications if any, to the Tender Forms.

19.02 A contractor should furnish particulars regarding :-

- a) His knowledge from actual personal investigation of the actual site condition and resources of the zones in which he offers to work.
- b) His ability to supervise the work personally or by competent and duly authorized agents.

20.0 Should a Tenderer find discrepancies, or omissions in the drawings or any of the Tender forms or should he be in doubt as to their meaning, he should at once notify (within 10 days of start of tender sale) to the authority inviting tenders, who may send a written intimation to all Tenderers. It should be understood that every endeavor has been made to avoid any error which can materially affect the basis of the tender and the successful tenderer shall take upon himself and provide for the risk of any error which may subsequently be discovered and shall make no subsequent claim on account thereof.

21.0 The tenderer shall be required to keep the offer open till such date as might be specified in the tender. It shall be understood that the tender documents have been sold/issued to the Tenderer and the Tenderer is permitted to tender in consideration of the stipulation on his part, that after **submitting his tender**, he will not resile from his offer or modify the terms and conditions thereof in a manner not

acceptable to the J K AGRO. Should the Tenderer fail to observe or comply with the said stipulations, the earnest money amount shall be liable to be forfeited by JK Agro.

22.0 The J K AGRO will not be bound by any power of attorney granted by the tenderer or by change in the composition of the firm and subsequent to the execution of the contract. It may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which, will be chargeable to the Contractor.

23.0 The tenderer, whose tender is accepted, shall be required to appear at the office of J K AGRO in person, or through a duly authorized representative, to execute the contract documents/agreement within 30 days after date of issue of LOA. Failure to do so shall constitute a breach of agreement effected by the acceptance of the tender, in which case, the earnest money & other dues shall be forfeited by the JK Agro.

24.0 If a tenderer expires after the submission of his tender or after the acceptance of his tender the J K AGRO shall deem such tender as cancelled. If a partner of a firm expires after the submission of their tender or after the acceptance of their tender, the J K AGRO shall deem such tender as cancelled, unless the firm retains its character. However, in such cases, the amount of earnest money will be refunded to the legal heir on production of successor certificate.

25.0 In the event of any Tenderer whose tender is accepted shall refuse to execute the contract documents, the J K AGRO may determine that such Tenderer has abandoned the contract and there upon his tender and the acceptance thereof shall be null and void and the JK AGRO shall be entitled to forfeit the full earnest money as liquidated damages for such default.

26.0 In E-Tendering, Bids in physical form in tender box/by post shall not be accepted.

27.0 Submission of tender and credential documents through E-Tender website www.jktenders.gov.in is sole risk & responsibility of the bidder. Any claim on this account will not be entertained. Hence, bidder should ensure that tender along with all requisite credential papers should be submitted / uploaded on the e-tender website on or before tender submission date and time.

28.0 If the overall rate, quoted by two or more qualified successful bidders, is the lowest and same, then the successful bidder will be selected on the basis of lottery in presence of concerned bidders. The Tender Evaluation Committee will conduct the lottery.

29.0 No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or administrative duties in any Department of the Government of India is allowed to work as a contractor for a period of two years immediately after his retirement from Government service without the prior permission of the Government of India. Such Contract is liable to be cancelled if either the Contractor or any of his employees is found at any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the tender or engagement in the contractor's service.

30.0 Should a Tenderer or Contractor have a relative employed in Managerial capacity in J K AGRO or in the case of partnership firm or company incorporated under the Indian Company Law, should a partner or relative of the partner or a shareholder be employed in responsible capacity in the J K AGRO, the authority inviting tender shall be informed of the fact at the time of submission of tenders, failing which the tender may be rejected. If such a fact is suppressed at the time of tendering and

comes to light at any time after the acceptance of tender, the contract may be rescinded in accordance with the provisions in Conditions of Contract.

31.0 Performa to be filled and signed by the Tenderer and scanned & uploaded along with the tender is given below. Portions not applicable may be deleted

32.0 The undersigned: -

- i)
 - a) is a retired officer holding prior to retirement a post in J K AGRO/Govt. of India/ UT Govt
 - b) is a partnership firm having as one of its partners person as aforesaid.
 - c) is an incorporated company having, retired officer/Engineer/Manager as stated above.
 - d) has no such retired Engineer or retired manager, associated with it as stated above.
- ii) If falling under any of the above categories (a) to (c), particulars of the officer may be furnished here under: -
 - a) Post held before retirement _____
 - b) Date of retirement _____
 - c) If not retired at least two years prior to date of submission of tender, state whether permission for taking such employment has been obtained from the officer duly authorized in this behalf

- iii) If the Tenderer or in case of a firm or Company, any of the shareholders has a relative or relatives employed in managerial capacity in the J K AGRO, particulars of such relative in the J K AGRO may be furnished here under- _____
 - 1. NAME
 - 2. DESIGNATION
 - 3. RELATIONSHIP

PLACE :

DATED :

SIGNATURE OF TENDERER

33.0 Power of Attorney

33.1 Notwithstanding anything contained in the clause above, the tenderer shall execute the Power of Attorney in prescribed format as mentioned in Appendix-III (a) and Appendix III (b) and shall conform to the following :-

33.2 A company, while executing Power of Attorney must make conformity with the board resolution and the charter documents giving the power to issue the said Power of Attorney including further sub delegation of the same by the said POA holder only.

33.3 “Unless notified in writing to the Tendering Authority, the Authority shall recognize only that POA holder for the purposes of tender submission and matters related thereto whose notice and necessary POA document was submitted to the Authority at the time of tender submission”.

33.4 While for a partnership firm either all the partners of the partnership firm shall execute and confirm the Power of Attorney if executed or there shall exist a Power of Attorney in favour of the Partners executing the Power of Attorney for the delegation of power on behalf of the Tenderer.

33.5 The Power of Attorney being executed by the Tenderer herein shall be executed in favour of only its Partner or Director or Salaried employee. And in case the POA is being executed by the Tenderer in favour of its salaried employee, the said employee should have worked for at least more than 1 year continuously with the Tenderer and the Tenderer should furnish the following.

- Name
- Designation
- Mobile/Contact no.
- Employment letter /agreement issued by the firm
- Identity card with number, issued by the firm
- Information about the wages paid i.e. (Salary slips)
- Form-16
- PAN card
- PF Number
- Power of Attorney as per Annexure III(a), III(b)

33.6 J K AGRO will not be bound by the Power of Attorney furnished by the Tenderer and acceptance of the same shall be at the sole discretion of the J K AGRO.

33.7 There can validly exist only a single Power of Attorney at any given time. The Power of Attorney executed and accepted by J K AGRO shall stand revoked on issuance of any new Power of Attorney issued within the rules herein, with regard to this particular Project.

33.8 During the subsistence of contract if the Power of Attorney holder is found to be creating mischief or involved in any illegal or unlawful activity, J K AGRO will at its sole discretion reject the Power of Attorney of such person submitted by the Tenderer and the Tenderer would be required to issue a fresh Power of Attorney within the rules herein in favour of authorized person, stated above, within a period of 10 days of being so notified.

LETTER OF SUBMISSION OF TENDER

From :

To :

.....

Name of Work: Construction of Multipurpose Cold Storage & Ripening Chambers at J K AGRO's Talab Tillo, Jammu (J&K) - Insulation, Cold Room Doors & Docks, Refrigeration System & Ripening Equipment, Racking & Material Handling Equipment, Electrical Fittings & Cabling etc. and Fire Detection (Package 2)

Dear Sir,

Having examined the Tender Documents consisting of conditions of contract, special conditions of contract, notice/letter inviting tenders, instructions to tenderers, Drawings, Time Schedule, Schedule of Quantities and all other documents and papers, as detailed in the tender documents, and having understood the provisions of the requirements of J K AGRO, relative to the work tendered for in connection with Projects, and having conducted a thorough study of the job, site(s) involved, the site conditions, soil conditions, the climatic conditions, labour, power, water, material and equipment availability of land for right of way and temporary office and accommodation quarters and all other factors and facilities and things whatsoever necessary or relative to the formulation of the tender and the performance of work.

I/We hereby submit our tender offer for performance of proposed work in accordance with the terms and conditions and within the time mentioned in the Tender Documents at the rate(s) quoted by me/us in the accompanying Schedule(s) of Quantities included within the Tender Documents.

It has been explained to me/us that the time stipulated for job(s) and completion of work(s) in all respect and in different stages mentioned in the Instructions to Tenderers and signed and accepted by me/us is the essence of the contract. I/We agree that in case of my/our failure to strictly observe that time of completion of jobs or any of them and to the final completion work in all respects according to the schedule. I/We shall pay penalty to the J K AGRO as per provision of tender document.

I/We further agree to sign an Agreement/Bond to abide by the Conditions and Special Conditions of Contract with all correction slips upto date and amendments, corrigendum annexed, additional conditions, specifications, notice/letter inviting tender and instructions to the tenderers and to carry out all works and according to the specifications for materials and works of the PWD/ SSR 2022/MORTH/Special conditions. In the case of acceptance of tender, I/We bind myself/ourselves to execute the contract documents within 15 days from the date of issue of LOA without penalty / with penalty respectively, after notice that the contract has been awarded to me/us and to commence the work within 15 days after date of issue of LOA failing which I/We shall have no objection to the forfeiture of the earnest money amounting to Rs. 35,05,000/-only, lodged with the JK Agro.

I/We also undertake to carry out the work in accordance with the said plan specifications and tender documents as stated in the above Para and to bind and provide such of the materials (other than those to be supplied by the J K AGRO), and to do all such things which in the opinion of the Site In Charge may be necessary for, or incidental to the construction, completion and maintenance thereof and to complete the whole of the said works in all respects, and hand them over to you or your representative within the period specified; and to maintain the same for the period and in the manner provided in the conditions of contracts.

I/We have annexed all the documents with Tender Noand all the documents listed under **Section-1** including tender documents duly signed.

I/We hereby undertake that the statements made herein and the information given in the annexure referred to above are true in all respects and that in the event of any such statement or information being found to be incorrect in any above particulars, the same may be construed to be a misrepresentation, entitling J K AGRO to avoid any resultant contract.

I/We confirm having deposited earnest money of Rs. 35,85,000/- (Rupees Thirty Five lacs Eight Five Thousand Only) in the prescribed form.

SIGNATURE (S) OF THE TENDERER WITH STAMP

Name & Designation of authorized person (s) Signing the tender on behalf of the tenderer (s) (Power of attorney to be also enclosed)

INDEMNITY BOND

Name of the work (On non-judicial stamp paper of appropriate value) Know all men by these presents that I/we _____

Name of Contractor with address _____

Do hereby execute Indemnity Bond on _____ day of _____ 2023 in favour of (I) J&K Agro Industries Corporation Ltd., and

(II) appointed as the Engineers for the Project Management for and on behalf of J K AGRO for the work of vide Tender No.

THIS DEED WITNESSETH AS FOLLOWS:

I/We _____ (Name of contractor) hereby do indemnify and save harmless J K AGRO & having their Regd. Office at and respectively from:

- (1) Any third party claims, civil or criminal complaints/liabilities, site mishaps and other accidents or disputes and/or damages occurring or arising out of any mishaps at the site due to faulty work, negligence, faulty construction and/or by violation of any law, rules and regulations in force, for the time being while executing/executed civil works by me/us.
- (2) Any damage, loss or expenses due to or resulting from any negligence or breach of duty on the part of me/us or any sub contractor, if any, servants or agents.
- (3) Any claims by an employee of Mine/ours or of sub-contractor(s) if any, under the Workman Compensation Act and Employers' Liability act, 1939 or any other law, rules and regulations in force for the time being and any acts replacing and/or amending the same or any of the same as may be in force at the time and under any law in respect of injuries to persons or property arising out of and in the course of execution of the contract, work and/or arising out of and in the course of employment of any workman/employee.
- (4) Any Act or omission of mine/ours or sub-contractors if any. Our/their servants or agent which may involve any loss, damage, liability, civil or criminal action.

IN WITNESS WHEREOF THE.....

HAS SET HIS/THEIR HANDS ON THIS DAY OF 2023.

SIGNED AND DELIVERED BY THE

AFORESAID.....

IN THE PRESENCE OF WITNESS

1.

2.

Power of Attorney**ON NON-JUDICIAL STAMP PAPER OF ADEQUATE VALUE AS PER THE JURISDICTION**

Know all men by these presents I/We,, son/daughter/wife of Mr....., aged years, citizen of, presently residing at, Managing Director/ Chief Executive Officer/Partner of M/s.....[*name of contractor*], a company/Firm incorporated in India under the **Partnership Act/Companies Act, 1956/ Companies Act, 2013** and having its registered office at(hereinafter called “the Principal”) by virtue of the resolution passed at the Meeting of the Board of Directors of the Company held on or deed/resolution of the Firm dated *or* the Power of Attorney dated granted to me pursuant to the resolution passed at the meeting of Board of Directors of company held on or deed/resolution of the Firm dated....., delegated to me/us certain powers to act on behalf of the company/firm for various purposes. As per the said delegation, I/We have been authorized to appoint and substitute any person or persons to exercise all or any of certain powers delegated to me/us by the Company/Firm and/or to grant Powers of Attorney to the officers and employees of the Company/Firm to perform various acts, deeds and things required to be done by the Company/Firm.

Whereas J&K Agro Industries Corporation Ltd. (“J K AGRO”), has invited proposals from interested parties for the work of..... at (Project/works).

Whereas,.....(name of the contractor), the Principal is interested in bidding for the Project/works in accordance with the terms and conditions of the tender document, bearing No....., dated and other connected documents in respect of the Project/works, and

Whereas, it is necessary for the Principal to delegate to one of the employee / partner(s) / director with all necessary power and authority to do for and on behalf of the(name of the contractor), all acts, deeds and things as may be necessary, including but not limited to representing the contractor, signing of tender documents, bills, measurement books, drawings and other related documents in connection with the Bid for the Project/works and its execution.

NOW THESE PRESENTS WITNESSETH that I/we do hereby designate, nominate, constitute appoint and irrevocably authorize Mr./ Ms., son/daughter/wife of Mr....., aged years, citizen of, presently residing at[specify designation] and whose signatures are given below, as true and lawful Attorney of the Principal(hereinafter referred to as the “Attorney”), to have and exercise in the name and on behalf of the Principal the powers and authorities hereinafter mentioned:

1. To execute all required documents and conduct all business for and on behalf of the Principal during the Bidding process of the Project/works and, in the event Principal is awarded the contract, during the execution of the Project/works; and

2. To do on behalf of the Principal, all or any of such acts, deeds or things as are necessary or required or incidental to the selection of the Principal and signing and submission of its Bid/tender for the Project/works, including but not limited to signing and submission of all applications, bids and other documents and writings, participate in bidders’ and other conferences, respond to queries, submit

information/documents, sign and execute contracts and undertakings consequent to acceptance of the Bid of the Principal and generally to represent the Principal in all its dealings with J K AGRO, and/ or any other Government Agency or court/judicial authority or any person, in all matters in connection with or relating to or arising out of the Contractor's bid for the Project/works and/ or upon award thereof till the agreement for the Project/works is entered into with J K AGRO and thereafter till the completion of the project/works and expiry of the contract agreement.

AND We/I hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by said Attorney in exercise of the powers hereby conferred shall always be deemed to have been done by me/us

This Power of Attorney shall stand revoked on issuance of a new Power of Attorney issued with regard to this Project/works or if earlier revoked by me or the Company/Firm.

Given under the hand of the within named[name of individual] on this day of[month][year].

[Signature of Managing Director/ Director/Partner(s)/Other authorised person][Name of Company/Firm]

[date] [place]

I accept

[Signature of Attorney][date]
[place]

Witnesses:

- 1.
- 2.

Notes:

- The mode of execution of the Power of Attorney shall be in accordance with the charter documents of the executants(s) and when it is so required, the same shall be under common seal affixed in accordance with the required procedure.

- Also, wherever required, the Tenderer shall submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/ power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Tenderer.

Power of Attorney**ON NON-JUDICIAL STAMP PAPER OF ADEQUATE VALUE AS PER THE JURISDICTION**

Know all men by these presents I, son/daughter/wife of Mr....., aged years, citizen of, presently residing at and **Proprietor** of M/s..... and having its office at(hereinafter called “the Principal) do hereby execute this Power of Attorney on the date mentioned herein below.

Whereas J&K Agro Industries Corporation Ltd. (“J K AGRO”), has invited proposals from interested parties for the work of at (Project/works).

Whereas, _____ (name of the contractor), the Principal is interested in bidding for the Project/works in accordance with the terms and conditions of the tender document, bearing No....., dated and other connected documents in respect of the Project/works, and

Whereas, it is necessary for the Principal to delegate to one of the employee with all necessary power and authority to do for and on behalf of the _____ (name of the contractor), all acts, deeds and things as may be necessary, including but not limited to representing the contractor, signing of tender documents, bills, measurement books, drawings and other related documents in connection with the _____ Bid for the Project/works and its execution.

NOW THESE PRESENTS WITNESSETH that I do hereby designate, nominate, constitute appoint and irrevocably authorize Mr./ Ms., son/daughter/wife of Mr....., aged years, citizen of, presently residing at [specify designation] and whose signatures are given below, as true and lawful Attorney of the Principal (hereinafter referred to as the “Attorney”), to have and exercise in the name and on behalf of the Principal the powers and authorities hereinafter mentioned:

1. To execute all required documents and conduct all business for and on behalf of the Principal during the Bidding process of the Project/works and, in the event Principal is awarded the contract, during the execution of the Project/works; and
2. To do on behalf of the Principal, all or any of such acts, deeds or things as are necessary or required or incidental to the selection of the Principal and signing and submission of its Bid/tender for the Project/works, including but not limited to signing and submission of all applications, bids and other documents and writings, participate in bidders’ and other conferences, respond to queries, submit information/documents, sign and execute contracts and undertakings consequent to acceptance of the Bid of the Principal and generally to represent the Principal in all its dealings with J K AGRO, and/ or any other

Government Agency or court/judicial authority or any person, in all matters in connection with or relating to or arising out of the Contractor's bid for the Project/works and/ or upon award thereof till the agreement for the Project/works is entered into with J K AGRO and thereafter till the completion of the project/works and expiry of the contract agreement.

AND I hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by said Attorney in exercise of the powers hereby conferred shall always be deemed to have been done by me/us

This Power of Attorney shall stand revoked on issuance of a new Power of Attorney issued with regard to this Project/works or if earlier revoked by me.

Given under the hand of the within named[name of individual] on this day of[month][year].

[Signature of Proprietor][Name of Concern]

[date] [place]

I accept

[Signature of Attorney][date]
[place]

Witnesses:

- 1.
- 2.

Notes:

- The mode of execution of the Power of Attorney shall be in accordance with the charter documents of the executants(s) and when it is so required, the same shall be under common seal affixed in accordance with the required procedure.
- Also, wherever required, the Tenderer shall submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/ power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Tenderer.

ANNEXURE- D
AGREEMENT FOR WORKS

Agreement No. _____

THIS AGREEMENT made this _____ day of _____ Two thousand and _____ between JK Agro Industries Development Corporation Ltd., (JK Agro) having its registered office at Agro Complex, Lal Mandi, Srinagar (which expression shall mean and include its successor or successors in office and assigns) representing through Managing Director, JK Agro Ltd., hereinafter called "The Company" on the one part and M/s. _____ hereinafter called the "Contractor" (which expression shall mean and include their heirs, executors and administrators and assigns) on the other part.

WHEREAS the Company being desirous of having provided and executed certain works mentioned, enumerated or referred to in the specifications, conditions of contract, schedule of quantities of works drawings and other documents consisting of the "Tender" and acceptance thereof, copy hereto annexed, all of which are deemed to form part of this contract and are included in the terms CONTRACT whenever herein used.

AND WHEREAS the Company accepted the tender of contractor _____ (Name of Contractor) _____ for the execution of _____ (name of work) _____ as per below mentioned correspondence letters :-

- (a) Tender No:- _____
- (b) Tender opened on _____
- (c) Contractor letter No; _____
- (d) This office letter No. _____

Company Detailed Letter of Acceptance no. _____ as accepted by Contractor _____ (Name of Contractor) _____ for the provision and the execution of the said work at the accepted rates, terms & conditions. The total contract amount works out for this work is Rs. ____ (Rupees _____).

NOW THIS AGREEMENT WITNESSETH & IT IS HEREBY AGREED AND DECLARED AS FOLLOWS :

1. In consideration of the payments to be made to the contractor for the work to be executed by him, the contractor does hereby covenant with the Company that the contractor shall and will duly provide, execute, and complete the said work within _____ months from the 15th day after date of issue of detailed letter of acceptance i.e., by _____ as provided in the tender document and shall maintain the same at his own cost for a period of **06 (Six) months** thereafter, perform all other acts to be implied there from or may be reasonably necessary for the completion of the said works and in the manner and subject to the terms and conditions or stipulation mentioned in the contract.

2. Time is the essence of the contract. Extension of time due to delay on the part of contractor, i.e.. in case the contractor fails to complete the work within the stipulated period, including extended period, if granted, contractor will be liable to pay liquidated damages and not by way of penalty.

3. In consideration of the due provision, execution, and completion of the said works, the Company does hereby, agree with the contractor that the Company will pay to the contractor the respective amount for the work actually done by him or the "Schedule of Rate" as contained in the appended schedule and such other sums as may become payable to the Contractor under the provisions of the contract, such payments to be made at such time and in such manner as provided for in this agreement.

4. Performance Security deposit on acceptance of tender:

(a) Contractor has submitted FDR/CDR amounting to Rs. _____ (Rupees _____) vide bank A/c No. _____ dated _____ issued by _____ (Name of the bank) valid till _____.

(b) Performance security deposit on acceptance of the tender is 5% (Five percent) and shall be return after successful completion of work.

(c) Security deposit of project 10% (Five percent) of the contract value, will be recovered from the Running Account Bills at the rate of 10% from each running bill and shall be retained till the completion of defect liability period of two year.

The security deposit unless forfeited in whole or in part according to the terms and conditions will be refunded on receipt of a certificate from the Site In Charge to the effect that the work is completed satisfactorily and maintained in all respects for the period specified in the contract. The certificate, inter alia, should mention that the work has been completed in all respects and that all the contractual obligations have been fulfilled by the contractors and that there is no due from the contractor to JK Agro against the contract concerned. Before releasing the SD, an unconditional and unequivocal no claim certificate is required to be submitted by contractor.

No interest will accrue on the Security Deposit under any circumstances.

5. Price Variation Clause (PVC) is not applicable in this contract.

6. In consideration of the due provision, execution and completion of the said works the contractor does hereby agree to pay the Company the sum as may be due to the Company for the service, if any rendered by the Company to the contractor and such other sum or sums as may become payable to the company towards loss, damage to the Company's equipment materials, plant and machinery liquidated damages, if any, as set forth in the said conditions of contract, such payment to be made at such time in such manner as is provided in the contract.

SIGNED AND DELIVERED FOR AND ON BEHALF OF.....

IN THE PRESENCE OF

WITNESS :

1. _____

2. _____

SIGNED AND DELIVERED FOR AND ON BEHALF OF JK AGRO.

IN THE PRESENCE OF

WITNESS :

1. _____

2. _____

SECTION – III

(General Conditions of Contract)

GENERAL OBLIGATIONS

1. Execution Co-Relation and Intent of Contract Documents: The contract documents shall be signed in triplicate by the JK Agro and the Contractor. The contract documents are complementary and what is called for by anyone shall be as binding as if called for by all, the intention of the documents is to include all labour and materials, equipment and transportation necessary for proper execution of work. Materials or works not covered by or properly inferable from any heading or class of the specifications shall not be supplied by the JK Agro to the contractors unless distinctly specified in the contract documents. Materials or works described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognised standards.

2. Law Governing The Contract : The contract shall be governed by the law for the time being in force in the Republic of India.

3. Compliance To Regulations And Bye-Laws : The Contractor shall conform to the provision of any statute relating to the works and regulations and bye-laws of any local authority and of any water and lighting companies or undertakings, with whose system the work is proposed to be connected and shall before making any variation from the drawings or the specifications that may be necessitated by so confirming give to the Site In charge notice specifying the variation proposed to be made and the reason for making the variation and shall not carry out such variation until he has received instructions from the Site In charge in respect thereof. The Contractor shall be bound to give all notices required by statute, regulations or bye-laws as aforesaid and to pay all fees and taxes payable to any authority in respect thereof.

4. Communications To Be In Writing : All notices, communications, reference and complaints made by the JK Agro or the Site In charge or the Site In charge's Representative or the Contractor inter-se concerning the works shall be in writing and no notice, communication, reference or complaint not in writing shall be recognized.

5. Service Of Notices On Contractors : The Contractor shall furnish to the Site In charge the name, designation and address of his authorized agent and all complaints, notices, communications and references shall be deemed to have been duly given to the Contractor, if delivered to the Contractor or his authorised agent or left at or posted to the address so given and shall be deemed to have been so given in the case of posting on day on which they would have reached such address in the ordinary course of post or on the day on which they were so delivered or left. In the case of contract by partners, any change in the constitution of the firm shall be forthwith notified by the Contractor to the Site In charge.

6. Occupation And Use Of Land : No land belonging to or in the possession of the JK Agro shall be occupied by the Contractor without the permission of the JK Agro. The Contractor shall not use, or allow to be used, the site for any purposes other than that of executing the works. Whenever non-JK Agro bodies/persons are permitted to use JK Agro premises with competent authority's approval, conservancy charges as applicable from time to time may be levied.

7. Assignment Or Subletting Of Contract : The Contractor shall not assign or sublet the contract or any part thereof or allow any person to become interested therein any manner whatsoever without the special permission in writing of the JK Agro. Any breach of this condition shall entitle the JK Agro to rescind the contract and also render the contractor liable for payment to the JK Agro in respect of any loss or damage arising or ensuing from such cancellation; provided always that execution of the details of the work by petty contractor under the direct and personal supervision of the Contractor or his agent shall not be deemed to be sub-letting under this clause. The permitted subletting of work by the Contractor shall not establish any contractual relationship between the sub-contractor and the JK Agro and shall not relieve the Contractor of any responsibility under the Contract.

8. Carriage Of Materials : No forwarding orders shall be issued by the JK Agro for the conveyance of Contractor's materials, tools and plant for use in the works and the contractor shall pay full freight charges at public tariff rates therefor.

9. Representation On Works : The Contractor shall, when he is not personally present on the site of the works place, keep a responsible agent at the works during working hours who shall on receiving reasonable notice, present himself to the Site In charge and orders given by the Site In charge or the Site In charge r's representative to the agent shall be deemed to have the same force as if they had been given to the Contractor. Before absenting himself, the Contractor shall furnish the name and address of his agent for the purpose of this clause and failure on the part of the Contractor to comply with this provision at any time will entitle the JK Agro to rescind the contract.

10. Excavated Material : The Contractor shall not sell or otherwise dispose of or remove except for the purpose of this contract, the sand, stone, clay ballast, earth, rock or other substances or materials which may be obtained from any excavation made for the purpose of the works or any building or produced upon the site at the time of delivery of the possession thereof but all the substances, materials, buildings and produce shall be the property of the JK Agro provided that the Contractor may, with the permission of the Site In charge, use the same for the purpose of the works either free of cost or pay the cost of the same at such rates as may be determined by the Site In charge.

11. Indemnity By Contractors : The Contractor shall indemnify and save harmless the JK Agro from and against all actions, suit proceedings losses, costs, damages, charges, claims and demands of every nature and description brought or recovered against the JK Agro by reason of any act or omission of the Contractor, his agents or employees, in the execution of the works or in his guarding of the same. All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the actual loss or damage sustained, and whether or not any damage shall have been sustained.

12. Security Deposit (Retention Money):

Security Deposit for each work should be **10 %** of the contract value,
The rate of recovery should be at the rate of **10 %** of the running bill amount till the full Security Deposit is recovered.

50% of the Security Deposit shall be returned after one year of maintenance to be counted from the date of Commissioning/ handing over & remaining 50% after two years of maintenance to be counted from the date of Commissioning/ handing over, with the approval of the Competent Authority. The

certificate, inter alia, should mention that the work has been completed in all respects and that all the contractual obligations have been fulfilled by the contractor and that there is no due from the contractor to JK Agro against the contract concerned. Before releasing the SD, an unconditional and unequivocal **'No Claim Certificate'** from the contractor concerned should be obtained.

No interest will be payable upon the Earnest Money and Security Deposit or amounts payable to the Contractor under the Contract.

13. **Force Majeure Clause :** If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract shall be prevented or delayed by reason of any war, hostility, acts of public enemy, civil commotion, sabotage, serious loss or damage by fire, explosions, epidemics, strikes, lockouts or acts of God (hereinafter, referred to events) provided, notice of the happening of any such event is given by either party to the other within 30 days from the date of occurrence thereof, neither party shall by reason of such event, be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non-performance of delay in performance, and works under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of the Site In charge as to whether the works have been so resumed or not shall be final and conclusive, PROVIDED FURTHER that if the performance in whole or in part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 120 days, either party may at its option terminate the contract by giving notice to the other party.

14. **Extension Of Time In Contracts :** Subject to any requirement in the contract as to completion of any portions or portions of the works before completion of the whole, the contractor shall fully and finally complete the whole of the works comprised in the contract (with such modifications as may be directed under conditions of this contract) by the date entered in the contract or extended date in terms of the following clauses:

(i) **Extension Due To Modification :** If any modifications have been ordered which in the opinion of the Site In charge have materially increased the magnitude of the work, then such extension of the contracted date of completion may be granted as shall appear to the Site In charge to be reasonable in the circumstances, provided moreover that the Contractor shall be responsible for requesting such extension of the date as may be considered necessary as soon as the cause thereof shall arise and in any case not less than one month before the expiry of the date fixed for completion of the works.

(ii) **Extension For Delay Not Due To JK Agro Or Contractor :** If in the opinion of the Site In charge, the progress of work has any time been delayed by any act or neglect of JK Agro's employees or by other contractor employed by the JK Agro of these Conditions or in executing the work not forming part of the contract but on which contractor's performance necessarily depends or by reason of proceeding taken or threatened by or dispute with adjoining or to neighbouring owners or public authority arising otherwise through the Contractor's own default etc. or by the delay authorized by the Site In charge pending arbitration or in consequences of the contractor not having received in due time necessary instructions from the JK Agro for which he shall have specially applied in writing to the Site In charge or his authorized representative then upon happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Site In charge within 15 days of such happening, but shall nevertheless make constantly his best endeavours to bring down or make good the delay and shall do all that may be reasonably required of him to the satisfaction of the Site In charge to proceed with the works. The contractor may also indicate the period for which the work is likely to be delayed and shall be bound to ask for necessary extension of time. The Site In charge on receipt of such request from the contractor shall consider the same and shall grant such extension of time as in his opinion is reasonable having regard to the

nature and period of delay and the type and quantum of work affected thereby. No other compensation shall be payable for works so carried forward to the extended period of time, the same rates, terms and conditions of contract being applicable as if such extended period of time was originally provided in the original contract itself.

(iii) **Extension For Delay Due To JK Agro :** In the event of any failure or delay by the JK Agro to hand over the Contractor possession of the lands necessary for the execution of the works or to give the necessary notice to commence the works or to provide the necessary drawings or instructions or any other delay caused by the JK Agro due to any other cause whatsoever, then such failure or delay shall in no way affect or vitiate the contract or alter the character thereof or entitle the contractor to damages or compensation therefor, but in any such case, the JK Agro may grant such extension or extensions of the completion date as may be considered reasonable.

EXECUTION OF WORKS

15. **Contractor's Understanding :** It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the progress of the works, the general and local conditions, the labour conditions prevailing therein and all other matters which can in any way affect the works under the contract.

16. **Commencement Of Works :** The Contractor shall commence the works within 15 days after the receipt by him of an order in writing to this effect from the corporation and shall proceed with the same with due expedition and without delay

17. **Accepted Programme Of Work :** The Contractor who has been awarded the work shall as soon as possible but not later than 15 days after the date of receipt of the acceptance letter in respect of contract. The contractor have to submit the detailed programme of work indicating the time schedule of various items of works in the form of Bar Chart/PERT/CPM. He shall also submit the details of organisation (in terms of labour and supervisors) plant and machinery that he intends to utilize (from time to time) for execution of the work within stipulated date of completion. The programme of work amended as necessary by discussions with the Site In charge, shall be treated as the agreed programme of the work for the purpose of this contract and the contractor shall endeavour to fulfill this programme of work. The progress of work will be watched accordingly and the liquidated damages will be with reference to the overall completion date. Nothing stated herein shall preclude the contractor in achieving earlier completion of item or whole of the work than indicated in the programme.

18. **Setting Out Of Works :** The Contractor shall be responsible for the correct setting out of all works in relation to original points, lines and levels of reference at his cost. The Contractor shall execute the work true to alignment, grade, levels and dimensions as shown in the drawing and as directed by the Site In charge 's representative and shall check these at frequent intervals. The Contractor shall provide all facilities like labour and instruments and shall co- operate with the Site In charge 's representative to check all alignment, grades, levels and dimensions. If, at any time, during the progress of the works any error shall appear or arise in any part of the work, the Contractor, on being required so to do by the Site In charge's representative shall, at his own cost rectify such errors, to the satisfaction of the Site In charge's representative. Such checking shall not absolve the Contractor of his own responsibility of

maintaining accuracy in the work. The Contractor shall carefully protect and preserve all bench marks, and other things used in setting out the work.

19. **Compliance To Site In charge's Instructions :** The Site In charge shall direct the order in which the several parts of the works shall be executed and the Contractor shall execute without delay all orders given by the Site In charge from time to time; but the Contractor shall not be relieved thereby from responsibility for the due performance of the works in all respects.

20. **Alterations To Be Authorized :** No alterations in or additions to or omissions or abandonment of any part of the works shall be deemed authorised, except under instructions from the Site In charge, and the Contractor shall be responsible to obtain such instructions in each and every case in writing from the Site In charge.

21. **Extra Works :** Should works over and above those included in the contract require to be executed at the site, the contractor shall have no right to be entrusted with the execution of such works which may be carried out by another contractor or contractors or by other means at the option of the JK Agro.

22. **Separate Contracts In Connection With Works :** The JK Agro shall have the right to let other contracts in connection with the works. The Contractor shall afford other contractors reasonable opportunity for the storage of their materials and the execution of their works and shall properly connect and coordinate his work with theirs. If any part of the Contractors work depends for proper execution or result upon the work of another contractor(s), the Contractor shall inspect and promptly report to the Site In charge any defects in such works that render it unsuitable for such proper execution and results. The Contractor's failure so-to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the other contractor's work after the execution of his work.

23. **Instruction Of Site In charge 's Representative :** Any instructions or approval given by the Site In charge's representative to Contractor in connection with the works shall bind the Contractor as though it had been given by the Site In charge provided always as follows:

a. Failure of the Site In charge's representative to disapprove any work or materials shall not prejudice the power of the Site In charge thereafter to disapprove such work or material and to order the removal or breaking up thereof.

b. If the Contractor shall be dissatisfied by reason of any decision of the Site In charge's representative, he shall be entitled to refer the matter to the Site In charge who shall there upon confirm or vary such decision.

24. **Adherence To Specifications And Drawings :** The whole of the works shall be executed in perfect conformity with the specifications and drawings of the contract. If Contractor performs any works in a manner contrary to the specifications or drawings or any of them and without such reference to the Site In charge, he shall bear all the costs arising or ensuing therefrom and shall be responsible for all loss to the JK Agro.

25. **Drawings And Specifications Of The Works :** The Contractor shall keep one copy of Drawings and Specifications at the site, in good order, and such contract documents as may be necessary, available to the Site In charge or the Site In charge's Representative.

26. **Ownership Of Drawings And Specifications :** All Drawings and Specifications and copies thereof furnished by the JK Agro to the Contractor are deemed to be the property of the JK Agro. They shall not be used on other works and with the exception of the signed contract set, shall be returned by the Contractor to the JK Agro on completion of the work or termination of the Contract.

27. **Compliance With Contractor's Request For Details :** The Corporation shall furnish with reasonable promptness, after receipt by him of the Contractor's request for the same, additional instructions by means of drawings or otherwise, necessary for the proper execution of the works or any part thereof. All such drawings and instructions shall be consistent with the Contract Documents and reasonably inferable therefrom.

28. **Meaning And Intent Of Specification And Drawings :** If any ambiguity arises as to the meaning and intent of any portion of the Specifications and Drawings or as to execution or quality of any work or material, or as to the measurements of the works the decision of the Site In charge thereon shall be final subject to the appeal (within 7 days of such decision being intimated to the Contractor) to the Managing Director who shall have the power to correct any errors, omissions, or discrepancies in aforementioned items and whose decision in the matter in dispute or doubt shall be final and conclusive.

29. **Working During Night :** The Contractor shall not carry out any work between sun-set and sun-rise without the previous permission of the Site In charge.

30. **Damage To JK Agro Property Or Private Life And Property :** The Contractor shall be responsible for all risk to the work and for trespass and shall make good at his own expense all loss or damage whether to the works themselves or to any other property of the JK Agro or the lives, persons or property of others from whatsoever cause in connection with the works until they are taken over by the JK Agro and this although all reasonable and proper precautions may have been taken by the Contractor, and in case the JK Agro shall be called upon to make good any costs, loss or damages, or to pay any compensation, including that payable under the provisions of the Workmen's Compensation Act or any statutory amendments thereof to any person or persons sustaining damages as aforesaid by reason of any act, or any negligence or omissions on the part of the Contractor; the amount of any costs or charges including costs and charges in connection with legal proceedings, which the JK Agro may incur in reference thereto, shall be charged to the Contractor. The JK Agro shall have the power and right to pay or to defend or compromise any claim of threatened legal proceedings or in anticipation of legal proceedings being instituted consequent on the action or default of the Contractor, to take such steps as may be considered necessary or desirable to ward off or mitigate the effect of such proceedings, charging to Contractor, as aforesaid, any sum or sums of money which may be paid and any expenses whether for reinstatement or otherwise which may be incurred and the propriety of any such payment, defence or compromise, and the incurring of any such expenses shall not be called in question by the Contractor.

31. **Sheds, Stores Houses And Yards :** The Contractor shall at his own expense provide himself with sheds, storehouses and yards in such situations and in such numbers as in the opinion of the Site In charge is requisite for carrying on the works and the Contractor shall keep at each such sheds, storehouses and yards a sufficient quantity of materials and plant in stock as not to delay the carrying out of the works with due expedition and the Site In charge and the Site In charge's representative shall have free access to the said sheds, store houses and yards at anytime for the purpose of inspecting the stock of

materials or plant so kept in hand, and any materials or plant which the Site In charge may object to shall not be brought upon or used in the works, but shall be forthwith removed from the sheds, store houses or yards by the Contractor. The Contractor shall at his own expenses provide and maintain suitable mortar mills, soakingvats or any other equipments necessary for the execution of the works.

32. **Workmanship And Testing :** The whole of the works and/or supply of materials specified and provided in the contract or that may be necessary to be done in order to form and complete any part thereof shall be executed in the best and most substantial workman like manner with materials of the best and most approved quality of their respective kinds, agreeable to the particulars contained in or implied by the specifications and as referred to in and represented by the drawings or in such other additional particulars, instructions and drawings may be found requisite to be given during the carrying on of the works and to the entire satisfaction of the Site In charge according to the instructions and directions which the Contractors may from time to time receive from the Site In charge. The materials may be subjected to tests by means of such machines, instruments and appliances as the Site In charge may direct and wholly at the expense of the Contractor.

33. **Removal Of Improper Work And Materials :** The Site In charge or the Site In charge's Representative shall be entitled to order from time to time:

- i. the removal from the site within the time specified in the order of any materials which in his opinion are not in accordance with the specifications or drawings.
- ii. the substitution of proper and suitable materials, and
- iii. the removal and proper re-execution, notwithstanding any previous tests thereof or on account payments therefor, of any work which in respect of materials or workmanship is not in his opinion in accordance with the specifications and in case of default on the part of the Contractor in carrying out such order, the JK Agro shall be entitled to rescind the contract under conditions.

34. **Facilities For Inspection :** The Contractor shall afford the Site In charge and the Site In charge 's Representative every facility for entering in and upon every portion of the work at all hours for the purpose of inspection or otherwise and shall provide all labour, materials, planks, ladders, pumps, appliances and things of every kind required for the purpose and the Site In charge and the Site In charge 's Representative shall at all times have free access to every part of the works and to all places at which materials for the works are stored or being prepared.

35. **Examination Of Work Before Covering Up :** The Contractor shall give 7 days' notice to the Site In charge or the Site In charge's Representative whenever any work or materials are intended to be covered up in the earth, in bodies or walls or otherwise to be placed beyond the reach of measurements in order that the work may be inspected or that correct dimensions may be taken before being so covered, placed beyond the reach of measurement in default whereof, the same shall at the option of the Site In charge or the Site In charge's Representative be uncovered and measured at the Contractor's expense or no allowance shall be made for such work or materials.

36. **Safety Of Public :** The Contractor shall be responsible to take all precautions to ensure the safety of the public whether on public or JK Agro property and shall post such look out men as may, in the opinion of the Site In charge, be required to comply with regulations appertaining to the work.

37. **Suspension Of Works :** The Contractor shall on the order of the Site In charge r, suspend the progress of the works or any part thereof for such time or times and in such manner as the Site In charge

38. may consider necessary and shall during such suspension properly protect and secure the work so far as is necessary in the opinion of the Site In charge. If such suspension is:

- a. Provided for in the contract, or
- b. Necessary for the proper execution of the works or by the reason of weather conditions or by some default on the part of the Contractor, and or
- c. Necessary for the safety of the works or any part thereof.

The Contractor shall not be entitled to the extra costs, if any, incurred by him during the period of suspension of the works, but in the event of any suspension ordered by the Site In charge for reasons other than aforementioned and when each such period of suspension exceeds 14 days, the Contractor shall be entitled to such extension of time for completion of the works as the Site In charge may consider proper having regard to the period or periods of such suspensions and to such compensations as the Site In charge may consider reasonable in respect of salaries or wages paid by the Contractor to his employees during the periods of such suspension.

39. **Handing Over of Works :** The Contractor shall be bound to hand over the works executed under the contract to the JK Agro complete in all respects to the satisfaction of the Site In charge. The Site In charge shall determine the date on which the work is considered to have been completed, in support of which his certificate shall be regarded as sufficient evidence for all purposes. The Site In charge shall determine from time to time, the date on which any particular section of the work shall have been completed, and the contractor shall be bound to observe any such determination of the Site In charge.

40. **Clearance Of Site On Completion :** On completion of the works, the Contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary works of every kind and leave the whole of the site and works clean and in a workman like condition to the satisfaction of the Site In charge. No final payment in settlement of the accounts for the works shall be paid, held to be due or shall be made to the, Contractor till, in addition to any other condition necessary for final payment, site clearance shall have been affected by him, and such clearance may be made by the Site In charge at the expense of the Contractor in the event of his failure to comply with this provision within 7 days after receiving notice to that effect. Should it become necessary for the Site In charge to have the site cleared at the expenses of the Contractor, the JK Agro shall not be held liable for any loss or damage to such of the Contractor's property as may be on the site and due to such removal there from which removal may be affected by means of public sales of such materials and property or in such a way as deemed fit and convenient to the Site In charge.

VARIATIONS IN EXTENT OF CONTRACT

41. **Modification To Contract To Be In Writing :** In the event of any of the provisions of the contract requiring to be modified after the contract documents have been signed, the modifications shall be made in writing and signed by the JK Agro and the Contractor and no work shall proceed under such modifications until this has been done. Any verbal or written arrangement abandoning, modifying, extending, reducing or supplementing the contract or any of the terms thereof shall be deemed conditional and shall not be binding on the JK Agro unless and until the same is incorporated in a formal

instrument and signed by the JK Agro and the Contractor, and till then the JK Agro shall have the right to repudiate such arrangements.

42. **Powers of Modification To Contract :** The Site In charge on behalf of the JK Agro shall be entitled by order in writing to enlarge or extend, diminish or reduce the works or make any alterations in their design, character position, site, quantities, dimensions or in the method of their execution or in the combination and use of materials for the execution thereof or to order any additional work to be done or any works not to be done and the contractor will not be entitled, to any compensation for any increase/reduction in the quantities of work but will be paid only for the actual amount of work done and for approved materials supplied against a specific order.

43. **Signing Of "No Claim" Certificate :** The Contractor shall not be entitled to make any claim whatsoever against the JK Agro under or by virtue of or arising out of this contract, nor shall the JK Agro entertain or consider any such claim, if made by the Contractor, after he shall have signed a "No Claim" Certificate in favour of the JK Agro in such form as shall be required by the JK Agro after the works are finally measured up. The Contractor shall be debarred from disputing the correctness of the items covered by "No Claim" Certificate or demanding clearance to arbitration in respect thereof.

44. **(a) Dispute Resolution Mechanism**

If a dispute of any kind, whatsoever, arises between the procuring entity and contractor in connection with or arising out of the contract or the execution of the works, whether during the execution of the works or after their completion and whether before or after the repudiation or termination of the contract, including any disagreement by either party with any action, in action, opinion, instruction, determination, certificate or valuation of the Engineer; the matter in dispute shall, in the first place, be referred to the Dispute Resolution Board.

The Works Committee may act as Dispute Resolution Board and may co-opt any other officer, if felt necessary by them.

(b) Conciliation

The party initiating conciliation shall send a written invitation to the other party to conciliate and proceedings shall commence when the other party accepts the initiations to conciliation. The parties may agree on the name of a sole conciliator or each party may appoint one conciliator. The conciliation shall assist the parties to reach an amicable settlement of their dispute. When the parties sign the settlement agreement, it shall be final and binding on the parties. The conciliator shall authenticate the settlement agreement and furnish a copy thereof to each party.

(c) Arbitration

If any question, dispute or difference whatsoever, arises between the firm & the deptt./ Government in relation to or in connection with this contract either of the parties may give notice in writing of such questions, dispute or difference and the same be referred to the Administrative Secretary of the Department for arbitration. This submission shall be deemed to be a submission to arbitration within the meaning of the Jammu & Kashmir Arbitration Act. In witness thereof the parties here to have signed this agreement on the dates respectively mentioned against their signatures. The provision of J&K Arbitration Act Samvat 2002 and of the rules there under and statutory modification thereof shall be deemed to apply to the arbitration disputes if any regarding reference to courts shall be subject to jurisdiction of J&K courts only.

(d) Jurisdiction of Court: For any dispute arising out of this contract the Hon'ble High Court of Jammu & Kashmir at Jammu/Srinagar only shall have jurisdiction.

MEASUREMENTS, CERTIFICATES AND PAYMENTS

45. **Quantities In Schedule Annexed To Contract :** The quantities set out in the accepted Schedule of Rates with items of works quantified are the estimated quantities of the works and they shall not be taken as the actual and correct quantities of the work to be executed by the Contractor in fulfillment of his obligations under the contract.

46. **Measurement Of Works :** The Contractor shall be paid for the works at the rates in the accepted Schedule of Rates and for extra works at rates determined of these Conditions on the measurements taken by the Site In charge or the Site In charge's representative in accordance with the rules prescribed for the purpose by the JK Agro. The quantities for items the unit of which in the accepted Schedule of Rates is 100 or 1000 shall be calculated to the nearest whole number, any fraction below half being dropped and half and above being taken as one; for items the unit of which in the accepted Schedule of Rates is single, the quantities shall be calculated to two places of decimals. Such measurements will be taken of the work in progress from time to time and at such intervals as in the opinion of the Site In charge shall be proper having regard to the progress of works. The date and time on which 'on account' or 'final' measurements are to be made shall be communicated to the Contractor who shall be present at the site and shall sign the results of the measurements (which shall also be signed by the Site In charge or the Site In charge's representative) recorded in the official measurements book as an acknowledgement of his acceptance of the accuracy of the measurements. Failing the Contractor's attendance, the work may be measured up in his absence and such measurements shall, notwithstanding such absence, be binding upon the Contractor whether or not he shall have signed the measurement books provided always that any objection made by him to measurement shall be duly investigated and considered in the manner set out below:

a. It shall be open to the Contractor to take specific objection to any recorded measurements or Classification on any ground within seven days of the date of such measurements. Any re-measurement taken by the Site In charge or the Site In charge's representative in the presence of the Contractor or in his absence after due notice has been given to him in consequence of objection made by the Contractor shall be final and binding on the Contractor and no claim whatsoever shall thereafter be entertained regarding the accuracy and classification of the measurements.

b. If an objection raised by the Contractor is found by the Site In charge to be incorrect the Contractor shall be liable to pay the actual expenses incurred in measurements.

47. **Rounding Off Amounts :** The total amount due on each certificate shall be rounded off to the nearest rupee, i.e. sum less than 50 paise shall be omitted and sums of 50 paise and more upto Rs.1 will be reckoned as Rs. 1.

48. **Maintenance Of Works :** The Contractor shall at all times during the progress and continuance of the works and also for the period of maintenance specified in the Tender Form after the date of passing of the certificate of completion by the Site In charge or any other earlier date subsequent to the completion of the works that may be fixed by the Site In charge be responsible for and effectively maintain and uphold in good substantial, sound and perfect condition all and every part of the works and shall make good from time to time and at all times as often as the Site In charge shall require, any damage or defect that may during the above period arise in or be discovered or be in any way connected with the works, provided that such damage or defect is not directly caused by errors in the contract documents, act of providence or insurrection or civil riot, and the Contractor shall be liable for and shall pay and make good to the JK Agro or other persons legally entitled thereto whenever required

by the Site In charge so to do, all losses, damages, costs and expenses they or any of them may incur or be put or be liable to by reasons or in consequence of the operations of the Contractor or of his failure in any respect.

49. **Certificate Of Completion Of Works :** As soon as in the opinion of the Site In charge, the work has been completed and has satisfactorily passed any final test or tests that may be prescribed, the Site In charge shall issue a certificate of completion duly indicating the date of completion in respect of the work and the period of maintenance of the work shall commence from the date of completion mentioned in such certificate. The Site In charge may also issue such a certificate indicating date of completion with respect to any part of the work (before the completion of the whole of work), which has been both completed to the satisfaction of the Site In charge and occupied or used by the JK Agro. When any such certificate is given in respect of part of a work, such part shall be considered as completed and the period of maintenance of such part shall commence from the date of completion mentioned in the completion certificate issued for that part of the work.

50. **Maintenance Certificate :** The Contract shall not be considered as completed until a Maintenance Certificate shall have been signed by the Site In charge stating that the works have been completed and maintained to his satisfaction. The maintenance Certificate shall be given by the Site In charge upon the expiration of the period of maintenance or as soon thereafter as any works ordered during such period shall have been completed to the satisfaction of the Site In charge and full effect shall be given to this Clause notwithstanding the taking possession of or using the works or any part thereof by the JK Agro.

51. **Final Payment :** On the Site In charge's certificate of completion in respect of the works, adjustment shall be made and the balance of account based on the Site In charge or the Site In charge's representative's certified measurements of the total quantity of work executed by the Contractor upto the date of completion and on the accepted schedule or rates and for extra works on rates determined under these Conditions shall be paid to the Contractor subject always to any deduction which may be made under these presents and further subject to the Contractor having delivered to the Site In charge either a full account in detail of all claims he may have on the JK Agro in respect of the works or having delivered "No Claim Certificate" and the Site In charge having after the receipt of such account given a certificate in writing that such claims are correct, that the whole of the works to be done under the provisions of the Contracts have been completed, that they have been inspected by him since their completion and found to be in good and substantial order, that all properties, works and things, removed, disturbed or injured in consequence of the works have been properly replaced and made good and all expenses and demands incurred by or made upon the JK Agro for or in the respect of damage or loss by from or in consequence of the works, have been satisfied agreeably and in conformity with the contract.

52. **Production Of Vouchers Etc. By The Contractor :**

(i) For a contract of more than one crore of rupees, the contractor shall, whenever required, produce or cause to be produced for examination by the Site In charge any quotation, invoice, cost or other account, book of accounts, voucher, receipt, letter, memorandum, paper of writing or any copy of or extract from any such document and also furnish information and returns verified in such manner as may be required in anyway relating to the execution of this contract or relevant for verifying or ascertaining cost of execution of this contract (the decision of the Site In charge on the question of relevancy of any documents, information or return being final and binding in the parties). The contractor shall similarly produce vouchers etc., if required to prove to the Site In charge, that materials supplied by him, are in

accordance with the specifications laid down in the contract.

(ii) If any portion of the work in a contract of value more than one crore of rupees be carried out by a sub-contractor or any subsidiary or allied firm or company, the Site In charge shall have power to secure the books of such sub-contractor or any subsidiary or allied firm or company, through the contractor, and such books shall be open to his inspection.

(iii) The obligations imposed by Sub Clause (i) & (ii) above is without prejudice to the obligations of the contractor under any statute rules or orders binding on the contractor.

53. Signature On Receipts For Amounts : Every receipt for money which may become payable or for any security which may become transferable to the Contractors under these presents, shall, if signed in the partnership name by anyone of the partners of a Contractor's firm be a good and sufficient discharge to the JK Agro in respect of the moneys or security purported to be acknowledged thereby and in the event of death of any of the Contractor, partners during the pendency of the contract, it is hereby expressly agreed that every receipt by anyone of the surviving Contractor partners shall if so signed as aforesaid be good and sufficient discharge as aforesaid provided that nothing in this Clause contained shall be deemed to prejudice or effect any claim which the JK Agro may hereafter have against the legal representative of any contractor partner so dying for or in respect to any breach of any of the conditions of the contract, provided also that nothing in this clause contained shall be deemed to prejudice or effect the respective rights or obligations of the Contractor partners and of the legal representatives of any deceased Contractor partners interse.

LABOUR

54. Wages To Labour : The Contractor shall be responsible to ensure compliance with the provision of the Minimum Wages Act, 1948 (hereinafter referred to as the "said Act" and the Rules made thereunder in respect of any employees directly or through petty contractors or sub-contractors employed by him on road construction or in building operations or in stone breaking or stone crushing for the purpose of carrying out this contract.

If, in compliance with the terms of the contract, the Contractor supplied any labour to be used wholly or partly under the direct orders and control of the JK Agro whether in connection with any work being executed by the Contractor or otherwise for the purpose of the JK Agro such labour shall, for the purpose of this Clause, still be deemed to be persons employed by the Contractor.

If any moneys shall, as a result of any claim or application made under the said Act be directed to be paid by the JK Agro, such money shall be deemed to be moneys payable to the JK Agro by the Contractor and on failure by the Contractor to repay the JK Agro any moneys paid by it as aforesaid within seven days after the same shall have been demanded, the JK Agro shall be entitled to recover the same from any moneys due or accruing to the contractor under this or any other Contract with the JK Agro.

55. Provisions Of Payments Of Wages Act : The Contractor shall comply with the provisions of the Payment of Wages Act, 1936 and the rules made thereunder in respect of all employees employed by him either directly or through petty contractors or sub-contractors in the works. If in compliance with the terms of the contract, the Contractor directly or through petty contractors or sub-contractors shall supply any labour to be used wholly or partly under the direct orders and control of the Site In charge whether in connection with the works to be executed hereunder or otherwise for the purpose of the Site In charge, such labour shall never the less be deemed to comprise persons employed by the contractor and any moneys which may be ordered to be paid by the Site In charge shall be deemed to be moneys payable by the Site In charge on behalf of the Contractor and the Site In charge may on failure of the Contractor to

repay such money to the JK Agros deduct the same from any moneys due to the Contractor in terms of the contract. The JK Agro shall be entitled to deduct from any moneys due to the contractor (whether under this contract or any other contract) all moneys paid or payable by the JK Agro by way of compensation of aforesaid or for costs of expenses in connection with any claim thereto and the decision of the Site In charge upon any question arising out of the effect or force of this Clause shall be final and binding upon the Contractor.

56. **Reporting Of Accidents :** The Contractor shall be responsible for the safety of all employees directly or through petty contractors or sub-contractor employed by him on the works and shall report serious accidents to any of them however and wherever occurring on the works to the Site In charge or the Site In charge's Representative and shall make every arrangements to render all possible assistance.

57. **Medical Facilities At Site :** The Contractor shall provide medical facilities at the site as may be prescribed by the Site In charge on the advice of the JK Agro in relation to the strength of the Contractor's resident staff and workmen.

58. **Provisions of Employees Provident Fund and Miscellaneous Provisions Act, 1952 :** The Contractor shall comply with the provisions of Para 30 & 36-B of the Employees Provident Fund Scheme, 1952; Para 3 & 4 of Employees' Pension Scheme, 1995; and Para 7 & 8 of Employees Deposit Linked Insurance Scheme, 1976; as modified from time to time through enactment of "Employees Provident Fund & Miscellaneous Provisions Act, 1952", wherever applicable and shall also indemnify the JK Agro from and against any claims under the aforesaid Act and the Rules.

59. **Labour Camps :** The Contractor shall at his own expense make adequate arrangements for the housing, supply of drinking water and provision of latrines and urinals for his staff and workmen, directly or through the petty contractors or sub-contractors and for temporary creche (Bal-mandir) where 50 or more women are employed at a time. Suitable sites on JK Agro land, if available, may be allotted to the Contractor for the erection of labour camps, either free of charge or on such terms and conditions that may be prescribed by the JK Agro. All camp sites shall be maintained in clean and sanitary conditions by the Contractor at his own cost.

DETERMINATION OF CONTRACT

60. **Right Of JK Agro To Determine The Contract :** The JK Agro shall be entitled to determine and terminate the contract at any time should, in the JK Agro's opinion, the cessation of work becomes necessary owing to paucity of funds or from any other cause whatever, in which case the value of approved materials at site and of work done to date by the Contractor will be paid for in full at the rate specified in the contract. Notice in writing from the JK Agro of such determination and the reasons therefor shall be conclusive evidence thereof.

61. **Payment On Determination Of Contract :** Should the contract be determined under sub clause (1) of this clause and the Contractor claims payment for expenditure incurred by him in the expectation of completing the whole of the work, the JK Agros shall admit and consider such claims as are deemed reasonable and are supported by vouchers to the satisfaction of the Site In charge. The JK Agro's decision on the necessity and propriety of such expenditure shall be final and conclusive.

62. The Contractor shall have no claim to any payment of compensation or otherwise, howsoever

on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of determination of contract.

63. **Determination Of Contract Owing To Default Of Contractor :** If the Contractor should :
- a. Becomes bankrupt or insolvent, or
 - b. Make an arrangement with of assignment in favour of his creditors, or agree to carry out the contract under a Committee of Inspection of his creditors, or
 - c. Being a Company or Corporation, go into liquidation (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or
 - d. Have an execution levied on his goods or property on the works, or
 - e. Assign the contract or any part thereof otherwise than as provided in these Conditions, or
 - f. Abandon the contract

SECTION – IV

(SPECIAL CONDITIONS OF CONTRACT)

SECTION-IV

SPECIAL CONDITIONS OF CONTRACT

Tender for: Insulation, Cold Room Doors & Docks, Refrigeration System & Ripening Equipment, Racking & Material Handling Equipment, Electrical Fittings & Cabling etc. and Fire Detection (Package 2) - Construction of Multipurpose Cold Storage and Ripening Chambers at Talab Tillo, Jammu (J & K)

PREAMBLE

- a) PMC/ Site In charge to J&K Agro Industries Corporation Ltd. (J K AGRO) for the above has been appointed.
- b) The special conditions of contract shall be read in conjunction with Conditions of Contract and amendments/corrections thereto. Where the provisions of special conditions of contract are at variance with above mentioned documents, these special conditions of contract shall prevail.

**Divisional Manager Member
Secretary JK Agro, Jammu**

SPECIAL CONDITIONS OF CONTRACT

1.0 Scope of work

The scope of work includes Supply, Installation, Testing & commissioning of : **Insulation, Cold Room Doors & Docks, Refrigeration System & Ripening Equipment, Racking & Material Handling Equipment, Electrical Fittings & Cabling etc. and Fire Detection (Package 2) - Construction of Multipurpose Cold Storage and Ripening Chambers at Talab Tillo, Jammu (J & K)**

The contractor will be required to execute the work in stretches/areas which are made available to him and may or may not be in continuous stretches as per annexed BOQ. Decision of Site In Charge shall be final in this regard and binding on the contractor. Contractor shall have no claim, if the stretches/areas are not available for the construction/repair at the same time, whenever extension of time is granted on valid reason.

1.1 The contractor will engage two experienced **Graduate Engineer** site engineers of concerned discipline on the project, who should have the full knowledge of work and is capable of getting executed the work and removing defects as pointed out by the engineer-in-charge. A recovery of **Rs.25,000/- per month** per site engineer will be made, if contractor fails to deploy the site engineers.

1.2 The contractor shall procure all construction materials well in advance so that there is sufficient time for testing of the materials and clearance of the same before incorporation in the works. In case untested material is used by the contractor and later on the same is found not meeting to specification requirement, then, the executed work with said material shall be dismantled and re-executed at the cost of contractor.

1.3 Before commencement of work, the contractor shall take levels and record them in prescribed record book. The levels taken shall be got verified from Site In charge/ Site In charge's representative.

1.4 Tenderer has to obtain statutory approvals from relevant authorities, co-ordinate and file all papers/applications (wherever required). JK Agro officials will sign relevant papers and application forms and also deposit the required statutory charges.

1.5 Tenderer has to supply, install, test and successfully commission all BOQ items.

1.6 Tenderer will ensure supply of all items as per JK State PWD/CPWD norms and concerned IS for that specific item.

1.7 The tenderer shall guarantee all the equipment offered for satisfactory performance for a period of 12 months from the date of commissioning and handing over the installation to JK Agro against defects arising out of faulty design, material & workmanship. The tenderer should make good all the defects free of costs during the guarantee period and replace or repair the defective equipment/parts free of cost promptly and satisfactorily.

1.8 The defects liability period will be 24 months after actual & final completion of work.

1.9 Security Deposit will be 10% of the contract value and will be released after completion of the defects liability period.

2.0 PERIOD OF COMPLETION

The work is required to be completed within time schedule from the date of issue of acceptance letter is given below: -

Total period of completion: 09 **months (Nine Months)** from the 15th day after date of issue of L.O.A.

2.1 The contractor shall stick to the final completion date and will be liable to action for any delay due to contractor as mentioned in Conditions of Contract for stage as well as overall completion of the work.

2.2 In case of termination of contract, available EMD, BG & Security with the department against the said contract will be forfeited.

2.3 In case contractor fails to furnish consent / acceptance of extension of time (EOT) for completion of work with LD or any other conditions in response to EOT granted and communicated as per Annexure-VII, but continues to execute the work, in such circumstances, EOT, as communicated, will be deemed to have been accepted by the contractor in totality.

3.0 **SAFETY PRECAUTIONS**

3.1 For work close to road, telephone line, power line (both underground and overhead) and structures, all precautions will be taken for ensuring that during the execution of the work, no damage is caused to the installation structures and also no obstruction is caused to the movement of trains.

3.2 The contractor will also ensure that no damage is done to the electrical cables, drainage system, water supply and any other services and/or structures.

3.3 Safety rules and safe working methods as **per Appendix "A"**.

4.1 **Delay or Deferments**

4.2 Simultaneously with the progress of this work, works on installation/erection of the various parts and plants of the other works will continue. The progress of works will have to be synchronized with such other works.

4.3 Where the Contractor has to work along with other agencies in and around the area allotted for his works, he shall execute all his works in complete **coordination and cooperation** with all such agencies so that at no time either his work or the works of other agencies is stopped or delayed. In case of any dispute in this regard the decision of J K AGRO or their representative will be final and binding on the Contractor. No claim for idle labour, plant and machinery under any circumstances will be entertained by the J K AGRO.

4.4 Contractor has to execute all works in complete coordination and cooperation with all activities confined to the area within the scope of this work, so as not to affect the operation of other activities under any circumstances. In case of any dispute in this regard, the decision of J K AGRO or their representative will be final and binding on the contractor. Contractor shall also note the work shall progress as per the phased development, if any.

5.0 **Measurements for Works/Record Measurements**

5.1 The contractor shall ensure that measurements for all work which may be partially or wholly hidden in the course of construction are duly recorded in the Measurement book before that portion of work becomes inaccessible for measurement.

5.2 For works running on account payments can be made on the basis of detailed measurements recorded in the measurement books for the actual work executed. The bills will be submitted by the contractor on the approved format (attached), and the date of submission of the bills will be considered as the date, the contractor signs the accepted bill which is to be forwarded by the Site In charge concerned for arranging payment. Whenever, there is likelihood of delay in recording detailed measurements for making running payment, without detailed measurements for works done at 75% of the total assessed value.

5.3 **Payment to be made by J K AGRO**

The contractor will submit running account bills of value, not less than 25% value of the contract amount towards the work done approved and passed by Site In charge whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the contractor.

5.4 For payment of Running Account Bills, the mandatory documents, like copy of paid challans of PF / ESI, Royalty, paid bills of water, electricity, copy of CAR & WC Policy, copy of labour license,

etc, shall be required at the time of Ist RA bill & final bill. For intermediate RA bills, above documents if not available due to reasons stated by contractor with undertaking to comply, may be relaxed by Engineer- in-charge. However contractor must comply the statutory and other provisions Contractor shall indemnify the J K AGRO against all losses / damages due to non-compliance of above provisions at intermediate stage of any.

5.5 The contractor will have to produce the Geo-tagged photographs of before, after and during the execution of the work for the processing of the bill.

6.0 **Procurement Storage, and Payment of Cement, Steel and bitumen, etc,**

6.1 Ordinary Portland cement, steel, bitumen & structural steel required for the work will be procured by the contractor from approved suppliers. The Ordinary Portland cement should conform to grade 43 (asper IS:8112) and /or 53 grade (as per IS:12269), reinforcement steel should conform to IS-1786 & IS-432, structural steel conforming to IS-808 and bitumen should conform to I.S. code 702 and 703.

6.2 The storage of cement should be done as per IS-4082-1977 (recommendation on stacking and storage of construction materials at site). Sheds for storage of cement will also be provided by contractor. All such sheds/store, after completion of work shall be removed by contractor at his own cost and site shall be cleared.

6.3 Each bag of cement must weigh 50 kg, subject to variation as per BIS code.

6.4 Proper daily record of cement, steel and bitumen consumption shall be maintained at site by Engineer-in-charge. The register shall be duly signed by both the Engineer-in-charge and the Contractor. In case concrete is being obtained from RMC plant, then, the record of cement of the same shall be kept based on the computerized receipt of mix proportion of each lot.

6.5 "Return of Empty Cement Bags:-

Cement issued to the contractor or procured by the contractor will be in gunny bags/paper bags/polythene bags. The empty gunny bags / polythene bags shall be the property of the contractor.

6.6 Payment for steel reinforcement shall be made on the basis of standard weight of the bars used as per approved drawings. In case weight of bars is more than or less than the standard weight but within the tolerance limit as specified in BIS, the payment will be restricted to lesser weight in case of steel having less weight than the specified and standard weight, in case steel having more weight than the specified.

6.7 For PWD/ SSR 2022 Schedule of rate as given in Bill of Quantity the payment for steel will be based on quantities of the materials consumed for the works actually executed, as calculated from drawings and specifications, in terms of the respective Schedule of Rates. **For other than schedule items, rates quoted by tenderer shall be complete item rate, i.e. include cost of all materials including cement, steel, bitumen, etc,**

6.8 No claim whatsoever shall be entertained by J K AGRO on account of delay in non availability of these materials in the market.

6.9 Cement, Steel and Bitumen shall be kept under double lock system in godown fixed with door. The key of one lock shall remain with the representative of the Site In charge at site of work and that of the other with the contractor or his authorized agent.

6.10 Clodding of cement and rusting of steel should be avoided to the maximum extent possible. For such clodding of cement and/or rusting of steel which may render the same unusable, the contractor shall be responsible to make good such quantities the loss at his own cost.

7.0 **TESTING OF MATERIALS**

7.1 Contractor will be required to establish a field laboratory. The setting of field laboratory for the works of value more than Rs.1 crore is a mandatory requirement. Contractor shall be responsible for setting up laboratory facilities, equipment and arranging technical manpower at their cost, as directed by

the PMC/Engineer-in-charge for conducting site/field test. All the equipment shall be BIS approved makes and will be got checked/ calibrated regularly. All equipment of the laboratory shall be kept in good working conditions. If contractor fails to provide field laboratory within one month of commencement of work, shall attract a penalty of Rs. 25,000 per month recoverable from the running bills. In all routine tests, which can be normally done in the field laboratory/in situ, testing charges will be borne by the contractor. In case of failure on the part of contractor to conduct field laboratory test satisfactorily, the tests shall be carried out in the a approved laboratory and the Payment of testing charges of such tests will be borne by the contractor.

7.2 Sample of material for testing will be supplied free of cost by the contractor, including its transportation to the approved test houses/laboratory, as directed by the Engineer-In- Charge or inspecting officials.

7.3 For outside testing, test of materials and stipulated samples shall be carried out by one of the following laboratories/ tests houses (1) IIT (2) NIT (3) National Test Houses (4) National Council of Cement & Building Material (5) Govt. Engg. College/National Accreditation Board Approved Lab (NABL), as per decision of the Project Incharge. The testing charges shall be borne by the contractor.

7.4 All Routine tests on various materials shall be carried out as per the mandatory tests lists. Testing of material shall be carried out as per mandatory test list of tender document at the cost of the contractor. Wherever if same is not specified then it will be carried out as per PWD/ SSR 2022/ MORTH/ BIS as per decision of engineering incharge which will be final and binding.

7.5 In addition to the tests required under above clauses thereof, the Site In charge or his representative may order tests to be carried out by an independent person appointed by him at such place or in such laboratory as he may determine in accordance with the appropriate clauses of relevant standard specifications and the cost of such tests shall be borne by the contractor.

7.6 Testing record shall be maintained as per standard testing Performa enclosed in contract document for proper testing and their record.

8.0 **Plant & Machinery Required for the Works**

8.1 It will be the responsibility of the Contractor to arrange all plant & machinery, trucks, vibratory, Roadroller, etc, required by him for execution of works.

8.2 The contractor will also arrange for getting permission (for their use) if required from local or other concerned authorities for use as well as for their transportation to site.

8.3 All expenditure incurred in this connection will be borne by the Contractor.

8.4 No plant or machinery will be issued on hire by the J K AGRO.

9.0 **Arrangement of Water for execution of works**

9.1 The contractor will have to make his own arrangements for obtaining water to be used for execution of the works.

9.2 J K AGRO may permit to contractor to install borewell at site at his own cost for execution of work. In this case contractor will ensure compliance of statutory requirements of the regulatory authority. After completion of the work, borewell with pump and its fittings in working conditions shall be handed over to J K AGRO free of cost.

9.3 All temporary or pucca bunds or diversion of water courses, nallahs, etc, shall be done by contractor's at his own cost and after obtaining permission of concerned local authorities, and the same shall be removed after completion of the works and area restored to original state.

10.0 **Arrangements for Electric connection, Lighting & other purpose**

10.1 If for reasons of urgency the work has to be executed at night, contractor shall make his own arrangement for illuminating the site. Nothing extra will be paid for doing works at night.

10.2 Contractor will have to make his own arrangements for arranging electricity if the same is

required for illumination purposes or for running of any plant or machinery and nothing extra will be paid for the same.

10.3 J K AGRO may supply electric power if available and charges will be paid by contractor.

11.0 Definitions & Interpretations etc, relevant to items of Schedule of Rates and Specifications.

11.1 Wherever there is any reference to Engineer, Dy. Chief Engineer, Divisional Engineer, Assistant Engineer, it shall mean the Engineer-Incharge / Consultant appointed by J K AGRO for the work.

11.2 Wherever there is a reference to I.S. Code/specifications or any other code, it shall refer to latest code with correction slips as in vogue on the date of tendering.

11.3 **Item rate** means the rate to be quoted against the specific item of the schedule of items provided in the tender document.

12.0 Maintenance after Completion

12.1 All works executed under this agreement shall be maintained by the contractor at his own cost for a period of **24 (twenty four) months** from the actual date of completion as per agreement.

13.0 Miscellaneous

13.1 Customary standards/local traditions will not be the criteria for the standards. All works shall be up to the PWD/ SSR 2022 standards and as ordered by Engineer incharge and where any doubt may exist the specifications as given in the BIS specifications should be followed.

13.2 J K AGRO may provide space for setting up construction plants, T & P, site office, laboratory, storage of material, labour, etc, free of cost if the surplus land is available with prior permission from the Engineer Incharge during the construction period of the project.

13.3 No areas outside work site/ depot will be made available to the contractor for storage of construction materials and construction of site office etc, and if required, contractor will make his own arrangement for the same by personal negotiation with the owners at his own cost.

14.0 Recovery of Royalty in case of materials quarried from J K AGRO's Land.

14.1 Without the sanction of the J K AGRO, no material of any kind such as sand, stone or moorum whether required for the performance of this Agreement or not, shall be quarried and/or collected from land belonging to or held by the J K AGRO.

14.2 As and when the Contractor quarries and/ or collects material from J K AGRO land for the purpose of supply of materials and/or of work under an Agreement based on special rates obtained for various items of work or supplies contractor shall be liable to pay applicable royalty to concerned authority at the rate prescribed by the State Government Authorities and in force during the period of contract.

15.0 Handling of Materials

15.1 No lead is payable on water for works done under any section of PWD Schedule of Rates or for the work done under any non-scheduled item Rate.

15.2 No extra payment can be claimed for carrying materials in extreme conditions of climate and weather and all precautions taken to protect materials by suitable coverings to prevent damage due to sun, rain and wind while carrying by carts or trucks.

15.3 It is the Contractor's responsibility to see that all J K AGRO materials entrusted to him are carried safely and expeditiously to the site of the work.

15.4 If J K AGRO materials are lost, stolen or damaged while in transit or under custody of the contractor, the cost of the same @ twice of the prevailing market rate will be recovered from the

Contractor's dues and Contractor will have no claim whatsoever on this account.

15.5 During execution of work, if J K AGRO materials, tools & plants (i.e., cables and pipelines etc, are damaged then same will be set right by contractor at his cost within a reasonable time as decided by the site Site In charge. In case contractor fail to rectify the damages caused during construction/ under their custody, the cost of the damaged material shall be recovered from the contractor @twice of prevailing

market from the contractor dues/ bills and contractor will not have any claim whatsoever on this account.

16.0 **Adherence to labour law and regulations**

16.1 The Contractors, who are working in the establishments through Contract Labour and/or employing labour themselves directly should get themselves registered with the Assistant Labour Commissioner concerned as required under Contract Labour (Regulation and Abolition) Act 1971 and obtain a license from the Assistant Labour Commissioner concerned and produce the same to Engineer – in-charge, in compliance to above and Condition of Contract.

16.2 **Employment of labour from scarcity area**

If the Government declares a state of scarcity of famine to exist in any village situated within 15 km of the work, piece worker/contractor shall employ upon such parts of the works as unskilled labour any person found suitable and certified to him by the Engineer-in-charge or by any person to whom the Engineer-in-charge may have delegated in writing, to be in need to relief and shall be bound to pay to such person wages not below the minimum which Government may have fixed in this behalf. Any dispute which may arise in connection with the implementation of this clause shall be decided by the JK AGRO whose decision shall be final and binding on the piece worker/ contractor.

17.0 **Provision of extra/additional items**

If the altered/additional work required to be executed as per J K AGRO's requirements, for which there are no established rates in Schedule of Rates, the same shall be payable as per provisions stated hereunder: -

- a) As far as possible the rates for such items shall be derived from agreed schedule of rates on pro-rata basis.
- b) If direct working out is not possible, the contractor shall be paid on the basis as under: -
 - (i) Material, labour either or both: Reasonable cost of materials plus reasonable cost of labour inclusive of tools, plants and machinery and plus 15% of so derived cost, to cover contractor profit, supervision, overheads, establishments, etc.
 - (ii) Site In charge's decision regarding reasonable labour cost and reasonable material consumption/and cost shall be final and binding on contractor.
- c) The rates can also be derived based on the LAR rate of similar items of same area or nearby area.

18.0 **Escalation (Price Escalation Clause/ PVC)**

18.1 No Escalation on account of any increase in price index in the price of materials, imposition of Goods and Service Tax or other tax etc. or increase of rates or imposition of levies etc. will be payable.

18.2 No price escalation shall be applicable even during the extended period for completing the works.

19.0 **Completion Drawings**

19.1 Completion drawings of all the completed works for showing the layout of the area with dimensions, slopes and details of building, reinforcements used, pavement, drain, cable trenches, machine foundations, etc, shall be prepared by the contractor at his own cost.

19.2 Contractor will supply **three copies** of completion drawings along with soft copy in CD /

Pen-drive with the final bill. In case contractor does not submit the completion drawing within **15 days** of information that the final bill is ready, an amount of **Rs.1 lakh** shall be deducted from the final bill.

20.0 Storage of inflammable articles: -

No inflammable materials, such as petroleum, oil, etc, within the meaning of the Indian Petroleum Act and Indian Explosives Act shall be stored at site or adjacent land until the approval of the J K AGRO and necessary license under the Act has been obtained by the contractor. All due precautions as required under the Acts shall be taken by the contractor.

21.0 Night Work: -

If the J K AGRO is however satisfied that the work is not likely to be completed in time except by resorting to night work, by special order, the contractor would be required to carry out the work even at night, without conferring any right on the contractor for claiming for extra payment for introducing night working. The decision of the Site In charge in this regard will be final and binding on the contractor.

22.0 Notice to Public Bodies: -

The contractor shall give to the Municipality, Police and other authorities, all notices that may be required by the law and obtain all requisite licenses for temporary obstructions, enclosures and pay all fees, taxes and charges, which may be livable on account of his own operations in executing the contract. He should make good any damage to adjoining premises whether public or private and provide and maintain any light, etc, required at night and no extra payment will be made on this account.

23.0 Plea of custom: -

The plea of 'Custom' prevailing will not on any account be permitted as an excuse for infringement or any of the conditions of contract or specifications.

24.0 Care of Staff: -

No guarantee will be provided by J K AGRO for accommodation of the contractor or any of his staff employed on the work. The contractor may be allowed to erect labour camps for housing the labour at or near the site of work on available J K AGRO's land. The contractor shall at his own cost make all necessary and adequate arrangements for importation, feeding and preservation of the hygiene of his staff. The contractor shall permit inspection at all times of all sanitary arrangements made by him by the Site In charge or his assistant or the medical staff of the J K AGRO. If the contractor fails to make adequate medical and sanitary arrangements, these will be provided by the J K AGRO and the cost thereof will be recovered from the contractor.

25.0 First aid: -

The contractor shall maintain in a readily accessible place first aid appliance including an adequate supply of sterilized dressing and sterilized cotton wool. The appliances shall be placed under the charge of responsible person who shall be readily available during working hours.

26.0 Damage from Accidents or floods or Tides: -

The contractor shall take all precautions against damages from accidents, floods or tide. No compensation will be allowed to the contractor for his tools, plants, materials, machines and other equipment lost or damaged by any cause whatsoever. The contractor shall be liable to make good the damages to any structure or part of structure, plant or material of every description belonging to the J K AGRO administration, lost or damaged by any cause during the course of contractor's work.

The J K AGRO will not be liable to pay to the contractor any charges for rectification or repairs to any damages, which may have occurred from any cause whatsoever, to any part of the new structures during

construction. No claims in this regard will be arbitrable.

27.0 Trespass: -

The contractor shall at all times be responsible for any damages or trespass committed by his agents and workmen in carrying out the work, unless such trespass is authorized by the Site In charge at site.

28.0 Variation in Quantities and Vitiatio: -

28.1 In case of variation in quantities, the vitiatio statement will be prepared. In case, there is vitiatio, then the vitiatio amount shall be recovered from the contractor's bill/security deposit.

29.0 Use of J K AGRO Materials secured with Government Assistance: -

29.1 Where any raw materials for the execution of the contract are procured with the assistance of Govt. either by issue from Government, stocks or purchases under arrangements made or permit(s) or licence(s) issued by the Government, the contractor shall hold the materials as trustee for the Government and use such materials economically and solely for the purpose of contract against which they are issued and not dispose off them without permission of the Government and return if required by the Government all surplus or unserviceable materials that may be left by him after completion of the contract or at its termination for any reason whatsoever on his being paid such price as Government may fix with the due regard to the condition of the materials. The freight charges for the return of the material according to the direction of the purchaser shall be borne by the contractor, in the event of contract being cancelled for any default on his part, the decision of Government shall be final and conclusive.

29.2 In the event of a breach of the aforesaid conditions, the contractor shall in addition to throwing himself open to action for contravention of terms of the licence(s) if the permit(s) and/or for original breach of trust be liable to account to Government for all moneys, advantages or profits resulting or which in the usual course would have resulted to him by reason of such breach.

30.0 Insurance for Works persons and property: -

30.1 Insurance for Works: -

The contractor at the scheduled date of start of work or **before 15th day after date of issue of LOA**, without limiting his obligations and responsibilities, shall insure the works at his own cost and keep them insured until the virtual completion of the contract against all acts of God including Fire, Theft, riots, War, Floods, etc, with a Insurance Agency approved by Insurance Regulatory and Development Authority (IRDA) in the joint names of the employer and Contractor (the name of the former being placed first in the policy) for the full amount of the originally awarded contract value irrespective of revised / modified contract value later on. Such policy shall cover the property of the J K AGRO and fees for assessing the claim and in connection with his services generally therein and shall not cover any property of the Contractor or of any sub contractor.

The Contractor shall deposit the policy and receipt for the premiums with the J K AGRO within 30 days from the date of signing the contract or commencement of execution of work, whichever is earlier, or unless otherwise instructed by the J K AGRO. In default of the Contractor insuring as provided above, the J K AGRO on his behalf may so insure and may deduct the premiums paid from any moneys due or which may become due to the Contractor. The Contractor shall, as soon as any claim under the policy is settled or the works reinstated by the Insurance Office should elect to do so, proceed with all due diligence with the completion of the works in the same manner as though the misfortune/accident had not occurred and in all respects under the same conditions of contract. The Contractor in case of rebuilding or reinstatement after accident shall be entitled to such extension of time for completion as the J K AGRO deems fit.

30.2 Insurance in respect of damages to persons and property: -

i) The Contractor shall be responsible for all injury to persons, animals or things and for all

structural and decorative damage to property which may arise from the operation or neglect of himself or of any approved sub contractor's or Employees, whether such injuries or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of this contract. The clause shall be held to include any damage to buildings, whether immediately adjacent or otherwise and damage to road, streets footpaths, bridges and works forming the subject of this contract by frost or other inclemency of the weather. The Contractor shall indemnify the J K AGRO and hold him harmless in respect of all and any expenses arising from any such injury or damage to persons or property as aforesaid and in respect of any claims made in respect of injury or damage under any Acts of government or otherwise and also in respect of any award of compensation of damage consequent upon such claims.

ii) The Contractor shall reinstate all damages of every sort mentioned in this clause, so as to deliver up the whole of the contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damage to the property of third parties.

iii) The Contractor shall indemnify the J K AGRO against all claims which may be made against the J K AGRO by the member of the public or other third party in respect of works in consequence thereof and shall at his own expense arrange to effect and maintain, until the virtual completion of the contract, **an Insurance Policy with Insurance Agency approved by IRDA in the joint names of the J K AGRO and Contractor against such risks and deposit such policy or policies with the J K AGRO from time to time during the currency of this contract.** The contractor shall similarly indemnify the J K AGRO against all claims which may be made upon the J K AGRO whether under the Workman's Compensation Act or any other statute in force during the currency of this contract or at common law in respect of any employee of the Contractor or any sub-contractor and shall at his own expense effect and maintain with an approved office a policy of insurance in the joint names of the J K AGRO and the Contractor against such risks and deposit such policy or policies with the J K AGRO from time to time during the currency of the Contract. The Contractor shall be responsible for anything which may be excluded from the Insurance policies above referred to and also for all other damage to any property arising out of an incidental to the negligent or defective carrying out of this contract. He shall also indemnify the J K AGRO in respect of any costs, charges or expenses arising out of any claim re- proceedings and also in respect of any award of or compensation of damages arising there from

iv) The Employer shall be at liberty and is empowered to deduct the amount of any damage, compensation costs, charges and expenses arising or accruing from or in respect of any such claim or damage of any sum or sums due to or become due to the Contractor including the Security Deposit.

v) If the Contractor fails to comply with the terms of these conditions, the Employer may insure the works and may deduct the amount of the premiums paid from any moneys that may be or become payable to the Contractor or may at the option, do not release running payment to the Contractor until the Contractor shall have complied with the terms of this condition.

30.3 ANY OTHER INSURANCE REQUIRED UNDER LAW OR REGULATIONS OR BY J K AGRO.

Contractor shall also carry and maintain any other insurance which he may be required under law or regulation from time to time. He shall also carry and maintain any other insurance which may be required by J K AGRO.

31.0 SITE OFFICE

Contractor shall have to provide temporary site office with requisite furniture & appliances and godown for storing/stacking construction materials at their own cost for which no extra payment will be made.

32.0 PF COMPLIANCE

It will be responsibility of the contractor to obtain separate code/identification No. for contractor's deposit of PF dues, if applicable with concerned authority directly. Copy of PF Registration / code no.

alongwith copy of PF paid Challans shall be submitted alongwith Running Account or Final Bill.

33.0 Recoveries/Withhold

33.1 In case of any technical deficiencies, lapses on account of non-compliance of PF/ESI, Insurance (CAR& WC Policies), labour license, or any other reasons not covered in any clause of tender documents etc., are noticed by the Engineer-in-charge/J K AGRO, then a sum as recommended or decided by PMC/Engineer-in-charge may be withheld, till rectification/remedy/compliance of the deficiencies.

33.2 Recoveries, if any, on account of uncovered period of insurance (CAR & WC Policies), defective work, losses to J K AGRO or any other liability not fulfilled by contractor etc., shall be effected from the contractor's bill/any other due (s) amount (i.e. Final Bill, Security Deposit & Performance Bank Guarantee, etc,)

34. The Contractor shall coordinate with various government departments/agencies and obtain all statutory approvals required for the carrying out the work under tender viz. Building Plan Sanction, Pollution NOC, Fire NOC, Forest Department Approval for removal of trees etc. JK Agro however will make all payments towards the statutory fees/ deposits etc to these departments/agencies.

35. Extension Of Time For Delay Due To Contractor :

- i) **Extension in time:** If the contractor shall desire an extension in time for completion of the works on the grounds of his having been un-avoidably hindered in its execution or on any reasonable ground certified as such by the Engineer-in-charge, he shall apply to the Managing Director JK AIDCL within 02 days of the date of such event. The Managing Director, JK AIDCL may on reasonable grounds therefore authorize such extension as in his opinion is necessary for completion of the works in its entirety.
- ii) **Penalty:** In the event of contractor's failure, neglecting declining or delaying the supplies / installation or in the event of any damage occurring or being caused or in the event of any default or failure in complying with any of the terms and conditions of the contract, the corporation shall with or without prejudice any other remedy available to it under any law for the time being in force in the:
 - a. Terminate the contract after 30 days notice.
 - b. Recover the amount of loss caused by damage failure or default including the consequential damage as may be determined by the department and/or
 - c. Recover the extra cost, If any, involved in allotting the contract to other party and/or.
 - d. Impose a penalty in form of liquidated damages on accounts of delay beyond the scheduled delivery period subject to 0.1% value of the contract per day and not exceeding 10% value of the contract and /or.
 - e. Forfeiture of security deposit/Performance guarantee

36.0 **Assignment Or Subletting Of Contract :** The Contractor shall not assign or sublet the contract or any part thereof or allow any person to become interested therein any manner whatsoever without the special permission in writing of the JK Agro. Any breach of this condition shall entitle the JK Agro to rescind the contract of these Conditions and also render the contractor liable for payment to the JK Agro in respect of any loss or damage arising or ensuing from such cancellation; provided always that execution of the details of the work by petty contractor under the direct and personal supervision of the Contractor or his agent shall not be deemed to be sub-letting under this clause. The permitted subletting of work by the Contractor shall not establish any contractual relationship between the sub-contractor and the JK Agro and shall not relieve the Contractor of any responsibility under the Contract.

37.0 Indemnity By Contractors : The Contractor shall indemnify and save harmless the JK Agro from and against all actions, suit proceedings losses, costs, damages, charges, claims and demands of every nature and description brought or recovered against the JK Agro by reason of any act or omission of the Contractor, his agents or employees, in the execution of the works or in his guarding of the same. All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the actual loss or damage sustained, and whether or not any damage shall have been sustained.

38.0 Force Majeure Clause : If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract shall be prevented or delayed by reason of any war, hostility, acts of public enemy, civil commotion, sabotage, serious loss or damage by fire, explosions, epidemics, strikes, lockouts or acts of God (hereinafter, referred to events) provided, notice of the happening of any such event is given by either party to the other within 30 days from the date of occurrence thereof, neither party shall by reason of such event, be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non-performance of delay in performance, and works under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of the Site In charge as to whether the works have been so resumed or not shall be final and conclusive, PROVIDED FURTHER that if the performance in whole or in part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 120 days, either party may at its option terminate the contract by giving notice to the other party.

39.0 Extension For Delay Due To JK Agro : In the event of any failure or delay by the JK Agro to hand over the Contractor possession of the lands necessary for the execution of the works or to give the necessary notice to commence the works or to provide the necessary drawings or instructions or any other delay caused by the JK Agro due to any other cause whatsoever, then such failure or delay shall in no way affect or vitiate the contract or alter the character thereof or entitle the contractor to damages or compensation therefor, but in any such case, the JK Agro may grant such extension or extensions of the completion date as may be considered reasonable.

40.0 Illegal Gratification : Any bribe, commission, gift or advantage given, promised or offered by or on behalf to the Contractor or his partner, agent or servant or, anyone on his behalf, to any officer or employee of the JK Agro, or to any person on his behalf in relation to obtaining or execution of this or any other contract with the JK Agro shall, in addition to any criminal liability which he may incur, subject contractor to the rescission of the contract and all other contracts with the JK Agro and to the payment of any loss or damage resulting from such decision and the JK Agro shall be entitled to deduct the amounts so payable from any moneys due to the Contractor(s) under this contract or any other contracts with the JK Agro.

41.0 Maintenance Of Works : The Contractor shall at all times during the progress and continuance of the works and also for the period of maintenance specified in the Tender Form after the date of passing of the certificate of completion by the Site In charge or any other earlier date subsequent to the completion of the works that may be fixed by the Site In charge be responsible for and effectively maintain and uphold in good substantial, sound and perfect condition all and every part of the works and shall make good from time to time and at all times as often as the Site In charge shall require, any damage or defect that may during the above period arise in or be discovered or be in any way connected with the works, provided that such damage or defect is not directly caused by errors in the contract documents, act of providence or insurrection or civil riot, and the Contractor shall be liable for and shall pay and

make good to the JK Agro or other persons legally entitled thereto whenever required by the Site In charge so to do, all losses, damages, costs and expenses they or any of them may incur or be put or be liable to by reasons or in consequence of the operations of the Contractor or of his failure in any respect.

42.0 **Post Payment Audit :** It is an agreed term of contract that the corporation reserves to itself the right to carry out a post-payment audit and or technical examination of the works and the final bill including all supporting vouchers, abstracts etc. and to make a claim on the contractor for the refund any excess amount paid to him, if as a result of such examination any over-payment to him is discovered to have been made in respect of any works done or alleged to have been done by him under the contract.

43.0 **Defects Liability Period:** The firm shall be bound for a period of **24 months** from the date of commissioning and handing over of job for satisfactory operation of the same and shall furnish a guarantee to this effect to the corporation. Any defects found in equipment or any part thereof, which may be caused by bad workmanship, use of inferior material or otherwise, or if in the opinion of the department, any repairs/ replacement are required to be made to the equipment the firm shall be liable to remove the defect/ or conduct repairs at his own cost and expenses within a period of 03days of the receipt of the notice from the corporation. In the event of failure on the part of the firm to remove these defects or make repairs within the stipulated period, the department may get the defects removed or repairs made by any other agency and the cost thereof shall be recovered from the firm.

44.0 The bidders are requested to visit the site at **Gole Pully, Talab Tillo, Jammu** to get acquainted with the nature and quantum of job.

Appendix "A"
SAFETY RULES

1. Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra labourer shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable and hand holds shall be provided on the ladder and the ladder shall be given an inclination not steeper than $1/4$ (one horizontal to four vertical).
2. Scaffolding or staging more than 3.5 meters above the ground or floor swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached bolted, braced and otherwise secured at least one meter high above the floor or platform of such scaffolding or staging and extending along the entire length thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swinging from the building or structure.
3. Working platform gangways and stairways should be so constructed that they should not sag unduly or unequally, and where the height of the platform or the gangway or the stairway is more than 3.5 meters above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in the Para above.
4. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 10 meters in length while the width between side rails in swung ladder shall in no case be less than 300 mm. for ladder up to and including 3.5 meters in length. For longer ladders this width should be increased by at least 20 mm. for each additional meter of length. Uniform steps spacing shall not exceed 300 mm. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials or any of the sides of work shall be so stacked or placed as to cause danger for inconvenience to any persons or the public.
The contractors shall provide all necessary fencing and lights to protect the public from accident, and shall be bound to bear the expenses of defence of every suit action or other proceedings at law that may be brought by any persons for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit action or proceedings to any such persons or which may with the consent of the contractor be paid to compromise any claim by any such person.
5. Demolition before any demolition work is commenced and also during the process of the work:-
 - a) All roads and open areas adjacent to the work site shall either be closed or suitably protected.
 - b) No electric cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electrically charged.
 - c) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion of flooding. No floor, roof or other part of the building shall be so overloaded with debris of materials as to render it unsafe.
6. All necessary personal safety equipment as considered adequate by the Engineer in charge should be kept available for the use of the persons employed on the site and maintained in a condition suitable for immediate use and the contractor should take adequate steps to ensure proper use of equipment by these concerned.
 - a) Workers employed on mixing asphaltic materials, cement and lime mortar shall be provided with protective goggles.
 - b) Of these engaged in white washing and mixing or attacking of cement bags or any materials, which is injurious to the eyes, shall be provided with protective goggles.
 - c) Those engaged in welding works shall be provided with welder's protective eye sight lids.
 - d) Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.

7. The JK Agro will be sole judge in the absolute discretion, of the fact that it is necessary to post any staff, that which of the staff will be suitable for the purpose, that what should be the wage and other allowance payable by the contractor for staff posted for the purpose. The JK Agro will have a right without prejudiceto other remedies to deduct the wages etc, of such staff from the bills of the contractor in respect of this contract of from any moneys or the contractor whatsoever available with the JK Agro. The contractor will be liable for any over payments under Workman Compensation Act on account of any injury sustained to JK Agro servant during that period.

8. When the work is done near any place, where there is risk of drowning, all necessary equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any persons in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during thecourse of the work.

9. Use of hoisting machines and tackle including their attachment anchorage and supports shall conformthe following standards or conditions: -

a)

i) These shall be of good mechanical construction, ground materials and adequate strength and free frompatent defect and shall be kept in good repair and in good working order.

ii) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength and free from patent defects.

b) Every Crane driver or hoisting appliances operator shall be properly qualified and no person under theage of 21 years shall be incharge of any hoisting machine, including any scaffolding.

c) In case of every hoisting machine and of every cabin ring, shackle, swivel and pulley block used in hoisting or as means of suspension safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with in the safe working load.

In case of a hoisting machine having a variable safe working load, each safe working load of the conditions under which it is applicable shall be clearly indicated. No part of any machinery or any gear referred to above inthis paragraph shall be loaded beyond the safe working load except for the purpose of testing.

d) In case of departmental machine, the safe working load shall be notified by the Site In charge. As regards contractor's machine, the contractor shall notify safe working load of the machineto the Site In charge whenever he brings any machinery to site of work, get it verified by the Site In charge.

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

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

12. These safety provisions should be brought to the notice of all concerned display on a notice board at a prominent place at the work spot. The persons responsible for compliance of the safety code shall be named therein by thecontractor.

13. To ensure effective endorsement of the rules and Regulations relating to safety precautions, the arrangements made by the contractor shall be opened to inspection by Labour Officer/Engineer in

charge of the Department of their representative.

14. Notwithstanding the above clauses from (1) to (13), there is nothing in these to exempt the contract from the operations of any other act or Rule in force in the Republic of India.

15. The Contractor shall follow strict safety norms at all times during work in progress. In case of failure of the contractor to comply with the strict safety norms, a penalty of Rs 5000/- per instance shall be levied on the contractor. The decision of Engineer In charge shall be final and binding on the contractor.

SECTION – V

(TECHNICAL SPECIFICATIONS)

SECTION V TECHNICAL SPECIFICATIONS

1.0 GENERAL

1.1 SCOPE

The scope of work includes: **“Insulation, Cold Room Doors & Docks, Refrigeration System & Ripening Equipments, Racking and Material Handling Equipment and Electrical Fittings, Electrical Supply Items & Fire Detection (Package 2) - Construction of Multipurpose Cold Storage and Ripening Chambers at Talab Tillo, Jammu (J & K).”** These specifications establish and define the materials and constructional requirements for the proposed works in brief.

1.2 EQUIVALENCY OF STANDARDS AND CODES, MEASUREMENTS & MATERIALS

1.2.1 Wherever reference is made in the contract to specific standards and codes to be met by the goods and materials to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the contract. In case, no reference is made for any particular work, relevant IS /BIS Codes will be followed.

1.2.2 Providing and operating necessary measuring and testing devices and materials including all consumables are included in the Scope of Work. No separate measurement or payment for testing the work shall be made but rates quoted for various items shall be deemed to include cost of such tests, which are required to ensure achievement of specified quality.

1.2.3 All materials shall be of standard quality, manufactured by renowned concerns, conforming to Indian Standards and shall have certification work from Bureau of Indian Standards as far as possible, unless otherwise approved by Site In charge. The contractor shall get all materials approved by Site In charge prior to procurement and use. The contractor shall furnish manufacturer's certificates, for materials supplied by him when asked for. Further to that he shall get materials tested from an approved Test House, if asked for by the Site In charge. The cost for all the tests and test certificates shall be borne by the contractor. No separate payment shall be made for the testing. The Site In charge shall have the right to determine whether all or any of the materials are suitable. Any materials procured or brought to site and not conforming to specifications and satisfaction of the Site In charge shall be rejected and the contractor shall have to remove the same immediately from site at his own expense and without any claim for compensation due to such rejection.

1.2.4 All goods and materials to be incorporated in the works shall be new, unused, of the most recent or current models and incorporate all recent improvements in design and materials, unless provided otherwise in the contract.

1.2.5 Wherever referred to in this tender document, only the latest revision of specifications, Codes of Practice and other publications of the Indian Standards shall be applicable.

1.3 WORK SPECIFICATIONS

The works will be executed, as indicated in the nomenclature of each items, Bill of Quantities, Drawings, Specification and Terms and Conditions read in conjunction with those given in this Contract. In the absence of any definite provision in the specifications, contained herein, reference may be made particularly to:

- a) For Pavements works - Latest MORTH / PWD/ SSR 2022 Specifications/Specified Specifications.
- b) For items/structure, covered by PWD: Latest specification for Materials & works shall be followed.
- c) SSR 2022 specification for all items pertaining to SSR 2022.
- d) IS code of practice for planning and reinforced concrete for general building construction (IS 456-2000 with latest correction slip/amendment)
- e) IS code of practice (IS 800 – 2007 with latest correction slip/amendment) revised 10th print 1981 for structural steel.
- f) IS 383-1970 with latest correction slips/amendment for fine and coarse aggregate.
- g) Any other IS code relevant in case the SSR 2022 standard specifications either refer to or the later is not clear.
- h) For all electrical work Latest SSR 2022 specifications with all correction slips will be followed.
- i) For items make – Contractor needs to get the approval from designated officer of JK Agro/PMC for the makes of all items to be supplied / utilized under the tender. The designated officer of JK Agro/ PMC shall have full authority to seek details/ test reports/ documentation in relation to the makes offered for supply by contractor. The designated officer of JK Agro/ PMC shall have full authority to reject any of the offered makes if found unsuitable/ not acceptable to standard makes & quality and this decision shall be binding on the contractor. In case any material is supplied without approval from the designated officer of JK Agro/PMC then it shall be automatically deemed as rejected.

1.3.1 The list is not exhaustive. The relevant, IS codes will be followed where the SSR 2022 / MORTH specifications, do not cover any item of works.

1.3.2 Wherever referred specifications are silent, the construction and completion of the works shall conform to relevant I.S Code of practice. In case of any dispute arising out of the interpretation of the above, the decision of Site In charge shall be final and binding on the contractor.

1.3.3 Copies of SSR 2022 Specifications can be obtained from SSR 2022, on payment from PWD office. ISI and other codes may be purchased from Manager Government of India Publication Branch, Patiala House, New Delhi and Director ISI Manak Bhawan, Bahadur Shah Zafar Marg, New Delhi or when available.

1.4 The excavation in foundation will include all shoring and protection works that may be required for ensuring safety during execution. Nothing extra will be paid for wet excavation or bailing out water. **The contractor will have to make his own arrangement for bailing out water including pumping.**

1.5 Contractor shall bring samples of all materials to be used on the work. One set of such

sample will be kept in the Engineer – incharge's office at site and other will be available with the contractor at site. Both the samples shall be jointly signed and sealed by Engineer-in-charge and contractor.

2.0 **Bituminous Works**

This specification covers earthwork, sub-grade, sub-base, and base-course and wearing course for concrete pavement as well as bitumen pavement. Specification for Road and Bridge works by MORTH shall be followed for pavement works, unless mentioned otherwise in this specification. Specification for WBM, WMM, GSBC, DBM, AC & Tack Coat, etc, shall be as per MORTH specification. Bituminous works shall be as per SSR 2022/MORTH Specification. Wherever the item is based on SSR 2022, SSR 2022 Specifications shall be followed.

2.1 **Site Clearance:**

Before the earthwork is started, the area coming under cutting and filling shall be cleared of shrubs, rank vegetation, grass, brushwood, trees and sapling of girth up to **30cm.** measured at a height of one meter above ground level and rubbish removed outside boundary. The roots of trees and saplings shall be removed to a depth of **60 cm.** below ground level or 30 cm below formation level or **15cm** below sub-grade level whichever is lower and holes or hollows filled up with the earth, rammed or leveled. Payment of this item of site clearance will be made as per relevant item in BOQ.

2.2 **Concrete work**

All mixed design concrete shall be executed by Concrete Batch Mix Plant of suitable capacity, to be installed by Contractor at site. In special cases RMC shall be allowed by Site In charge on written request of the contractor but the RMC should also be from a plant of appropriate capacity. **No extra payment shall be allowed on account of Concrete from batch mix plant or RMC.**

If at any stage of the work, during or after placing the concrete in the structure the work is found defective such concrete shall be removed and work be done with fresh concrete and adequate rigid forms at the cost of the contractor. The contractor shall be liable to bear the cost for the cement concrete thus dismantled. The construction work shall be done with proper and assured system of curing duly identified areas with dates marked in paint. In hot weather the contractor shall take relevant care to cover the work with wet gunny bags/hessian cloth or use continuous ponding of water on surface so as to keep the surface wet.

2.3 **Fine Aggregates**

Coarse sand of approved quality conforming to relevant IS code shall be used as fine aggregate. For cement concrete, reinforced cement concrete and concrete of any other type, sand / quarries dust shall be cleaned and absolutely free from dirt and no other deleterious material shall be permitted. Samples of sand to be used shall be approved by Engineer-in-charge or his authorised representative.

2.4 **Coarse Aggregate**

The coarse aggregate which may be either stone ballast or stone chips as directed, should be well graded and preferably machine broken and should conform to SSR 2022 / or relevant IS code and should be obtained from approved quarries. The stone should be free from soft thin elongated or laminated or decayed particles. The aggregates should be free from dust. Cleaning and washing, if necessary, should be carried out as per the direction of the Site In charge or his authorised representative.

The mention of any sources does not, however, absolve the contractor's for his / their liability to ensure

that the coarse sand, stone chips and ballast as may be required for the work strictly in accordance with Standard Specification. In case, these materials cannot be had according to specification, from these sources the contractor may bring the materials from any other sources by obtaining prior permission of the Engineer – in- charge, provided materials are according to standard specifications.

In addition to the routine tests, special tests on materials will be carried out whenever required by the Site In charge. The cost of the special test done will be borne by the contractor. Necessary facilities in the form of moulds, cones, scales materials, labour forecasting, curing, specimen and such other facilities as pre-requisite to any standard concrete tests will in any case be afforded by the contractor free of cost.

2.5 Form work and shuttering

For cement concrete in slabs, columns, beams, chajjas, etc, the contractor should use water proof plywood / steel shuttering plate sets as per the drawing. The steel plate should have smooth surface and should be free of bulge during the concreting. The entire shuttering should be water proof and conform to relevant IS Code. If however, the contractor wants to use wooden shuttering, he will have to use new planks and scanting, for fabrication of such shuttering so as to ensure smooth and leak proof surface.

2.6 Reinforcement

TMT bars of Fe 500 D should be used. Binding wire of approved quality shall be arranged by the contractor himself and the rates quoted for RCC work will include cost of binding wire and the process, of binding etc,

2.7 All works shall be done strictly in accordance with the approved drawings and no departure shall be made by the contractor without the order of the Site In charge in writing.

2.8 Paint

Standard brands of paints and primers as per relevant IS code or as specified, all labour and materials, cleaning materials, ladder scaffolding, tools plant and equipment's including brushes of approved / pattern of contractor expenses.

2.9 **Any other work not included in above paras should be executed as per relevant specifications and as directed by Engineer in-charge.**

3.0 Specification for laying of cable duct:

3.1 Specification for PVC pipe for cable duct shall be

| | | |
|---------------------------------|---|----------|
| Outside dia | - | 110mm |
| Tolerance on outside dia (Plus) | - | 0.4mm |
| Wall thickness | - | 7mm |
| Working Pressure | - | 10kg/sqm |

OR, diameter and working pressure of the PVC pipe as specified in the relevant BOQ item.

Jointing the PVC pipes shall be done using approved solvent cement as per approved method. Checking for correct alignment, straightness and smooth obstruction free passage shall be done by use of mandrels of approved design. Contractor must ensure that such mandrels are available at work site at all times during checking. Ducts not passing the requirement have to be redone at contractor's cost. All accessories for PVC for jointing separators for positioning shall be approved by Site In charge before execution of work.

Duct pipes shall be kept closed through a provision or stoppers at both ends of approved design. All cable ducts are to be provided with Nylon wire of approved size. These wireropes shall be kept fastened to the stoppers. No object shall be left in the pipes and it shall be ensured that dirt, animals etc, cannot enter the duct. Any dirt, which is, present in or ends up in the pipe attachment etc, must be removed.

3.2 All earthworks are to be done which is necessary for correct execution of work. Sufficient measures to be taken to prevent subsidence of neighboring areas, drainage, cable ducts supports, any other structures. Width of bottom of work ditch must be 25cm plus external diameter of pipe for depth up to 1m. For depth exceeding one meter an allowance of 5 cm per meter of depth for each side of trench shall be added to above width. Where more than one pipe are to be laid, the diameter shall be reckoned as the horizontal distance from outside of the outer most pipes.

Pipe shall be laid as shown in the drawing with sand layer below pipe in between and above pipe. Back filling must be done in layers of 20cm and soil must be compacted so as to achieve 97% of dry density at OMC as per IS: 2720 Part VIII Soil, rubble whichever not appropriate to fill up must be kept outside by the contractor. The back filling shall be done only after activities executed in them have been approved by Engineer in charge.

4.0 Brickwork

Bricks used shall have compressive strength not less than 75 Kg/sq cm. Other specifications shall be as per SSR 2022 Specifications. In case bricks of compressive strength 75/kg per sqm are not available and the structure is not of load bearing nature, then use of less compressive strength bricks can be relaxed as per PWD/ SSR 2022 specification, at reduced rate as worked out by the Engineer in-charge.

5.0 TESTING OF MATERIALS

5.1 All materials to be used in and on every part of the works shall be subjected, from time to time, such tests as given in List of Mandatory Tests or as required as per PWD/ SSR 2022 specifications. These tests/norms are the Minimum requirement and the Engineer-in-Charge may supplement these with additional tests/checks according to the site condition, at no extra cost. **All tests shall be performed at the expenses of the contractor as defined in Special Conditions of Contract.** The samples for tests shall be in all cases selected by the Engineer-in-charge and supplied by the contractor as part of the contract. If at any time, any material so tested, fails to meet the acceptance criteria, the same shall be removed from the site of works and other materials substituted therefore, but in the absence of any specified test/acceptance criteria, the decision of the Engineer-in-charge shall be final and binding as to whether the said material or materials shall be used on the works, or forthwith removed and other material substituted.

5.2 The contractor shall permit the Engineer-in-charge or his authorized representative to be present during any of or all the tests. The notification to the Engineer-in-charge that the work has been completed, the contractor shall make under the direction and in the presence of Engineer-in-charge such tests and inspections as have been specified or as the engineer-in-charge shall consider necessary to determine whether or not the full intent of requirements of the plans and specifications have been fulfilled. In case the work does not meet the full intent of the specifications it shall be rectified by the contractor at no extra cost and the contractor shall bear all the expenses for any further tests considered necessary.

5.3 The contractor shall arrange for conducting tests, specified in Quality Assurance Plan (QAP), in the presence of an officer, authorized by the Engineer-in-Charge. Full records of all tests conducted shall be maintained by the contractor in the format given by Engineer-in-Charge which will

be made available to the Engineer-in- Charge or to any officer authorized by him whenever required.

5.4 The purchaser representative shall be free to visit the manufacturer work at all reasonable times to witness and inspect the testing of equipment. It is the duty of tender to see that all equipments supplied are tested as per relevant IS specifications. The contractor shall furnish Manufacturer Test Certificate (MTC) for the routine and type test conducted on the equipment offered, if necessary the contractor shall arrange to conduct all the routine test at the manufacturer premises in presence of JK AGRO/PMC representative on receipt of material/equipment at site the tenderer shall offer equipment/material for inspection and get approved before installations.

6.0 Preparation of sub-grade

6.1 Where the pavement is to be laid on surface obtained after cutting the soil, the sub-grade for pavement shall be prepared as per specifications relevant to item in BOQ for achieving not less than 97% of dry density as per IS : 2720 Part VIII at no extra cost or otherwise as per the procedure mentioned hereafter.

The sub-grade shall be excavated to a depth of 0.5 meter, watered and compacted in layers not exceeding 250mm thickness, dressing to required camber and profile and consolidation with vibratory roller of 80 to 100 KN static weight so as to achieve not less than 97% of dry density as per IS : 2720 Part VIII. However, before relaying and compacting the loosened material the surface below this level shall be suitably consolidated as directed by the Site In charge but with a minimum six passes of vibratory roller. If the next 15 cm below this level does not have a relative compaction of 90%, it shall be compacted until not less than 95% dry density is obtained. Rate for work of this nature shall be covered in the item of preparation of sub-grade. Where the pavement is to be laid on fill and height of proposed fill is less than 0.5 meter, the procedure for sub-grade preparation as mentioned above shall be followed.

Where the pavement is to be laid on fill and the height of proposed fill is more than 0.5 meter, preparation of sub-grade is not required at these locations, however, in such locations original ground level shall be compacted by rolling as directed by the Site In charge as much as possible but with a minimum of six passes of vibratory roller of 80 to 100 KN static weight. No separate payment shall be made for this, as same shall be covered in item of earth work in excavation and / or filling.

6.2 Specification of GSBC

The work of sub base to be executed as per MORTH Specification of each layer not exceeding of **150mm thickness** to achieve not less than **98% MDD** as per IS-2720 Part-VIII.

6.3 Specification of WBM/WMM

The work of WBM to be executed as per MORTH Specification of each **layer not exceeding of 75mm thickness**.

6.4 Specification for base concrete

The specification covers laying of **M-10 concrete** in base course under concrete block pavement, over granular sub-base. The work of M-10 concrete for base course shall be executed as per section 601 of MORTH specification for Dry Lean Concrete (DLC) with modifications as mentioned below:-

- a. Design mix for M-10 concrete shall be as per IS specifications.
- b. Concrete mixing shall be done as with batching plant with facilities of mixing concrete by weight.
- c. Concrete shall be laid/placed by a **paver finisher** as mentioned in MOST / MORTH specifications. Before laying the concrete, surface shall be got inspected by Site

Engineer.

- d. Compaction shall be done using smooth wheeled vibratory roller of minimum 80 to 100 KN static weight.
- e. Curing should be done by covering the surface by gunny bags / hessian or by providing bund over the concrete surface with standing water on top surface of concrete as per MORTH specification.
- f. After the end of days work, the edge of the concrete is to be provided with such shuttering so that clear and straight edge are available on the next days.
- g. The cement content of M-10 concrete shall not be less than **150 kg per cum.**

6.5 **Specification for Pavement Quality Concrete (PQC)**

The work of PQC pavement for road work shall be executed as per latest PWD/ SSR 2022 Specification and minimum cement content shall **not be less** than as specified for design mix cement concrete. However if higher grade and of concrete is to be executed excess / less cement used as per design mix shall be payable / recoverable separately as per relevant BOQ item.

6.6 **Specification for Kerb Stone**

The work of Kerb Stone of specific grade cements concrete to be executed as per latest PWD/ SSR 2022 Specification. The Kerb stone shall be factory machine made with Strong Vibratory compaction and exposed concrete finished. No site production shall be allowed. Repaired, plastered & damaged Kerb stone shall not be allowed

WORK SPECIFICATIONS

Ambient Site conditions:

Altitude : 1073 mtr above sea level

Max. ambient temperature: 40°C

TECHNICAL CONDITION AND SPECIFICATION FOR ELECTRICAL WORKS

1. Tender Drawings and Construction Drawings:

1.1 These drawings are meant for Tenderer's guidance only. –Approval for Construction drawings will be furnished to the contractor during the progress of work to supplement the bid drawings. Construction drawings will be revised and fresh copies issued to the contractor time to time to incorporate any change to be adopted in the work as per final design to suit any change to be adopted in the work as per final design to suit any condition encountered during the progress of work. Hence, Approved for construction drawings will be furnished progressively during the progress of the work broadly conforming to construction schedule.

1.2 LT main panel, other major equipments, other distribution board drawings and cable route shall be submitted by the contractor for approval of consultant before starting fabrication, manufacture.

1.3 Details shown either on the drawings or stated in the specification shall prevail upon drawings in case of doubts. However, in case of ambiguity, the more stringent shall be applicable.

1.4 EARTHING

Earthing shall be carried out as per IS - 3043 code of practice for earthing with latest amendments and as per specification and site requirement.

2.0 GUARANTEE

The tenderer shall guarantee the equipment offered for satisfactory performance for a period of 24 months from the date of commissioning and handing over the installation to the employer against defects arising out of faulty design, material & workmanship. The tenderer should make good all the defects free of costs during the guarantee period and replace or repair the defective equipments/parts free of cost promptly and satisfactorily.

3.0 INSPECTION & TESTING

The purchase representative shall be free to visit the manufacturer's works at all reasonable times to witness and inspect the testing of equipment's. It is the duty of the tenderer to see that all the equipment supplied are tested as per relevant IS/BS specification. The contractor shall furnish three copies of manufacturer test certificate for the routine and type test conducted on the equipment offered. If necessary, the contractor shall arrange to conduct all the routine tests at the manufacturer's premises in presence of Site In charge. On receipt of the equipment/materials at site the tenderer shall offer equipment/materials for inspection of Site In charge and get approved before installation.

4.0 PRE-COMMISSIONING TESTS OF EQUIPMENT

LT switchgear, Transformer, servo stabilizer, LT cables and DG set shall be subjected to the pre-commissioning tests as per approved Performance by employer. The pre-commissioning test report shall be sent to the consultant for approval for electrical installation/license for release-sanctioned load.

5.0 APPROVAL OF DRAWINGS

The drawings of LT Panels, Voltage stabilizer, DG set and cable layout shall be offered by the tender for approval and manufacturing/laying of these items can be taken in the hand only after the approval of the drawings by Site In charge. The tenderer shall also supply three copies of approved drawings for LT switchgear and transformers, servo stabilizer, DG set (both the dimensional and schematic) along with 03 copies route drawings and earthing positions etc.

6.0 The contractor shall provide all kind of facilities for inspection of the works by the employer.

7.0 The electrical work shall conform to CPWD specifications for external with up to date amendments and for internal electrification works with up to date amendments.

TECHNICAL SPECIFICATION FOR LT PANEL**1.0 Scope of Supply:**

The LT cubical panel boards shall be IP44, metal enclosed, floor mounted, free standing, front operated, rear flush type suitable for operation on 433 V, phase, 4 wire+E, 50 Hz system conforming to relevant IP protection for external/internal atmosphere as per BOQ item. The LT panel shall be bolted structure, readily extensible on both sides by addition of electrical sections after removal of the end covers. The LT panel board shall in single tier formation for the incoming feeders and outgoing ACB feeders. MCCB, MCB feeders can be mounted in multitier configuration. The height of the switchboard shall not exceed 2250mm including the height of the base frame. However, the operating height shall not exceed 1800mm from finished floor level. All sheet steel material used in the construction of the switchboard should be 2.00 mm thick CRCA sheets for load bearing members and 1.6 mm for non load bearing members and should be powder coated. Touch up paint shall however be applied before handing over of the installation after completing the job at site. Danger notice plates shall be provided at suitable locations. Necessary lifting hooks/angles shall be provided in each panel as required.

- 2.0 The entire LT panel shall be factory assembled conforming to IS-8623. Cable entry shall be from top of the LT panel as it is installed at +4.5 Mtr level from the finished floor level . Terminal shall be provided in the switchboard to suit the number and size of copper /aluminum conductor cable as specified in the schematic diagram. Generous cabling space shall be provided with the position of the cable gland and terminal such that the cables can be easily and safely terminated. An earth bus bar with two earthing cable eyes shall be provided for connection to the main earth. The earth bus bar shall run throughout the length of the switchboard. Vertical earth bus also shall be provided, wherever required
- 3.0 While designing the panel, multitier formation of feeders should be considered except for ACB's Front rear door and top plates fitted with high quality gasket with fasteners designed to ensure proper compression of the gaskets. When covers are provided in place of doors, generous overlap shall be assured between sheet steel surfaces with closely faced fasteners to preclude the entry of dust. Sheet steel/hylam shrouds and partitions shall be of minimum 1mm thickness. Sheet steel work forming the exterior of the switchboard shall be smoothly finished leveled and free from burrs etc. and the corners should be rounded. The apparatus and circuits in the panel shall be so arranged so as to facilitate their operation and maintenance and at the same time ensure necessary degree of safety.
- 4.0 Minimum 350 mm size cable chamber shall be provided.
- 5.0 BUSBAR chamber shall be provided of 350mm size minimum and should also ensure sufficient clearance as per IE rules and CPWD Specification.
- 6.0 A base channel of appropriate thickness shall be provided at the bottom. At least 250mm space shall be provided above channel in which no switchgear shall be fixed.
- 7.0 All doors and covers providing access to power equipment shall be provided with tool operated fasteners and or suitable door interlock to prevent unauthorized operation. All doors of the switchgears shall be earthed independently.
- 8.0 The bus bars shall be of high conductivity electrolytic grade copper suitable for electrical purposes and of uniform cross section having a rating as per BOQ item for main bus bars and for neutral bus bars. The bus bar sizes shall be as per CPWD table of size calculation of bus bars and the clearances between bus bars has to be maintained as per CPWD specifications. Copper bus shall be suitably insulated with heat shrinkable sleeves/epoxy coating/insulating tape to withstand the test voltage of 2.5 KV.

- 9.0 Bus bars for the termination of outgoing cables should be extended in a manner to facilitate ease of termination. The bus bars making arrangement of switchgear, connection and auxiliary wiring shall conform to IS-375. The bus bars shall be supported on fiberglass insulators placed sufficiently close to prevent the bus bars sag and to effectively withstand the electro-dynamic stresses occurring the event of a short circuit. All bus bars and vertical risers shall be color coded for identification.
- 10.0 Engraved plastic labels shall be provided indicating the feeder details. The LT panel shall be provided with voltmeter 0-500 volts with 3 way on and off selector switch, ammeter of appropriate range with selector switch as per the bill of material in the tender. All metering equipments shall be of digital type.
- 11.0 The switchboards shall be routine tested at the manufacturer works as per IS-8623 1977. The equipment shall comply with the latest Indian Electricity Rules and Indian Electricity Act. The indicating lamps shall be of LED type.

Note :- The main LT Panel should be with necessary interlocking arrangement for load changeover etc. as per the relevant BOQ item. Where ever ACB"s are mention it shall be of Micro Processor Controlled type with electrical draw out facility.

All MCCB"s exceeding 125 amp. Capacity shall be Micro Processor based.

The panel shall be from approved panel manufactures as given in the approved make and shall be CPRI approved also

LT Panels shall be from approved manufacturers having CPRI test certificate.

Prior approval of the LT Panel manufacturer shall be obtained before starting of Fabrication.

Approved list of Materials/Equipments/Accessories

| S.No. | Equipment | IS No. | Approved Makes/ Manufactures |
|--------------|---|--------------------------|---|
| 1 | LT Panel | Relevant IS | Neptune, Advance, C&S, SMA Power/ Controls & Contracts Pvt. Ltd /Risha Control Engineers Pvt. Ltd./ |
| 2 | MCCB | | L&T, Siemens, C&S, GE, Crompton/Schnieder/ABB/Indo-Asian/Hager/Legrand/Havells |
| 3 | Floodlight /light fittings | -do- | Bajaj, Crompton, Phillips |
| 4 | High Masts/Street Light Poles | | Bajaj, Crompton, Valmont, Phillips |
| 5 | XLPE insulated, PVC Sheathed Alu. Conductor armoured/ un- armoured power cables (HT & LT) | ISI 7098 (Part I) | M/s Havells , M/s Fort Gloster M/s ICL/Gem Cab, universal, polycab, KEC/KEI, Grandlay |
| 6 | Copper conductor cables | | Havells/Standard/Finolex/Gem Cab, universal, polycab, KEI |
| 7 | Cable joints for XLPE LT & HT | | Raychem, M-Seal |
| 8 | Measuring instruments (Digital) | 1248 and 6236 latest | AE, Capital, Neptune, MECO, KAPPA, L&T, ABB, Risha Control |
| 9 | Selector Switch | To relevant ISS | Control Switch Gear/Kaycee/L&T |
| 10 | Indicating lamps (LED TYPE)/Push Buttons | -do- | Binay/Schneider/L&T/HPL |
| 11 | Contactors | -do- | L&T/ABB/Schnider/Siemens/Indo-Asian |
| 12 | MCB-DB's, ELCB MCB-ISOLATOR, RCCB etc. | | MDS/ Hager , legrand, ABB/Indo-Asian, Siemens, Schneider, L&T |
| 13 | Instrument Transformer | | AE, Kappa, Alsthom or as per OEM standard |
| 14 | Diesel Engine | | Cummins/Kirlosker/Kirlosker Green/ KOEL/Caterpiler/Greaves/KEC/ Sudhir |
| 15 | Alternator | | AVK/Stamford/KEC/Crompton Greaves/ KOEL/Kirlosker Green |
| 16 | Cable Glands | Relevant IS | Comet/Jainson/Stepwell/Braco/ dowels |
| 17 | Cable lugs coper | Relevant IS | Dowells/Jainson |
| 18 | Distribution Boards | Relevant IS | Hager/standard/Legrand, ABB, Schneider, Siemens, L&T |
| 19 | Battery | Relevant IS | Exide, Standard Feruk/Cummins |
| 20 | Transformer | As per latest IS/IS-1180 | Kirloskar, Indian Transformer (Gurgaon) Kanohar/AMCO/ KOTSONS/Crompton/MEIL |
| 21 | HT Panel | Relevant IS | AREVA/Kirloskar/Crompton/ Tricolite/Adlec/ABB/Schnider/GE |

| | | | |
|----|--|-----------------------------|---|
| 22 | Vacuum Circuit Breaker | Relevant IS | Kirloskar/AREVA/Crompton/GE ABB/Schnider/ Indo-Asian |
| 23 | Relay | Relevant IS | ABB/Siemens/L&T/English Electric/ Areva |
| 24 | Capacitors | Relevant IS | Neptune Ducattai/ Siemens/Matrix/ABB |
| 25 | LED fittings | Relevant IS | Crompton/Philips/Bajaj/Orient/Insta Power/Syska/Havells |
| 26 | Ceiling fans/Exhaust Fan | Relevant IS | Crompton/Havells/GE/Orient/Bajaj |
| 27 | TELEPHONE / T.V. Cables | | DELTON/ FINOLEX/HAVELLS/ POLYCAB/ KEI/GEMSCAB |
| 28 | TELEPHONE & T.V. ACCESSORIES/SWITCH/SOC KETS | Relevant IS | NORTH-WEST/ LEGRAND/ ABB/ MK/ HAVELLS/ MDS/L&T |
| 29 | INDUSTRIAL SOCKETS & PLUGS | Relevant IS | L&T/ SIEMENS/ SCHNEIDER/ CROMPTON/ LEGRAND/ HAGER |
| 30 | Reefer Plugs and Sockets | Relevant IS | Mennekes, Bals, Hensel |
| 31 | CAT - 6 CABLES | Relevant IS | DELTON/ FINOLEX/HAVELLS/ POLYCAB/ KEI/GEMS CAB |
| 32 | TELEPHONE TAG BLOCKS | As per latest IS/IS-1180 | MK / CLIPSAL / LEGRAND/ |
| 33 | MODULAR RANGE OF SWITCHES, SOCKET | Relevant IS | HONEY WELL / LEGRAND / CRABTREE / HAVELLS/GE/ MK/ ABB/ INDO-ASIAN |
| 34 | EXHAUST FAN | Relevant IS | CROMPTON GREAVES/KHAITAN/ GE/ HAVELLS |
| 35 | POWER CONTRCATORS | Relevant IS | L&T/ ABB/ SIEMENS/ SCHNEIDER/ INDO-ASIAN |
| 36 | INDICATING LAMPS | Relevant IS | SIEMENS/ MECO/ L&T/ VAISHNO/ AE |
| 37 | PROTECTION RELAY | Relevant IS | SIEMENS/ ABB/ L&T/ ALSTOM/ GE |
| 38 | CFL | Relevant IS | OSRAM/ PHILIPS/ WIPRO/ CROMPTON GREAVES |
| 39 | METAL CLAD SOCKET OUTLET | Relevant IS | LEGRAND/ GE/ L&T/ MDS/ HAVELLS |
| 40 | GI PIPE | Relevant IS | TATA/JINDAL |
| 41 | SPLIT AIR CONDITIONERS/VRV | Relevant IS | DAIKIN/BLUESTAR/HITACHI/VO LTAS/CARRIER |
| 42 | FIRE ALARM & DETECTION SYSTEM | Relevant IS | NOTIFIER/HONEYWELL/TYCO/ SYSTEM SENSOR |
| 43 | Music System | Relevant IS | AHUJA/PHILIPS/NATIONAL PANASONIC |
| 44 | Fire Alarm and Control Panel | Relevant IS | Edwards/ Tyco/ Honeywell/ Notifier/ Siemens/ Apollo/ Rockwell/ |

| | | | |
|----|--|-------------|---|
| 45 | Repeater Panel | Relevant IS | Edwards, Tyco/ Honeywell/ Notifier/ Siemens/ Apollo/ Rockwell |
| 46 | Multi-criteria/ Smoke/ Heat Detectors | Relevant IS | Edwards, Tyco/ Honeywell/ Notifier/ Siemens/ Apollo/ Rockwell |
| 47 | Manual Call Point | Relevant IS | Edwards, Tyco/ Honeywell/ Notifier/ Siemens/ Apollo/ Rockwell |
| 48 | Hooters | Relevant IS | Edwards, Tyco/ Honeywell/ Notifier/ Siemens/ Apollo/ Rockwell |
| 49 | Control Module/ Monitor Module/ | Relevant IS | Edwards, Tyco/ Honeywell/ Notifier/ Siemens/ Apollo/ Rockwell |
| 50 | Fault Isolator | Relevant IS | Edwards, Tyco/ Honeywell/ Notifier/ Siemens/ Apollo/ Rockwell |
| 51 | Fire Alarm Panel & Detection System(conventional type) | Relevant IS | Agni, National Fire Security System, Soft chip |

Note:

Above makes of equipment are approved subject to their meeting the specifications. The contractor, however, shall seek approval of specific make from Engineer In-charge before commencing the work. The decision of Engineer in-charge shall be final and binding on the contractor in this respect.

Items that are not covered in the above list and are required for execution shall be procured with the approval of Engineer Incharge. The decision of Engineer Incharge shall be final and binding on the contractor in this respect.

Specification for water-cooled Diesel Engine Driven alternating current generating sets (400KVA) output:**1. SCOPE:**

This specification covers design, manufacture and supply of diesel engine driven A.C generating set. The generating set shall be complete with accessories, auxiliaries and control panel etc. the specification covers DG sets with control panel of AMF type and non-AMF type. Unless otherwise specifically mentioned DG sets with control panel of AMF type are to be supplied.

Any equipment not specifically mentioned herein but essential for completeness of the equipment may also be supplied. The DG sets offered by the tenderer shall be with approved equipment to ensure reliable and satisfactory performance. The DG sets shall be equipped with diesel engine and alternator of approved make only.

2. SITE CONDITIONS:

The set shall be working as single unit for catering to mixed load comprising electrical power and for charging battery average power factor of load being 0.8 lagging. The set should be suitable for operational at the following site conditions:-

| | | |
|-----------------------------|---|-------------------------|
| Height above sea level | = | 1073meter |
| Maximum ambient temperature | = | 50 degree cel. Relative |
| Humidity | = | 60% |
| Minimum ambient temp | = | 3 degree cel. |

The conditions prevailing at site shall be applicable

3. RATED POWER OUTPUT:

3.1 The Diesel generating set shall be capable of delivering continuously (on 24 hours basis) power output at 1500 rpm at site conditions specified under clauses 2 of this specification and the engine shall conform to IS : 10000/BS 5514.

3.2 The output available from diesel engine under site conditions should be specified.

3.3 The diesel engine shall be capable of working on 10% over load for one hour in any 12 hours running.

4. OIL ENGINE:

The diesel engine shall be cold starting, vertical direct injection 2/4-stroke cycle, water cooled (Through Hear exchanger/radiator) electric battery start directly coupled to the alternator on a combination base plate through a flexible coupling.

4.1 A suitable extension pipe shall be used with exhaust air chest so that the silencer can be mounted.

4.2 A fuel tank for holding the fuel oil with a capacity as per OEM Standard of the approved DG Set manufacturer shall be provided.. The fuel piping shall be designed as to be free from leakage and air locks. The fuel tank shall be supplied with a level gauge to indicate the oil level in the tank.

4.3 The engine shall be required to operate on Diesel Fuel oil grade A to IS: 1450

4.4 Governor the engine shall be supplied with the governor to maintain the engine speed at varying loads with $\pm 3\%$ of the rates speed.

- 4.5 The engine shall be complete with standard accessories and protective device including the followings. The accessories to be provided as per approved manufacturer's standard.
- i) Heavy duty air cleaner
 - ii) Radiator/heat exchanger as engine manufacture specification
 - iii) Fan for radiator (in case of radiator)
 - iv) Lubricating oil filters
 - v) Fuel oil filters
 - vi) Fuel injection equipment with governor to control the engine speed up to $\pm 3\%$ under varying load.
 - vii) Engine speed control unit (as per approved manufacturer specification)
 - viii) Sump
 - ix) Thermostat
 - x) Safety control against low lub. Oil pressure, high cooling water temperature and engine over speed.
 - xi) Fly wheel to suit flexible coupling
 - xii) Exhaust silencer
 - xiii) Lub oil cooler and water pump
 - xiv) The Fuel tank can be inbuilt in the acoustic enclosure.
 - xv) Corrosion inhibitor is to be provided along with coolant
 - xvi) Self starter for electric start system with battery of adequate capacity (12V for non AMF and 24V for AMF set)
 - xvii) Engine control panel comprising of
 - xviii) Oil pressure gauge
 - xix) Water temperature gauge
 - xx) Ammeter
 - xxi) Hour meter with RPM indicator
 - xxii) Push button for starter /key switch starter
 - xxiii) Pilot lamp
 - xxiv) Battery charging dynamo(in case of non AMF Panel)
 - xxv) Tool kit complete (as supplied by engine and alternator manufacturers)
 - xxvi) Anti vibration mounting (make Dunlop) or as per OEM standard
 - xxvii) Battery charger from 230V AC supply
 - xxviii) Acoustic enclosure

Note :

Modification in the above accessories as per approved manufacturer recommendations on account of technology improvement by manufacturer shall be considered for approval.

5. ALTERNATOR:

The alternator shall be self exciting brushless, copper wound self regulating with screen protected enclosure suitable for feeding 415V 3PH 4 wire 50 Hz AC system with neutral point brought out. The alternator shall confirm to BS-5000/IS: 4722 and winding shall conform to Class H insulation. Voltage regulation shall be $\pm 5\%$ of the rated voltage under varying load.

6. (a) CONTROL PANEL (for Non AMF/ AMF type set)

The control cubicle shall be floor mounted or acoustic enclosure mounted type fabricated construction made of sheet steel, provided with removable side panels and hinged front panel for easy accessibility. The control panel should be provided with all standard control accessories, protection devices as per the manufactures specification and as mentioned in the BOQ.

6. (b) Acoustic Enclosure

Acoustic Enclosure shall be fabricated as per latest CPCB norms and OEM standards fabricated with

mm/1.6mm Steel Sheet, Insulation, Painting etc. complete as required.

7. TESTS:

Owner reserves the right for inspection/testing of Generators Set, complete with acoustic enclosure at the maker's works for satisfactory performance of the Set as per latest IS Specifications,

- a) Guaranteed fuel consumption
- b) Over load capacity
- c) Proper Operating of protective devices provided for safety of the generating set
- d) The test certificates shall be furnished by the agency before dispatch of DG set for Owner's scrutiny

8. INSTRUCTIONS MANUALS AND CATALOGUES:

Triplicate copies of operator's guide, manuals maintenance schedules, repair/overhaul instructions for the complete equipment shall be supplied by the supplier.

9. FOUNDATIONS:

The triplicate copies of foundation drawings, instructions shall be supplied by the suppliers. Scope of work is including construction of suitable foundation as per the drawing of OEM.

The Scope of Works includes Civil foundation work as per DG Set manufacturer specifications and drawing.

All required modifications in DG Set to comply with CPCB II revised norms shall be incorporated.

10. GUARANTEE:

The equipment shall be guaranteed for a period of 12 months from the date of commencement in service or 2500 hrs. whichever is earlier.

Approvals

- Obtaining necessary permission from SEB for installation and operation of DG sets.
- Obtaining statutory approvals from Chief Electrical Inspector, of the State Government/ CEA Approval certificate from Pollution Control Authorities for Acoustic enclosure of the DG Set

11. INSTALLATION AND COMMISSIONING

All consumables required for commissioning of DG set at site and for continuous running of 6 hrs of DG Set after commissioning shall be included in the scope of work.

SPECIFICATION FOR TRANSFORMER
DESIGN CRITERIA

The transformers will be suitable for outdoor use conforming to the ambient conditions of the site and will be used to supply power from 11 KV System. The transformer shall be capable of continuous operation at specified rating under the following condition:

- a. Voltage variation (+5%)-(-5%) in 2.5% steps
- b. Frequency variation +5%
- c. Combined voltage and frequency variation (absolute sum) 10%

The transformer shall be capable of withstanding the short circuit stresses due to a terminal fault on one winding with full voltage maintained on the other winding for minimum period of three (3) seconds.

The transformer shall be free from anything hum or vibration. The design shall be such as not to cause any undesirable interference with radio or communication circuits.

SPECIFIC REQUIREMENTS

Tanks shall be of all welded construction and fabricated from good commercial grade low carbon steel of adequate thickness. All seams shall be double welded.

The tank wall shall be reinforced by stiffener to ensure rigidity so that it can withstand without any deformation (a) mechanical shock during transportation and (b) oil filling by vacuum.

All removable covers shall be provided with weatherproof, hot oil resistant, resilient gaskets. The design shall be such as to prevent any leakage of water into or oil from the tank.

Each transformer tank shall be provided with one set of bi-directional rollers for rolling the transformer parallel to either center line.

Jacking pads, lifting eyes and pulling lugs shall be provided to facilitate movement of the transformer. All heavy removal parts shall be provided with eyebolt for ease of handling.

Manholes / hand holes of sufficient size shall be provided for access to leads, windings, bottom terminals of bushings and taps.

Core & Coils

The transformer may be of core or shell type. The core shall be built up with high grade, non-aging, low loss, high permeability grain oriented cold-rolled silicon steel laminations specially suitable for core material.

The coils shall be manufactured from electrolytic copper conductor and fully insulated for rated voltage.

Insulating material shall be of proven design. Coils shall be insulated to withstand impulse and power frequency voltage stress on minimum.

Coil assembly shall be suitably supported between adjacent section by insulating spacers and barriers, bracing and other insulation used in assembly of the winding shall be arranged to ensure a free circulation of the oil and to reduce the hot spot of the winding.

All leads from the windings to the terminal board and bushings shall be rigidly supported to prevent injury from vibration on short circuit stresses. Guide tube shall be used where practicable.

The core and coil assembly shall be securely fixed in position so that no shifting or deformation occurs during movement of transformer at under short circuit stresses.

Tappings

Off-circuit taps as specified shall be provided on the high voltage winding

The transformer shall be capable of operation at its rated KVA on any tap provided. The voltage does not vary by more than +10% of the rated voltage corresponding to the tap.

The winding including the tapping arrangement shall be designed to maintain electromagnetic balance between HV and LV windings at all voltage ratios.

Off-Circuit Tap Changer

The off-circuit tap changing will be effected by a 3 phase gang operated switch. Arrangement shall be such that switch can be operated at standing heights from ground level.

The operating handle can be padlocked at any tap position. The design shall be such that the lock cannot be inserted unless the contacts are correctly engaged.

The mechanism shall be provided with a mechanical tap position indicator and an operation counter. All contacts shall be silver plated and held in position under strong contact pressure to ensure low contact drop and avoid pitting.

Insulating Oil

The transformer shall be filled with transformer insulating oil conforming to IS 335-1953 amended upto date suitably inhibited to prevent sludging.

First filling of oil along with 10% excess shall be furnished for the transformer. Oil shall be supplied in non-returnable containers suitable for outdoor storage.

Oil preservation shall be by means of conservator tank complete with silica gel breather and oil seal.

Bushing

Bushing shall be solid porcelain oil communicating type. Bushing shall be provided with terminal connectors of approved type and size. Bushing location shall be provide adequate phase and ground clearances.

Terminal Arrangement

LT Terminals for cable connection shall be brought out through top cover to a detachable cable and box with disconnect link.

Cable end box shall be self supporting, weatherproof, air filled type with sufficient space inside for termination and connection of cables. Cable end box shall be furnished complete with removable gland plate double compression brass glands and necessary hardware

Wiring

All control, alarm and indication devices provided with the transformer shall be wired up to the terminal blocks. Wiring shall be done with PVC wires in conduit or PVC armoured cable, minimum wire size shall be 2.5mm copper. Not more than two wires shall be connected to a terminal. 10% spare terminals shall be provided.

All devices and terminal blocks within the marshalling box shall be identified by symbols corresponding to those used in applicable schematic or wiring diagram.

Grounding

Two grounding pads, located on the opposite sides of the tank, shall be provided for connection to station ground mat. Grounding pad shall have clean buffed surface with two tapped holes, M-10 GI bolts and spring washers for connection to 50x6mm GI flat. Ground terminal shall be also provided on marshalling box to ensure its effective earthing.

Auxiliary Equipment

Natural bushing current transformer shall be furnished where specified in the annexure. The current transformer shall be cast resin type. The arrangement shall be such that the C.T can be removed from the transformer without removing the tank cover. CT secondary leads shall be wired up to the terminal blocks. The terminals for CT secondary leads shall have provision for shorting. The secondary leads of CT shall have polarity marking as per IS.

Painting

All steel surface shall be thoroughly cleaned by sand blasting or chemical agents, as required, to produce a smooth surface free of scales, grease and rust. The internal surfaces in contact with insulating oil shall be painted with heat resistant insulating varnish which shall not react with and be soluble in the insulating liquid used. The external surface, after cleaning, shall be given a coat of high quality red oxide or yellow chromate

primer followed by filler coats. The transformer shall be finished with two coats of battle ship grey (IS Shade # 632) synthetic enamel paints. The paints be carefully selected to withstand tropical heat, rain etc. The paint shall not scale off or crinkle or be removed by abrasion due to normal handling. Sufficient quantity of touch up paint shall be furnished for application after installation at site. If it is considered necessary, the transformer may be given a further coating at site by the owner. The bidder shall therefore indicate the type and quality of the paint with full specification for this purpose.

Tests

Routine Tests

During manufacture and on completion, all transformer shall be subject to the IS routine tests. In addition, the following tests shall be performed on each transformer. Transformer tank with coolers shall be tested for leaks with normal head of oil + 35 KN/sqm for a period of 12 hours, if and leak occurs, the test shall be conducted again after all leaks have been repaired. The tank designed for full vacuum shall be tested at an internal pressure of 3.33 KN/sqm (25mm of Hg) for an hour. The permanent deflection of flat plated shall not exceed CBIP specified on release of vacuum. After assembly, each core shall be pressure tested for one minute at 2KV AC between all bolts, side plates, structural steel works on the core. Excitation loss and current measurements shall be made at 90%, 100% and 110% of the rated voltage.

Miscellaneous

All components parts and auxiliary equipment such as oil, brushings, CTs etc. shall be routine tested as per relevant Indian Standards.

Test Certificates

Certified reports of all the tests carried out at the works shall be furnished in duplicate copies for approval of the owner.

The equipment shall be dispatched from works only after receipt of owner's written approval of the test reports. Type test certificate on any equipment, if so desired by the owner, shall be furnished.

RATINGS and REQUIREMENTS

| | | | |
|------|------------------------------|--------------------------|-------------------------------------|
| 1.0 | Application | : | Distribution Transformer |
| 2.0 | Service | : | Outdoor, Step-down |
| 3.0 | Type | : | Oil Immersed |
| 4.0 | Rated | : | Transformer –400 KVA |
| 5.0 | Cooling | : | ONAN |
| 6.0 | Rated Voltage (line to line) | : | 11000/433 volts |
| 7.0 | Number of Phases | : | 3 |
| 8.0 | Rate Frequency | : | 50 Hz |
| 9.0 | Temperature rise above 50°C | | |
| | a) | in oil by thermometer | : 45°C |
| | b) | in winding by resistance | : 50°C |
| 10.0 | Insulation level | | |
| | H.V Winding | : | 20.8 KV |
| | LV | : | 3KV |
| 11.0 | Vector group | : | Dyn11 |
| 12.0 | Type of tap provided | : | Off-circuit, full capacity |
| 13.0 | Taps provided on | : | HV Winding |
| 14.0 | Range of taps | : | (+5%) – (-5%) at 5 in steps of 2.5% |
| 15.0 | Method of tap change control | | |
| | a. Manual Local | : | Yes |
| | b. Electrical Local | : | No |

| | | | | |
|------|----|-----------------------------------|---|---|
| | c. | Electrical remote | : | No. |
| | d. | Automatic | : | No. |
| 16.0 | | Percentage impedance at 75C | : | 5% as per IS |
| 17.0 | | System earthing | | |
| | | H.V | : | Phases Delta connected |
| | | L.V | : | Solidly earthed |
| 18.0 | | Terminal arrangement | | |
| | | H.V | : | 11KV Porcelain bushings. |
| | | L.V | : | Suitable for LT cable (2Nos 3½X240mm²) |
| | | L.V Natural | : | 50 x 6mm G.S Flat |
| 19.0 | | Transformer bushing voltage class | | |
| | | H.V | : | 11KV |
| | | L.V | : | 433 V |
| | | L.V Natural | : | 433 V |
| 20.0 | | System fault level | : | 325 MVA at 11 KV |
| 21.0 | | Overfluxing | : | Core shall be suitable for over fluxing upto 10% due to combined effect of voltage & frequency. |
| 22 | | IS | : | 1180 |

FITTINGS AND ACCESSORIES

Each transformer shall be equipped with fitting and accessories as listed below:

- 1) Oil conservator with filler cap, drain plug and plain oil level guage.
- 2) Silica gel breather with connection pipe and oil seal
- 3) Air release plugs
- 4) Explosion vent for pressure release
- 5) Magnetic oil level guage
- 6) Temperature indicator with maximum reading pointer and electrically separate contacts for trip and alarm
- 7) Thermometer pockets.
- 8) Filler valve with threaded adopter (top and bottom)
- 9) Drain value with threaded adopter
- 10) Sampling valve
- 11) Jacking pads, handling and lifting lugs
- 12) Cover lifting eyes.
- 13) Uni-directional rollers and skids complete with clamping device with nuts and bolts for clamping for clamping and transformer on inverted channel
- 14) Handhole of sufficient size for access to interior of the tank.
- 15) Two-grounding pads each complete with two (2) nos. tapped holes, M-10 G.I bolts and washer for transformer tank cover and radiator tank
- 16) Rating and terminal marking plates.
- 17) ONAN cooling system complete with isolator valves and all necessary accessories.
- 18) LV neutral bushing separately brought out for earthing of transformer neutral.
- 19) Copper flexible with lug installed for affecting earthing of equipment components like radiators, top cover of tank etc.
- 20) Externally hand operated lockable off circuit tap changer.
- 21) Any other fittings required for this size of transformer as per manufacturer shall also be provided.

TECHNICAL SPECIFICATION FOR CAPACITORS PANEL

Capacitors

Power factor correction capacitors shall conform in all respect to IS 2834-1964. The capacitors shall be suitable for 3 phase 500 V Hz. And shall be available in units of capacitor as mentioned in BOQ in form a bank of capacitors of desired capacity. All these units shall be connected in parallel by means of solid copper bus bars as per BOQ Item of adequate current carrying capacity. Each capacitor bank shall be provided within the LT Panel.

Capacitor shall be suitable rated in series with 189 Hz. **Harmonic block reactor** to offer requisite rating of 25 KVAR(as per BOQ item) at 433 volts. Capacitor so chosen shall be able to suppress the harmonics generated in the system due to various utilities viz. computers, drivers and fluorescent lamps etc. and shall avoid resultant unbalancing of load.

The capacitor bank shall be subject to routine tests as specified in relevant Indian standards and the test certificate shall be furnished the capacitor shall be suitable for indoor use up to ambient temperature of +50 & -20 degree C. The permissible over loads shall be as given below: -

- (a) Voltage overload shall be 10% for continues operation and 15% for 6 hours in 24 hours cycles.
- (b) Current overload 15% for continues and 15% for 6 hours in 24 hours cycles.
- (c) Overload 30% for continues and 45% for 6 hours in 24 hours cycle.

The capacitor bank shall be Panel-mounting type. Capacitors shall be aluminum foil and craft paper hermetically sealed in sturdy corrosion – proof sheet steel 2mm thick containers and impregnated with non-flammable synthetic liquid. Every element of each capacitor unit shall be provided with its own built in silvered fuse. The capacitor shall have suitable discharge device to reduce the residual voltage from crest value of the rated voltage to 50 V or less with in one minute after capacitor is disconnected from the Source of supply. The loss factor of capacitor shall not exceed permissible value as per BIS. The capacitors shall with stand voltage of 2500 V AC supply for 1 minute. The insulation resistance between capacitor terminals and containers when test voltage of 500 V is applied shall not be less than 50 Mega Ohms.

The capacitor control panel shall generally comprise of the following: -

- (a) Automatic power factor correction relay time relay.
- (b) Step controller with reversing motor.
- (c) Time delay and no volt relays.
- (d) Protection MCBs
- (e) Contractor for individual capacitors of suitable rating.
- (f) Change over switch for either automatic operation of manual operation with push control.
- (g) C.T.'s with ammeter and selector switch.
- (h) Voltmeter with selector switch.

1. SPECIFICATION FOR COLD ROOMS**A. FROZEN COLD ROOM (DUAL TEMPERATURE) OF 168 PALLET CAPACITY EACH (7 NOS)**

| | | |
|-----------------------------|---|---|
| Dimensions | : | 10.5m x 6.6m x12.0m (H) |
| Capacity | : | 168 Pallet |
| No. of Chambers | : | Seven (7) |
| Ambient Temperature | : | 40 Deg C (Maximum) |
| Temperature Range | : | Frozen (upto -25 deg C). Flexible as Chiller (0 deg C) |
| Product to be stored | : | Frozen Foods, Butter, Ice Cream, Fruits, Vegetables, & Other chilled Products |
| <u>Insulation Thickness</u> | | |
| - Walls | : | 150 mm PUF |
| - Ceiling | : | 150 mm PUF |
| - Floor | : | 120 mm PUF (2 layers x 60mm) |
| - Door | : | Motorized Automatic Sliding Door (Size:2.4m x 4.6m) PUF 150mm thick |

B. CHILLED COLD ROOM OF 168 PALLET CAPACITY EACH (14 NOS)

| | | |
|-----------------------------|---|--|
| Dimensions | : | 10.5m x 6.6m x12.0m (H) |
| Capacity | : | 168 Pallet |
| No. of Chambers | : | Fourteen (14) |
| Ambient Temperature | : | 40 Deg C (Maximum) |
| Temperature Range | : | Chiller (0 deg C) |
| Relative Humidity | : | 85 to 95 % RH |
| Product to be stored | : | Apple, Fruits, Vegetables, & Other Chilled Products |
| <u>Insulation Thickness</u> | | |
| - Walls | : | 100 mm PUF |
| - Ceiling | : | 100 mm PUF |
| - Floor | : | 80 mm PUF (2 layers x 40mm) |
| - Door | : | Motorized Automatic Sliding Door (Size:2.4m x 4.6m) PUF 80mm thick |

C. ANTE-CHAMBER FOR FROZEN COLD ROOMS

| | | |
|-----------------------------|---|---|
| <u>Insulation Thickness</u> | | |
| - Walls | : | 80 mm PUF |
| - Ceiling | : | 80 mm PUF |
| - Floor | : | 80 mm PUF (2 layers x 40mm) |
| -Temperature Range | : | 10 Deg C |
| - Sliding Door | : | 01 No. Motorized Automatic Sliding Door (Size: 2.4m x 4.5m of 80mm thick PUF) |
| - High Speed Roll Up Door : | : | 01 No.(Size: 2.4m x 4.6m of 1.2mm thick insulation) |

D. LOADING-UNLOADING AREA FOR FROZEN COLD ROOMS

| | | |
|-----------------------------|---|--|
| <u>Insulation Thickness</u> | | |
| - Walls | : | 80 mm PUF |
| - Ceiling | : | 80 mm PUF |
| - Floor | : | 80 mm PUF (2 layers x 40mm) |
| -Temperature Range | : | 10 Deg C |
| - Overhead Sectional Door | : | 02 nos (Size: 2500 mm x 3000 mm) Insulation thickness 40mm |
| - Nos. of Docks | : | 02 nos. |

2. SPECIFICATIONS FOR RIPENING ROOMS

A. RIPENING ROOM OF 15 MT CAPACITY EACH (04 NOS)

| | | |
|-----------------------------|---|--|
| Dimensions | : | 10.0m x 5.0m x3.5m (H) |
| Capacity | : | 15 MT approx. per room |
| No. of Chambers | : | Four (04) |
| Ambient Temperature | : | 40 Deg C (Maximum) |
| Temperature Range | : | 14 Deg C |
| Relative Humidity | : | 85 to 95 % RH |
| Product to be stored | : | Banana, Mango |
| <u>Insulation Thickness</u> | | |
| - Walls | : | 80 mm PUF |
| - Ceiling | : | 80 mm PUF |
| - Floor | : | 80 mm PUF (2 layers x 40mm) |
| - Door | : | Swing Door 1.2m x 2.1m of 80mm thick PUF |

3. REFRIGERATION SYSTEM FOR PALLETISED CHILLED & FROZEN COLD ROOMS

Refrigeration system of suitable capacity (reference capacity compressor rack of 360kw for 14 nos chilled rooms, 07 nos freezer rooms (when operating as chiller rooms) and 1 no in ante chamber & 1 no in loading-unloading area. The 07 nos. of freezer rooms will be connected with this rack to allow operation as dual temperature complete with all accessories. The Screw Compressor Rack with 3 compressors on Freon 404A should be based on Design Temperature – Evaporation for -5 deg C, Condensing 50 deg C. The Multiple Screw Semi-Hermetic Compressor Rack Unit should be originally made and assembled by the compressor manufacturer. for Positive storage (MAKES- BITZER, BOCK, FRASCOLD, EMERSON, CARRIER, Equivalent make confirming to the product specification & standards mentioned) The following accessories and specifications etc should be ensured:

1. CONTROL PANEL FOR ALL COLD ROOM (PLC CONTROLS TYPE) TO HAVE FOLLOWING FEATURES – STARTING ARRANGEMENT FOR COMPRESSOR (HP/LP/OP CUT OUT FOR EACH COMPRESSOR) CRANKCASEHEATER TO OPERATE WHEN COMPRESSOR IS STOPPED AND OFF WHEN RUNNING. LIGHTING MAIN SWITCH ALSO IN THE PANEL. THIS WILL HAVE ALL STARTERS WITH INTERLOCKING SYSTEM. PUSH BUTTONS FOR START/STOP. HUMIDIFIER & ETHYLENE SCRUBBER SWITCHES ALSO IN THE PANEL.OVERLOAD RELAYS & FUSES, NAME PLATES, COMPLETE CABLING FROM LT PANEL FOR THE REFRIGERATION SYSTEM. THE ELECTRICAL REFRIGERATION PANEL WILL BE COMMON FOR WHOLE FACILITY WITH 21 COLD ROOMS AND 04 RIPENING CHAMBERS, ANTE ROOM, LOADING-UNLOADING AREA.

2. CONTROLS, THERMOSTAT, SOLENOID VALVE, VALVE, SIGHT GLASS

3. Refrigeration Piping Work:

- The piping shall be of refrigeration quality seamless copper tubes and the valves shall be brassoma
- MAKE: Henry / Danfoss / Sporlan/Carel, Equivalent make confirming to the product specification & standards mentioned
- The piping shall include accessories such as filter, drier, sight glass, suction / liquid heat exchanger, suction line accumulator.
- Adequate number of supports shall be included.
- The suction and discharge lines shall be designed for a maximum pressure drop corresponding to 1.1 deg. C drop in saturated evaporating and condensing temperatures.
- The liquid line shall be designed for maximum pressure drop corresponding to a drop 0.5 to 1deg. C in saturation temperature.
- The piping shall be designed with proper slope in the direction of Refrigerant flow and to

ensure proper oil return to the compressor and should be installed with adequate supports to avoid undue vibration.

h) The piping should be thoroughly cleaned as per standard practice prior to installation.

i) Minimum thickness of copper pipe: 16 G

4. Refrigeration line insulation:-

Refrigerant Line will be insulated with EPDM or XLPE. Insulation with Aluminum foil Cladding /Weatherproof Cladding; e.g. Woven glass cloth with epoxy coating or Arma check / Cladding with suitable fittings and Adhesives.

5. Drain Water piping: The Evaporator unit shall be provided with PVC drain complete with fittings and supports with 'U'traps as per requirement leading to the main drain as per approved layout.

6. PLC system should be provided for monitoring and control of operations with following : -

Communication ports embedded - USB 2.0 (with USB adapter)

Base analog - Four 24V DC digital inputs are shared as 0...10V analog inputs

Types of accessories or plug-ins supported - LCD display with backup memory module USB adapter

Power Supply - Embedded 120/240V AC and 12/24V DC options

Two plug-in module slots

microSD card slot for project backup and restore, data logging, and recipe

Embedded 10/100 Base-T Ethernet port Support for Remote LCD module for configuration

Embedded non-isolated combo serial port

Modbus RTU protocol (serial port)

Modbus TCP support

EtherNet/IP support

CIP Serial support

Controller of PLC:-

Up to six embedded High-Speed Counter inputs (HSC) (a)

100 kHz speed HSC available on 24V DC models

Up to three embedded Pulse Train Outputs (PTO) for basic positioning (b)

High-speed input interrupts

Modbus RTU protocol (serial port)

CIP Serial to allow tighter integration with PanelView™ Component

Embedded USB programming and serial port

Plug-in slots to customize according to needs

7. Accessories:- Oil Separator with Level switch, Oil Heater, pressure relief Valve, Motor Protection Devices. Liquid Receiver with pressure relief valve. Liquid Filter Drier & Liquid Sight Glass. High Low-Pressure switch. Economiser fitted on each compressor. Superheat indication compulsory on display.

8. Make of Electrical Cables for all connecting cables- Polycab, Havells, Finolex, KEI, Equivalent make confirming to the product specification & standards mentioned

4. REFRIGERATION SYSTEM FOR PALLETISED FROZEN COLD ROOMS

Refrigeration system of suitable capacity (reference capacity compressor rack of 100kw for 07 nos. freezer rooms operating at -25 Deg C complete with all accessories. The Screw Compressor Rack with 2 compressors on Freon 404A should be based on Design Temperature – Evaporation for -30 deg C, Condensing 50 deg C. The Multiple Screw Semi-Hermetic Compressor Rack Unit should be originally made and assembled by the compressor manufacturer for Freezer storage. The system should be provided with all spares to allow for dual temperature operations of the freezer rooms. (MAKES- BITZER, BOCK, FRASCOLD, EMERSON, CARRIER, Equivalent make confirming to the product specification & standards mentioned) The following accessories and specifications etc should be ensured:

1. CONTROL PANEL FOR ALL COLD ROOM (PLC CONTROLS TYPE) TO HAVE FOLLOWING FEATURES – STARTING ARRANGEMENT FOR COMPRESSOR (HP/LP/OP CUT OUT FOR EACH COMPRESSOR), CRANK CASE HEATER TO OPERATE WHEN COMPRESSOR IS STOPPED AND OFF WHEN RUNNING. LIGHTING MAIN SWITCH ALSO IN THE PANEL. THIS WILL HAVE ALL STARTERS WITH INTERLOCKING SYSTEM. PUSH BUTTONS FOR START/STOP. THE ELECTRICAL REFRIGERATION PANEL WILL BE COMMON FOR WHOLE FACILITY WITH 21 COLD ROOMS AND 04 RIPENING CHAMBERS, ANTE ROOM, LOADING UNLOADING AREA.

2. CONTROLS, THERMOSTAT, SOLENOID VALVE, VALVE, SIGHT GLASS

3. Refrigeration Piping Work

- a) The piping shall be of refrigeration quality seamless copper tubes and the valves shall be brass
- b) MAKE: Henry / Danfoss / Sporlan/Carel, Equivalent make confirming to the product specification & standards mentioned
- c) The piping shall include accessories such as filter, drier, sight glass, suction / liquid heat exchanger, suction line accumulator.
- d) Adequate number of supports shall be included.
- e) The suction and discharge lines shall be designed for a maximum pressure drop corresponding to 1.1 deg. C drop in saturated evaporating and condensing temperatures.
- f) The liquid line shall be designed for maximum pressure drop corresponding to a drop 0.5 to 1 deg. C in saturation temperature.
- g) The piping shall be designed with proper slope in the direction of Refrigerant flow and to ensure proper oil return to the compressor and should be installed with adequate supports to avoid undue vibration.
- h) The piping should be thoroughly cleaned as per standard practice prior to installation.
- i) Minimum thickness of copper pipe: 16 G

4. Refrigeration line insulation:-Refrigerant Line will be insulated with EPDM or XLPE. Insulation with Aluminum foil Cladding /Weatherproof Cladding; e.g. Woven glass cloth with epoxy coating or Arma check / Cladding with suitable fittings and Adhesives.

5. Drain Water piping for Air cooling: The Evaporator unit shall be provided with PVC drain complete with fittings and supports with 'U'traps as per requirement leading to the main drain as per approved layout.

6. PLC system should be provided for monitoring and control of operations with following : -
Communication ports embedded - USB 2.0 (with USB adapter)

Base analog - Four 24V DC digital inputs are shared as 0...10V analog inputs

Types of accessories or plug-ins supported - LCD display with backup memory module
USB adapter

Power Supply - Embedded 120/240V AC and 12/24V DC options

Two plug-in module slots

Micro SD card slot for project backup and restore, data logging, and recipe

Embedded 10/100 Base-T Ethernet port Support for Remote LCD module for configuration

Embedded non-isolated combo serial port

Modbus RTU protocol (serial port)

Modbus TCP support

EtherNet/IP support

CIP Serial support

Controller of PLC:-

Up to six embedded High-Speed Counter inputs (HSC) (a)

100 kHz speed HSC available on 24V DC models

Up to three embedded Pulse Train Outputs (PTO) for basic positioning (b)

High-speed input interrupts

Modbus RTU protocol (serial port)

CIP Serial to allow tighter integration with PanelView™ Component

Embedded USB programming and serial port

Plug-in slots to customize according to needs

7. Accessories:- Oil Separator with Level switch, Oil Heater, pressure relief Valve, Motor Protection Devices. Liquid Receiver with pressure relief valve. Liquid Filter Drier & Liquid Sight Glass. High Low-Pressure switch. Economiser fitted on each compressor. 8. Superheat indication compulsory on display.

Make of Electrical Cables for all connecting cables- Polycab, Havells, Finolex, KEI, Equivalent make confirming to the product specification & standards mentioned

5. REFRIGERATION SYSTEM FOR RIPENING ROOMS

Supply, Installation, Testing, Commissioning of Refrigeration system of suitable capacity (reference capacity 17 kw for each room) for the 04 nos ripening rooms. The complete DX type refrigeration system based on Freon 404A with semi hermetic compressors for each ripening chamber with all spares should be as per Design Temperature – Evaporation for chilled cold rooms 10 deg C, Condensing 50 deg C complete with all accessories.

1. COMPRESSOR (SEMI HERMETIC) OF REQUIRED CAPACITY WITH AIR COOLED CONDENSER. FANS TO BE CONTROLLED BY TEMP CONTROLLER, SUCTION 15/8", LIQUID 7/8". COMPRESSOR – SEMI HERMETIC (1 PER RIPENING ROOM) WITH CAPACITY TOTAL CAPACITY OF 17 KW PER CHAMBER. (MAKES- BITZER, BOCK, FRASCOLD, EMERSON, CARRIER, Equivalent make confirming to the product specification & standards mentioned)

2. EVAPORATOR OF REQUIRED CAPACITY (17 kw) 1 PER CHAMBER IN EACH RIPENING CHAMBER WITH AROUND 02 AXIAL FANS OF AROUND 500MM, FIN SPACING AROUND 6 FPI. DESIRED AIR VOLUME AROUND 30000 M3/HR (MAKES – LUVE, PATTON, GUNTNER, STAR COOLER, Equivalent make confirming to the product specification & standards mentioned)

3. CONTROLS, THERMOSTAT, SOLENOID VALVE, VALVE, SIGHT GLASS

4. THE ELECTRICAL REFRIGERATION PANEL WILL BE COMMON FOR WHOLE FACILITY WITH 21 COLD ROOMS AND 04 RIPENING CHAMBERS, ANTE ROOM, LOADING UNLOADING AREA, HUMIDIFIER & ETHYLENE SCRUBBER SWITCHES ALSO IN THE PANEL OVERLOAD RELAYS & FUSES, NAME PLATES, COMPLETE CABLING FROM LT PANEL FOR THE REFRIGERATION SYSTEM.

5. Refrigeration Piping Work

a) The piping shall be of refrigeration quality seamless copper tubes and the valves shall be brassoma

b) MAKE: Henry / Danfoss / Sporlan/Carel, Equivalent make confirming to the product specification & standards mentioned

c) The piping shall include accessories such as filter, drier, sight glass, suction / liquid heat exchanger, suction line accumulator.

d) Adequate number of supports shall be included.

e) The suction and discharge lines shall be designed for a maximum pressure drop corresponding to 1.1 deg. C drop in saturated evaporating and condensing temperatures.

f) The liquid line shall be designed for maximum pressure drop corresponding to a drop 0.5 to 1 deg. C in saturation temperature.

g) The piping shall be designed with proper slope in the direction of Refrigerant flow and to ensure proper oil return to the compressor and should be installed with adequate supports to avoid undue vibration.

h) The piping should be thoroughly cleaned as per standard practice prior to installation.

i) Minimum thickness of copper pipe: 16 G

6. Refrigeration line insulation:-

Refrigerant Line will be insulated with EPDM or XLPE. Insulation with Aluminum foil

Cladding /Weatherproof Cladding; e.g. Woven glass cloth with epoxy coating or Arma check / Cladding with suitable fittings and Adhesives.

7. Drain Water piping: The Evaporator unit shall be provided with PVC drain complete with fittings and supports with 'U'traps as per requirement leading to the main drain as per approved layout.

8. Accessories:- Oil Separator with Level switch, Oil Heater, pressure relief Valve, Motor Protection Devices. Liquid Receiver with pressure relief valve. Liquid Filter Drier & Liquid Sight Glass. High Low-Pressure switch. Economiser fitted on each compressor.

9. Make of Electrical Cable for all connecting cables - Polycab, Havells, Finolex, KEI, Equivalent

10. The support structure and civil work for hanging of outdoor unit will be in the scope of contractor at marked location.

11. Ventilation system will be provided in each ripening chamber.

12. Hanging arrangements for evaporators from PEB building rafters will be in contractor scope

6. EVAPORATORS FOR CHILLED COLD ROOMS

Evaporators of suitable capacity (reference capacity evaporator of 40kw each in 14 nos of chilled cold rooms.

1. EVAPORATOR OF REQUIRED CAPACITY OF 40 KW (1 PER COLD ROOM IN CHILLED COLD ROOMS WITH AROUND 2 AXIAL FANS OF AROUND 600MM, FIN SPACING AROUND 4 FPI. DESIRED AIR VOLUME AROUND 39000 M3/HR (MAKES – LUVE, PATTON, GUNTNER, STAR COOLER, EQUIVALENT)

2. CONTROLS, THERMOSTAT, SOLENOID VALVE, VALVE, SIGHT GLASS etc as required

3. Make of Electrical Cable for all connecting cables - Polycab, Havells, Finolex, KEI, Equivalent make confirming to the product specification & standards mentioned

4. HANGING ARRANGEMENTS FOR EVAPORATORS FROM PEB BUILDING RAFTERS WILL BE IN CONTRACTOR SCOPE

7. EVAPORATORS FOR FROZEN COLD ROOMS

Evaporators of suitable capacity (reference capacity evaporator of 30kw each in 07 nos of frozen cold rooms, two nos. in each cold room with 15 kw capacity. The Evaporator installation and piping will be as per dual temperature requirements and all connection required with both compressor racks (Chilled & Frozen) and switching arrangement.

1. EVAPORATOR OF REQUIRED CAPACITY OF 30 KW (2 PER COLD ROOM 15 KW EACH IN FROZEN COLD ROOMS FOR DUAL APPLICATION WITH AROUND 2 AXIAL FANS OF AROUND 500MM, FIN SPACING AROUND 4 FPI. DESIRED AIR VOLUME AROUND 14000 M3/HR. (MAKES – LUVE, PATTON, GUNTNER, STAR COOLER, EQUIVALENT)

2. CONTROLS, THERMOSTAT, SOLENOID VALVE, VALVE, SIGHT GLASS as required

3. Make of Electrical Cable for all connecting cables- Polycab, Havells, Finolex, KEI, Equivalent make confirming to the product specification & standards mentioned

4. Hanging arrangements for evaporators from PEB building rafters will be in contractor scope.

8. EVAPORATORS FOR FROZEN COLD ROOMS ANTE CHAMBER AND LOADING UNLOADING AREA

Evaporators of suitable capacity (reference capacity evaporator of 9.5kw inside ante chamber of frozen cold room and 10.5kw inside loading-unloading area of Frozen cold room. (MAKES – LUVE, PATTON, GUNTNER, STAR COOLER, EQUIVALENT)

1. These Evaporators are to be connected with the Chilled Rack compressors

2. CONTROLS, THERMOSTAT, SOLENOID VALVE, VALVE, SIGHT GLASS as required

3. Make of Electrical Cable for all connecting cables- Polycab, Havells, Finolex, KEI, Equivalent make confirming to the product specification & standards mentioned

4. Hanging arrangements for evaporators from PEB building rafters will be in contractor scope

9. CONDENSER FOR CHILLED COLD ROOMS

Water Cooled Condenser for Refrigeration system of suitable capacity (reference capacity 500kw) for 14 nos of chilled cold rooms, ante-chamber and loading unloading area. DESIRED WATER COOLED CONDENSER CAPACITY - 500 KW AND AIR VOLUME AROUND 45 M3/S FOR 14 NOS. CHILLED COLD ROOMS etc. (MAKES- Alfa level, Bitzer, Heatcraft, Equivalent make confirming to the product specification & standards mentioned). The structure, civil work and water pipeline for Condenser will be in the scope of contractor as per marked location.

10. CONDENSER FOR FROZEN COLD ROOMS

Water Cooled Condenser for Refrigeration system of suitable capacity (reference capacity 200kw) for 07 nos of frozen cold rooms. DESIRED WATER COOLED CONDENSER CAPACITY - 200 KW AND AIR VOLUME AROUND 39000 M3/HR FOR FROZEN COLD ROOMS. (MAKES- Alfa level, Bitzer, Heatcraft, Equivalent make confirming to the product specification & standards mentioned). The structure, civil work and water pipeline for Condenser will be in the scope of contractor as per marked location.

11. PORTABLE ETHYLENE GENERATOR FOR RIPENING ROOMS

Portable Ethylene Generator connected to an electrical plug point inside the room, the Ethylene Generator should be suitable for providing suitable levels of ethylene (as per the fruit category) in ripening rooms of volume around 175 cum by catalytic dehydration of developing liquid into ethylene gas complete with suitable developing liquid required for commercial ripening applications for each of the ripening rooms (4 nos) as per specification alongwith 5 ltr of developing liquid ethylene with each generator. Make: Aseko, Genet, Vantec, Equivalent make confirming to the product specification & standards mentioned

12. ETHYLENE GAS SENSOR FOR RIPENING ROOMS

Ethylene Gas sensor complete with display in all 4 Ripening Rooms of catalytic type with measuring range upto 2000 ppm for ripening room application as per specification. Make- Aseko, MSR, Sensorex, Equivalent make confirming to the product specification & standards mentioned

13. CO2 GAS SENSOR FOR RIPENING ROOMS

CO2 gas sensors complete with display in all 4 Ripening Rooms of infrared type with measuring range 0 – 5% suitable for ripening application as per specification. Make- Aseko, MSR, Sensorex, Equivalent make confirming to the product specification & standards mentioned

14. HUMIDIFIER FOR RIPENING ROOMS

Ultrasonic Humidifier System for Ripening Rooms with Suitable (01 Nos. in Each Room) capacity

15. ETHYLENE SCRUBBER FOR CHILLED COLD ROOMS

Ethylene Scrubber system in each of 14 nos Chilled Cold Room to allow for mixed storage of fruits and vegetables to protect product quality during storage due to ethylene, Minimum ethylene absorption capacity of media: 4+ Litres/Kg as per test certificate from an accredited laboratory. Media should be packed tightly in modules that fit inside the ethylene scrubber and contractor will provide a spare kit of Media. The system should be suitable for cold room as per specification Make - Green Keeper, BE Fresh, Equivalent make confirming to the product specification & standards mentioned

16. PUF PANEL FOR PALLETISED FROZEN COLD ROOMS

Make: Lloyd Insulation/Jindal/Rinac/Ind. Foam, Equivalent make confirming to the product specification & standards mentioned

The properties of the PUF panel should confirm to Latest ISO/BIS Standards.

- | | |
|------------------------------|---|
| a) PUF Panel Thickness | |
| Cold Room | - 150 mm (walls& ceiling) |
| Ante-Chamber | - 80mm/80mm (walls & ceiling) as per dwg. |
| Loading-Unloading Area | - 80mm (walls & ceiling) as per dwg. |
| b) Density | - 40 +/- 2 Kg/M3 |
| c) Closed cell content | - 90 - 95% |
| d) Thermal Conductivity | - 0.023 W/mK |
| e) Compressive Strength | - 2.1 kg/ m2 (at 10% deformation) |
| f) Water Vapour Permeability | - 0.8 -.12 gms/hr m2 |
| g) Fire Resistance | - Self extinguishing |
| h) Blowing Agent | - CFC Free |
| i) Sheet | - 0.5 mm TCT, PPGI |
| j) Joinery | - Tongue and groove arrangement |

17. PUF PANEL FOR PALLETISED CHILLED ROOMS

Make: Lloyd Insulation/Jindal/Rinac/Ind. Foam, Equivalent make confirming to the product specification & standards mentioned

The properties of the PUF panel should confirm to Latest ISO/BIS Standards

- | | |
|------------------------------|-----------------------------------|
| a) PUF Panel Thickness | |
| Cold Room | - 100 mm (walls &ceiling) |
| b) Density | - 40 +/- 2 Kg/M3 |
| c) Closed cell content | - 90 - 95% |
| d) Thermal Conductivity | - 0.023 W/mK |
| e) Compressive Strength | - 2.1 kg/ m2 (at 10% deformation) |
| f) Water Vapour Permeability | - 0.8 -.12 gms/hr m2 |
| g) Fire Resistance | - Self extinguishing |
| h) Blowing Agent | - CFC Free |
| i) Sheet | - 0.5 mm TCT, PPGI |
| j) Joinery | - Tongue and groove arrangement |

18. PUF PANEL FOR RIPENING ROOMS, ANTE CHAMBER & LOADING UNLOADING AREA OF FROZEN COLD ROOMS

Make: Lloyd Insulation/Jindal/Rinac/Ind. Foam, Equivalent make confirming to the product specification & standards mentioned

The properties of the PUF panel should confirm to Latest ISO/BIS Standards

- | | |
|------------------------------|-----------------------------------|
| a) PUF Panel Thickness | |
| Cold Room | - 80 mm (walls &ceiling) |
| b) Density | - 40 +/- 2 Kg/M3 |
| c) Closed cell content | - 90 - 95% |
| d) Thermal Conductivity | - 0.023 W/mK |
| e) Compressive Strength | - 2.1 kg/ m2 (at 10% deformation) |
| f) Water Vapour Permeability | - 0.8 -.12 gms/hr m2 |
| g) Fire Resistance | - Self extinguishing |
| h) Blowing Agent | - CFC Free |
| i) Sheet | - 0.5 mm TCT, PPGI |

- j) Joinery - Tongue and groove arrangement

19. FLOOR INSULATION FOR PALLETISED FROZEN COLD ROOM

Make: Lloyd Insulation/ Jindal/Rinac/BNAL/Ind. Foam, Equivalent make confirming to the product specification & standards mentioned

- a) Insulation Material - PUF slab
- b) Density - 40 +/- 2 Kg/M3
- c) No. of Layers - 2 layers (60 mm each)
- d) Total Thickness - 120 mm
- e) Vapor Barrier - Tarfelt, Polythene Sheet 250 micron thick as per dwg

20. FLOOR INSULATION FOR CHILLED COLD ROOM, RIPENING ROOM, FROZEN LOADING UNLOADING AREA & ANTE CHAMBER

Make: Lloyd Insulation/ Jindal//Rinac/BNAL/Ind. Foam, Equivalent make confirming to the product specification & standards mentioned

- a) Insulation Material - PUF slab
- b) Density - 40 +/- 2 Kg/M3
- c) No. of Layers - 2 layers (40 mm each)
- d) Total Thickness - 80 mm
- e) Vapor Barrier - Tarfelt, Polythene Sheet 250 micron thick as per dwg]

21. INSULATED DOORS FOR PALLETISED FROZEN CHILLED COLD ROOM (7 NOS)

Make: Metaflex/ Shakti Horman/Infracra, Equivalent make confirming to the product specification & standards mentioned

- a) Type of Door - Horizontal motorized automatic Sliding Door
- b) Dimensions - 2400 X 4600MM
- c) Type of panel - Sandwich panels constructed of a core of 150 mm PUF on both sides covered with 0.6 mm PPGI Finish (200 GSM). The panels are supplied with thermal bridge-free PVC surrounding profiles
- d) Sealing - 3 Side exchangable EPDM Gasket with PVC Holder)
- e) Colour outside - RAL 9002 (white)
- f) Colour inside - Standard colour RAL 9002 (white/grey)
- g) Hardware - Galvanised Steel
- h) Track Rail - Drop/Lift rail system
- i) Finish of opening - To be Included
- j) Door Operation - Automatic
- k) Locking Arrangement - To be Included
- l) Emergency Door Opening - to be provided

22. INSULATED DOOR FOR CHILLED COLD ROOM & ANTE CHAMBER (17 NOS)

Make: Metaflex/ Shakti Horman/Infracra, Equivalent make confirming to the product specification & standards mentioned

- a) Type of Door - Horizontal motorized automatic Sliding Door
- b) Dimensions - 2400 X 4600MM
- c) Type of panel - Sandwich panels constructed of a core of 80 mm

| | | |
|---------------------------|---|--|
| | | PUF on both sides covered with 0.6 mm PPGL Finish (200 GSM). The panels are supplied with thermal bridge-free PVC surrounding profiles |
| d) Sealing | - | 3 Side exchangeable EPDM Gasket with PVC Holder) |
| e) Colour outside | - | RAL 9002 (white) |
| f) Colour inside | - | Standard colour RAL 9002 (white/grey) |
| g) Hardware | - | Galvanised Steel |
| h) Track Rail | - | Drop/Lift rail system |
| i) Finish of opening | - | To be Included |
| j) Door Operation | - | Automatic |
| k) Locking Arrangement | - | To be Included |
| l) Emergency Door Opening | - | to be provided |

23. INSULATED DOOR FOR RIPENING ROOM (04 NOS)

Make: Metaflex/ Shakti Horman/Infrac/Hicon, Equivalent make confirming to the product specification & standards mentioned

| | | |
|---------------------------|---|---|
| a) Type of Door | - | Swing Door |
| b) Dimensions | - | 1200 X 2100MM |
| c) Type of panel | - | Sandwich panels constructed of a core of 100 mm PUF on both sides covered with 0.6 mm galvanized steel plate finished with 20mucoating. The panels are supplied with thermal bridge-free PVC surrounding profiles |
| d) Sealing | - | All round with triple rubber profile |
| e) Colour outside | - | RAL 9002 (white) |
| f) Colour inside | - | Standard colour RAL 9002 (white/grey) |
| g) Hardware | - | Galvanised Steel |
| h) Finish of opening | - | To be Included |
| i) Door Operation | - | Manual |
| j) Locking Arrangement | - | To be Included |
| k) Emergency Door Opening | - | to be provided |

24. INSULATED DOOR FOR FROZEN LOADING UNLOADING AREA (01 NOS)

Make: Metaflex/ Shakti Horman/Hicon/ Infrac, Equivalent make confirming to the product specification & standards mentioned

| | | |
|-------------------|---|---|
| a) Type of Door | - | Manual Sliding Door |
| b) Dimensions | - | 1800 X 2400MM |
| c) Type of panel | - | Sandwich panels constructed of a core of 100 mm PUF on both sides covered with 0.6 mm galvanized steel plate finished with 20mucoating. The panels are supplied with thermal bridge-free PVC surrounding profiles |
| d) Sealing | - | All round with triple rubber profile |
| e) Colour outside | - | RAL 9002 (white) |
| f) Colour inside | - | Standard colour RAL 9002 (white/grey) |
| g) Hardware | - | Galvanised Steel |
| h) Track Rail | - | Drop/Lift rail system |

- | | | |
|---------------------------|---|----------------|
| i) Finish of opening | - | To be Included |
| j) Door Operation | - | Manual |
| k) Locking Arrangement | - | To be Included |
| L) Emergency Door Opening | - | to be provided |

25. HIGH SPEED DOOR IN FROZEN ANTE CHAMBER (1 Nos.)

(Make: Shakti Hormann, Metaflex, Infracore, Equivalent make confirming to the product specification & standards mentioned)

- Door Size: 2400 mm x 4600 mm
- Complete with All Accessories, Thickness of insulation – 1.2 mm Minimum
- No. of cycle- 500/Day
- Control Panel - Plastic control cabinet IP65, travel limit adjustment, membrane push button Open Emergency Stop-Close with integral automatic timer Sheet Thickness for Door 1.2mm minimum
- Safety devices - Two pair of safety photocell
- Surface door closer to be provided
- Curtain - Made from modular section
- Vertical Pullman latch with rod and cover modular to be provided
- Single point surface panic push bar to be provided
- Door Operation – Soft based canopy cover

26. DOCK SHELTER (2 Nos.)

(Make: Metaflex, Shakti Hormann, Godrej, Gandhi Automation, Equivalent make confirming to the product specification & standards mentioned)

- Overall Dimension: 3400mm x 3400mm (depth 500mm) +/- 100mm
- Link arm construction with link arms fitted on back frame.
- 3-side front and back frame made of galvanized steel profiles
- Flexible frame connection by link arms made of galvanized steel profiles
- Side and top flaps: to be fixed by using weather strip anodized locating profiles

27. DOCK LEVELLER (2 Nos.)

(Make: Metaflex, Shakti Hormann, Godrej, Gandhi Automation, Equivalent make confirming to the product specification & standards mentioned)

- Overall Dimension: 2000mm x 2500mm
- Operator and control unit: Electro hydraulic operator 415V- 3 Phase, 50Hz and control voltage 24V with minimum IP54 protection. Membrane Push Button with press and Hold actuation and emergency stop integrated in IP65 enclosure.
- DL Upwards Movement – As per European Standard
- DL Downward Movement - As per European Standard
- Hydraulic Cylinder – 2 nos.
- Load Capacity – 6 MT (Dynamic load)
- Temperature Range of operations – 5 to 10 Deg C
- Foot Protection Plates on sides – as per EN1398
- Lip length – 405mm min.

28. OVERHEAD SECTIONAL DOOR (2 Nos.)

(Make: Metaflex, Shakti Hormann, Godrej, Gandhi Automation, Equivalent make confirming to the product specification & standards mentioned)

- Overall Dimension: 2500mm x 3000mm
- Material - Door leaf Galvanised steel, 0.5 mm PPGI, double-skinned, 40mm
- Door Construction - Self-supporting

- d) Closing edge safety device - Sensor controlled safety devices to monitor the bottom edge of the door. Instant stoppage and reversing on encountering any obstruction while closing.
- e) Colors - Inside panel & Outside color is standard RAL 9002.
- f) Operation - Normal lift elevation considering room height

29. G+5 SHUTTLE RACKING STRUCTURE FOR COLD ROOMS

(Make: Godrej, Silverlining, Craftman, Giraffe, Racks & Rollers, Equivalent make confirming to the product specification & standards mentioned)

G+5 Shuttle Racking Structure in 14 nos. Chilled Cold Rooms and 07 nos. Frozen Cold Rooms with total Nos. of Pallet Position in Shuttle racking will be 3528 Pallets - 168 pallets X 21 rooms) as per specification:- The storage of frozen foods, butter, ice cream, fruits and other perishable commodities in pallets has been planned at six levels within the chilled and frozen Cold Rooms viz. ground plus 05 racking level at an elevation of 1500mm plus without shuttle height which can be accommodated within these rooms having internal height of 12.0 m. Heavy duty racking frame arrangements must be provided within the cold rooms.

The heavy duty racking (MS painted in any durable long lasting colour with anti-rusting treatment and powder coated finish suitable for high humidity conditions in cold rooms with load bearing capacity of 1000 kg per pallet. Racking system will have five nos. of shuttle with additional battery bank and charger with each shuttle. The system will be suitable for 168 pallets storage per chamber.

1. All basic structural components of the system such as column, and beams should Conform to Latest Euro code EN15512 standard/equivalent.

2. Components & Raw material used for construction of Shuttle Racks System and Load bearing members of the system to be made out of high strength HR steel having properties equivalent to grades specified by IS 5986:2002 / IS 2062:2006/Equivalent. Upright: IS: 5986 – ISH430LA or equi , 355 MPa, Beam: IS: 5986 – ISH410S or equi , 255 Mpa

The different types of material used for load bearing members such as uprights and beams should have minimum guaranteed yield strength of 355MPa.(Reference Steel type IS:5986-Fe 410/ Equivalent or IS:2062-E 350/Equivalent). The raw material used for structural load bearing members should have necessary impact strength for cold room applications of UPTO -25 Deg C.

3. Fasteners used should be with galvanized finish suitable for cold store application.

4. All powder coated components should have a proper anti-rust treatment to ensure long life and protection from corrosion in HIGH HUMIDITY CONDITIONS IN cold ROOM. The final paint finish should be tested as per IS 101:1964/Equivalent.

5. Installation of Shuttle Rack System:

The shuttle rack system should be provided in knock down condition to be assembled and installed at site. The complete system should grouted on floor using expansion bolts considering that it is to be installed within cold rooms where no welding can be permitted NEITHER PUNCTURE OF INSULATION LAID BELOW THE COLD ROOM FLOOR.

Shuttle (03 Nos. for Chilled Cold Storage Application of 0 deg C and 02 nos. for Frozen Storage application of -25 deg C application, Total - 05 Nos.)

Functions to be provided in shuttle:

Feature should be in shuttle remote like - Start Stop, Low battery warning, Failure warning, Running Deceleration sensor, road wheel - 4, Battery cover

Additional battery and charger will be provided with each shuttle.

Bollards to be provided in cold rooms for protection from accidental damage / collision of forklift movement.

Protective bollards grouted in floor of ante-chamber passage complete with paint finish of suitable strength for protection against accidental damage to cold rooms walls and doors by forklift movement.

ERP Software loaded on a computer shall be provided to record and monitor the placement of pallets in various pallet positions across all the cold rooms for easy monitoring and operations

Note: The total reference tonnage of steel for complete shuttle rack system frame in each cold room and execution drawing shall be approved by the site engineer.

6. Standards –

- a) Shuttle racking component design as per EN 15512 racking standard
- b) European code -stringent safety factors, which ensures a safer rack, durable & reliable.
- c) OEM should adhere to following design standard.
- d) BS5950-5:1998 – code of practice for design of cold formed thin gauge sections
- e) FEM 10.2.02 – The design of static steel pallet racking
- f) FEM 10.3.01 – Adjustable beam pallet racking, tolerances, deformations and clearances
- g) EN: 15512: 2009 – Steel static storage systems - Adjustable pallet racking systems – Principles for structural design.

7. Manufacturing

- a) OEM should have the In-house Manufacturing capability to Process and Manufacture cold rolled essential components of the racking system. Details to be provided by bidder
- b) OEM should have in-house production capability for slitting, blanking, shearing lines.
- c) OEM should have Raw material of upright, beam and guide rail should be tested from NABL approved lab of every component to their original raw material for the storage racking system.
- d) OEM should have experienced Design, R&D facility in the field of Storage system. The evidence shall include:

3. Eco friendly Supplier –

- a) PAINT SUPPLIED MUST BE LEAD FREE – CERTIFICATION OF THE PAINT MANUFACTURER TO BE ATTACHED

8. Shuttle Racking Specs –

- a) Shuttle support beams deformation is restricted to 5mm in design
- b) Shuttle racking component design as per EN 15512 racking standard
- c) Supply of the entire bid quantity in single lot WITHOUT splitting of order
- d) Compliance to all design standards relevant to the supply - OEM must be following quality design standards and relevant design patents to prove superior product.
- e) Upright: shall be manufactured from HR steel as per IS2062/IS1079 confirming to 355mpa.
- f) Omega profile (100 mm x 70mm x 2mm), Rolled Formed, 12 bend, Single piece. g) BEAM, BASE PLATE: SHALL BE MANUFACTURED FROM HR IS2062/IS1079 GRADE STEEL

9. OTHER IMPORTANT CRITERIA: 1. The OEM should also furnish a brief on the design, manufacturing and testing facilities of OEM available at the works.

10. Raw material proof from major reputed Steel Suppliers like TATA/Jindal/ESSAR/Bhushan, used in production to be submitted including MTC.

11. Safety & usage of the system: OEM must provide safety certificate as per acceptable norms when handing over the system to the user. Training and safe usage of the system to be explained before being handed over to client

NOTE: The design & drawing of racking structure would be checked for economical design & Structural safety by a 3rd party designer as per the instruction of the Engineer In-charge/J K Agro official and thereafter the same design and drawing shall be vetted from any IIT/NIT. The fees for proof checking of the design drawing by the 3rd party designer and vetting by IIT/NIT will be borne by the agency/contractor. (Reference Make for Racking System:- Godrej, Silverlining, Craftman, Giraffe, Racks & Rollers, Equivalent make confirming to the product specification & standards mentioned

30. SHUTTLE FOR RACKING OPERATION FOR CHILLED COLD ROOMS (3 Nos)

Shuttle for G+5 Shuttle Racking Structure for in 14 nos. Chilled Cold Rooms positive temperature 0 deg C as per specification:- (Make: Godrej, Automa, Adverb, Craftman, Equivalent make confirming to the product specification & standards mentioned)

1. Standard Shuttle weight 230 Kg (approximate)

Standard carrying load 1500 Kg
Temperature range for chilled cold room 0°C to +45°C
Humidity (ST & BZ) 10% to 85% (Not condensed)
Wheels 4/8 wheels (Polyurethane)
Battery type Litio (lithium-ion battery)
Min. charging life Min 900 charging (Battery life of 4 to 5 years)
Battery working range 8 to 10 hours (room temperature)
Charging time 100% 5 hours

2. Remote Controller:

a) Manage up to 4 shuttles.
Remote control Radio frequency
Power supply Rechargeable battery
Protection IP65

Temperature range 0°C to 45°C

Working range Up to 60meter

Stand by function Standby mode active after 3 Min of not use.

- a) Shuttle should be able to count the pallets in single or multiple racks . The overall number of the pallets on the rack or in the warehouse is shown on the display of the transmitter.

31. SHUTTLE FOR RACKING OPERATION FOR FROZEN COLD ROOMS (2 nos)

Shuttle for G+5 Shuttle Racking Structure for in 07 nos. Frozen Cold Rooms negative temperature -25 deg C as per specification:-Shuttle Equipment: (Make: Godrej, Automa, Adverb, Craftman, Equivalent make confirming to the product specification & standards mentioned)

1. Standard Shuttle weight 230 Kg (approximate)

Standard carrying load 1500 Kg

Temperature range for frozen cold room -25°C to -1°C

Humidity (ST & BZ) 10% to 85% (Not condensed)

Wheels 4/8 wheels (Polyurethane)

Battery type Litio (lithium-ion battery)

Min. charging life Min 900 charging (Battery life of 4 to 5 years)

Battery working range 8 to 10 hours (room temperature)

Charging time 100% 5 hours

2. Remote Controller:

a) Manage up to 4 shuttles.
Remote control Radio frequency
Power supply Rechargeable battery
Protection IP65

Temperature range -25°C to -1°C

Working range Up to 60meter

Stand by function Standby mode active after 3 Min of not use.

- b) Shuttle should be able to count the pallets in single or multiple racks . The overall number of the pallets on the rack or in the warehouse is shown on the display of the transmitter.

32. FORKLIFT FOR PALLETISED COLD ROOMS (2 NOS)

(Make: Godrej/Linde/Toyota/Jungheinrich, Equivalent make confirming to the product specification & standards mentioned)

Reach truck 10000 mm. lifting height as per specification:- a) Capacity: 1600 kg or 1.60 Tons

b) Load Centre: 600 mm

c) Lift Speed: 0.40 ms /0.50ms approx

d) Fork Length: 1200

e) Battery Carrier: To be provided

- f) Control type: Control with AC Induction Motor
- g) Lift Height – 10000 mm minimum, Maximum mast height 4500 mm.
- h) Additional Battery and Charger to be provided along with each Reach Truck.
- i) Lift capacity at maximum load height of 10000 mm should be minimum 1000 kg
- j) Operating temperature within cold rooms shall be minimum -25 Deg and maximum 12 Deg C. (Make: Godrej/Linde/Toyota/Jungheinrich, Equivalent make confirming to the product specification & standards mentioned)

33. FORKLIFT FOR PALLETISED COLD ROOMS (1 NOS)

(Make: Godrej/Linde/Toyota/Jungheinrich, Equivalent make confirming to the product specification & standards mentioned)

Fork lift with fork height 4500 mm as per specification: - a) Capacity: 2000 kg or 2.00 Tons Min.

- b) Power source: battery
- c) Lift Height – 4500 mm minimum
- d) Control type: MOSFET Control with AC Induction Motor
- e) Stationary Charger to be provided along with forklift and Additional Battery and Charger to be provided along with forklift.
- f) Lift capacity at maximum load height of 4500 mm should be minimum 1500 kg (Make: Godrej/Linde/Toyota/Jungheinrich, Equivalent make confirming to the product specification & standards mentioned).

34. HAND PALLET TRUCK (6 NOS)

(Make: Godrej/Mahindra Stiller/Lokpal/Maini, Equivalent make confirming to the product specification & standards mentioned)

Hand pallet truck with 2500 kg lifting capacity as per specification:-

- a) Load Capacity : 2500 kg
 - b) Fork Length : 1100 mm min.
 - c) Fork Width : 150 mm min.
 - d) Out Side Fork Spread : 550 mm min.
 - e) Inside Fork Spread : 250 mm min.
- (Make: Godrej/Mahindra Stiller/Lokpal/Maini, Equivalent make confirming to the product specification & standards mentioned)

35. PLASTIC CRATES (4000 NOS)

Plastic crates of outer dimensions 540mm x 360mm x 290mm (48 ltr capacity) for storage of around 20 kg fruits vegetables (side perforated type) made of HDPE 100% virgin material as per specifications: - Dimension (outer) 540mmx360mmx290mm (+/- 2% size variation)

- b) Load Capacity 20 kgs
- c) Design Side perforated
- d) Material of Construction HDPE 100% virgin material
- e) Minimum Weight 1.5 kg or above

36. PLASTIC PALLETS WITH PALLET STRAPS (3850 SETS)

Plastic pallets of outer dimensions 1200mm x 1000mm x 150mm for dynamic load 1200kg and static load 4000kg, made of HDPE 100% virgin material with 04 steel bones with Reusable Pallet Strap - : 4nos, Pallet Dimension (outer) 1200mmx1000mmx150mm

- a) Dynamic load 1200kg
- b) Perforated
- c) Material of Construction HDPE 100% virgin material
- d) Pallet strap specifications (4 nos with each pallet): Velcro Type/PP straps, weight bearing capacity of 500kgs

NOTE: Bidders are required to submit complete technical details with model and make of the

equipment offered for each of the items under this schedule for technical scrutiny and evaluation before purchase and delivery.

Above makes of equipment are approved subject to their meeting the specifications. The contractor, however, shall seek approval of specific make from Engineer In-charge before commencing the work. The decision of Engineer in-charge shall be final and binding on the contractor in this respect.

Items that are not covered in the above list and are required for execution shall be procured with the approval of Engineer Incharge. The decision of Engineer Incharge shall be final and binding on the contractor in this respect.

SECTION VI

APPENDIX SHOWING IMPORTANT SCHEDULES

1. Signing the agreement : Within **30 days** after the date of issue of Letter of Acceptance.
2. Commencement of work : 15th days after date of the issue of letter of Acceptance (LOA).
3. EMD to be submitted along with Tender : Rs 35.85 lacs should be submitted through e-payment and the receipt of the same should be scanned and uploaded along with tender.
4. Period of completion : **09 Months** from the 15th day after date of issue of letter of acceptance.
5. Liquidated Damages : As per Tender Conditions
6. Value of Running “onaccount” Bill : running account bill not less than 25% of contract value
7. Security Deposit : a) Performance security deposit 5% of the contract value or modified contract value.
b) Security deposit 10% of the contract value or modified contract and shall be recovered 10% from each running on account/final bills.
8. IT, GST deductions : At prevailing rate from each bill
9. Defects Liability Period : 24 months after actual & final completion of work
10. Period of Final Measurement : As per progress of work.

Section - VII

BANK DETAILS PERFORMA

Banker details for refund of EMD through E-payment

Name of Work: Construction of Multipurpose Cold Storage & Ripening Chambers at J K AGRO's Talab Tillo, Jammu (J&K) - Insulation, Cold Room Doors & Docks, Refrigeration System & Ripening Equipment, Racking & Material Handling Equipment, Electrical Fittings & Cabling etc. and Fire Detection (Package 2)

Name of contractor :

Name of Bank :

Address of Bank :

Type of Bank Account :

Bank Account No. :

MICR NO. :

Bank's Sort Code :

Bank's Swift Code :

RTGS Code (IFSC Code) (Alphanumeric 11 digit code)

Bank Telephone :

One cheque duly cancelled (signature not required) :

Signature of contractor with office seal

Section - VIII

LIST OF MANDATORY TESTS

SECTION – VIII

| LIST OF MANDATORY TESTS | | | | | |
|-------------------------|--|--|---|-------------------------|---|
| S. No. | Description of Material | Test | Reference of IS Code / Specification for testing | Field / Laboratory test | Frequency of testing |
| 1 | Cement (Approved brand :-JK, Gujarat Ambuja, Birla Uttam, ACC, Vikram Shree, Ultratech, Binani, Lafarge, Madras Cement (Ramco), India Cement, Jaypee, J K Laxmi, Dalmia) | Physical & chemical properties | IS : 4031 | Lab | Initial Test-01 test for each brand of cement. Subsequently, 01 test for 200 MT or part thereof for each brand. Cement should be of approved brand and each lot should be accompanied by manufacturer's test certificates |
| 2 | Reinforcement steel (Approved brand:-SAIL, TATA, RINL, JINDAL) | Physical & chemical properties | IS :1786 | Lab | Initial Test-01 test for each brand and each dia of reinforcement steel , Subsequently - One test for every 35 MT or part thereof. Reinforcement Steel should be of approved brand and each lot should be accompanied by manufacturer's test certificates |
| 3 | Water | PH value, chlorides, sulphates, alkalinity test, acidity test, suspended matter, organic matter and inorganic matter | IS:3025 | Lab | Initial Test- Source approval at commencement of work and Subsequently- every six months or change of source. |
| 4 | Coarse Aggregate - Building works | Gradation | IS 2386 - I | Field / Lab | Minimum one test for every 50 cum or part thereof. |
| | | Deleterious material | IS 2386 - II | Field / Lab | |
| | | Specific Gravity | IS 2386 - III | Field / Lab | |
| | | Crushing value | IS 2386 - IV | Field / Lab | |
| | | impact value | IS 2386 - IV | Field / Lab | |
| | | 10% fine value | IS 2386 - IV | Field / Lab | |
| 5 | Fine Aggregate- Building works | Organic impurities | Appendix 'A 'of chapter 3, PWD/ SSR 2022 Specifications | Field | Minimum one test for every 50 cum or part thereof. |

| | | | | | |
|---|--|---|---|-------------|---|
| | | Silt content | Appendix 'C' of chapter 3 ,PWD/ SSR 2022 Specifications | Field | |
| | | Bulking of Sand | Appendix 'D' of chapter 3 ,PWD/ SSR 2022 Specifications | Field | |
| | | Gradation | Appendix 'B' of chapter 3 ,PWD/ SSR 2022 Specifications | Field / Lab | |
| | | | | | |
| 6 | Coarse Aggregate - Road , Pavement works | Gradation | IS 2386 - I | Field / Lab | One test for everyday's work. |
| | | Flakiness and Elongation Index | IS 2386 - I | Field / Lab | Once for each source of supply and subsequently on monthly basis. |
| | | Deleterious material | IS 2386 - II | Lab | One test for everyday's work. |
| | | Water Absorption | IS 2386 - III | Lab | Regularly as required subject to a minimum one test a day. This data shall be used for correcting the water demand of mix on a daily basis |
| | | Los Angeles Abrasion Value/Aggregate Impact value | IS 2386 - IV | Lab | Once for each source of supply and subsequently on monthly basis |
| | | Soundness | IS 2386 - V | Lab | Before approving the aggregates and every month subsequently. |
| | | Alkali aggregate reactivity | IS 2386 - VII, IS:456 | Lab | Before approving the aggregates and every month subsequently. |
| | | | | | |
| 7 | Fine Aggregate - Road , Pavement works | Gradation | IS 2386 - I | Field / Lab | One test for everyday's work. |
| | | Deleterious material | IS 2386 - II | Lab | One test for everyday's work. |
| | | Water Absorption | IS 2386 - III | Lab | Regularly as required subject to minimum two test per day. This data shall be used for correcting the water demand of mix on a daily basis. |
| | | Silt Content | Appendix 'C' of chapter 3 ,PWD/ SSR 2022 Specifications | Field | Minimum one test for everyday's work. |
| 8 | Slump Test - Building Works | | Appendix 'D' of Chapter 4, PWD/ SSR 2022 Specifications | Field | Minimum one test for every 20 cum of concrete or part thereof |
| | | | | | |
| 9 | Slump Test - Pavement Works | | IS 1199 | Field | One test per each dumper load at both Batching plant site and paving site initially when work starts. Subsequently, sampling may be done from alternate dumper. |

| | | | | | |
|--------------|--|---|-----------------|-------------|--|
| 10 | Cube Test | | | | |
| (i) | Reinforced Cement Concrete - Building works | 7 days and 28 days Compressive strength | IS 516 | Lab | One sample of six cubes for every 50 cum or part thereof |
| (ii) | Dry Lean Concrete (DLC) - Pavement Work | 7 days compressive strength | IS 516 | Lab | One sample of five cubes for every 150 cum or part thereof |
| (iii) | Pavement Quality Concrete (PQC) - Pavement Work | Compressive strength, flexure strength | IS 516 | Lab | 2 cube set samples and 2 beam set samples per 150 cum or part thereof for each day production. |
| | | | | | |
| 11 | Earthwork | | | | |
| | | Gradation/clay & sand content | IS 2720 -IV | Lab | 2 tests per 3000 cum or part thereof for each source. |
| | | Atterberg's limit | IS: 2720-V | Lab | |
| | | California Bearing Ratio | IS 2720-XVI | Lab | |
| | | Maximum dry density / OMC | IS 2720-VIII | Lab | |
| | | Deleterious content | IS: 2720-XXVII | Lab | |
| | | Free swelling Index | IS: 2720-XXXX | Lab | As and when required by Engineer |
| | | Field density | IS: 2720-XXVIII | Field | (a) One set of 10 measurements for each layer per 3000 sqm of compacted area for embankment (b) One set of 10 measurements for each layer per 2000 sqm of compacted area of shoulder and sub-grade. |
| | | Moisture content | IS: 2720-II | Field | 2 tests per 1000 cum |
| | | | | | |
| 12 | Granular Sub base | | | | |
| | | Gradation | IS 2386- I | Field / Lab | Minimum 01 test per source and additional test after every 1000 cum |
| | | Water absorption | IS 2386- III | Lab | Minimum 01 test per source and additional test as required by Engineer |
| | | Wet Aggregate Impact Value test (if WA >2.0%) | IS 5640 | Lab | As required by Engineer |
| | | Aggregate Impact Value | IS 2386- IV | Lab | Minimum 01 test per source and additional test after every 2000 cum |
| | | Atterberg's limit | IS 2720-V | Lab | Minimum 01 test per source and additional test after every 1000 cum |
| | | Maximum dry density /OMC | IS 2720-VIII | Lab | Minimum 01 test per source and additional test as required by Engineer |
| | | Moisture content prior to compaction | IS 2720-II | Field | Minimum 01 test every 400 cum |

| | | | | | |
|-----------|----------------------------|---|--|-------------|--|
| | | Field Density | IS 2720-XXVIII | Field | one test per 2000 Sqm or part thereof |
| | | Deleterious material | IS: 2720-XXVII | Lab | Minimum 01 test per source and additional test as required by Engineer |
| | | CBR | IS 2720-XVI | Lab | Minimum 01 test per source and additional test as required by Engineer |
| | | | | | |
| 13 | Water Bound Macadam | | | | |
| | | Gradation | IS 2386- I | Field / Lab | Minimum 01 test per source and additional test after every 500 cum |
| | | Aggregate Impact Value | IS 2386- IV or IS5640 | Lab | Minimum 01 test per source and additional test after every 500 cum |
| | | Combined Flakiness and Elongation Indices | IS 2386- I | Lab | Minimum 01 test per source and additional test after every 500 cum |
| | | Atterberg's Limit (Screening, Binding Material) | IS 2720-V | Lab | Minimum 01 test per source and additional test after every 500 cum or part thereof |
| | | Water absorption | IS 2386-III | Lab | Minimum 01 test per source and additional test as required by Engineer |
| | | Sulphur Content, Water Absorption, Chemical Stability, Density for Crushed Slag (if used) | To comply with requirements of Appendix of BS : 1047 | Lab | As required by Engineer |
| | | Soundness test (if WA >2.0%) | IS 2386-V | Lab | As required by Engineer |
| | | | | | |
| 14 | Wet Mix Macadam | | | | |
| | | Gradation | IS 2386 - I | Field / Lab | Minimum 01 test per source and additional test after every 500 cum |
| | | Water Absorption | IS 2386-III | Lab | Minimum 01 test per source and additional test as required by Engineer |
| | | Soundness (if WA > 2.0%) | IS 2386-V | Lab | As required by Engineer |
| | | Atterberg's limit of portion of aggregate passing 425 micron sieve | IS 2720 - V | Lab | Minimum 01 test per source and additional test after every 500 cum or part thereof |
| | | Aggregate Impact value | IS 2386- IV or IS 5640 | Lab | Minimum 01 test per source and additional test after every 500 cum |
| | | Maximum Dry Density / OMC | IS 2720 - VIII | Lab | Minimum 01 test per source and additional test as required by Engineer |
| | | Combined Flakiness and Elongation Indices | IS 2386 - I | Lab | Minimum 01 test per source and additional test after every 500 cum |
| | | Moisture content | IS 2720-II | Field | Minimum 03 tests per day |
| | | Field Density | IS 2720 - XXVIII | Field | One set of three test per 2000 sqm or part thereof |
| | | | | | |
| 15 | Prime /Tack Coat | | | | |
| | | Quality of Binder | IS 73, IS 217, IS 8887 | Lab | No. of samples per lot and tests as per IS 73, IS 217, IS 8887as applicable |

| | | | | | |
|-----------|---|--|---|-------|---|
| | | Binder Temperature for Application | As per MORTH specifications | Field | At regular close interval |
| | | Rate of Spread of Binder | As per MORTH specifications | Field | Minimum 03 tests per day |
| | | | | | |
| 16 | Dense Bituminous Macadam / Bituminous Concrete | | | | |
| | | Mix grading | IS 2386- I | Lab | One set for individual constituent and mixed aggregates from dryer for each 400 tonnes of mix subject to a minimum of two tests per day per plant |
| | | Plasticity Index | IS 2720-V | Lab | One test for each source and whenever there is change in the quality of aggregate. |
| | | water absorption | IS 2386-III | Lab | One test for each source and whenever there is change in the quality of aggregate. |
| | | Soundness (if WA>2%) | IS 2386-V | Lab | One test for each source and whenever there is change in the quality of aggregate |
| | | Impact value / Abrasion value | IS 2386-IV | Lab | One test per 350 cum of aggregates for each source and whenever there is change in the quality of aggregates |
| | | Combined flakiness and elongation Indices | IS 2386- I | Lab | One test per 350 cum of aggregates for each source and whenever there is change in the quality of aggregates |
| | | Stripping value | IS 6241 | Lab | Initially one set of 3 aggregate representative specimen and then for each change in quality of aggregate |
| | | Stability and Void Analysis of Mix | ASTM: D-1559 | Lab | Three tests for stability, flow value, density and void contents for each 400 tonnes of mix subject to minimum of two tests per day per plant |
| | | Retained Tensile test (if retained Coating <95%) / Moisture Susceptibility Mix | AASHTO T283 | Lab | one test for each mix type whenever there is change in quality or source of coarse or fine aggregate |
| | | Binder Content | IRC: SP 11 Appendix 5 | Field | Minimum 2 tests per day |
| | | Field Density | IRC: SP 11 Appendix 5 | Field | One test per 700 sqm |
| | | Quality of Binder | IS 1201 to IS 1220 | Lab | number of samples per lot (as in IS 73) and tests as per IS 73 |
| | | Temp Control at the time of laying and compaction | | Field | At regular interval |
| | | | | | |
| 17 | Brick work / brick tiles / sewer brick/Burnt clay perforated building Bricks | | | | |
| | | Dimension | Appendix A, B, C & D of Chapter 6 of PWD/ SSR | Lab | Minimum one test for every 50000 bricks or part thereof |
| | | Compressive strength | | Lab | |

| | | | | | |
|------------|---|----------------------|---------------------------------|-------------|--|
| | | | 2022 Specifications | | |
| | | Water Absorption | | Lab | |
| | | Efflorescence | | Lab | |
| | | | | | |
| 18 | Stone work | | | | |
| | | Water absorption | IS 1124 | Lab | Minimum one test for every 200 sqm / 100 cum or part thereof |
| | | Transverse Strength | IS 1121 - II | | |
| | | Resistance to wear | IS 1706 | | |
| | | Durability | IS 1126 | | |
| | | | | | |
| 19 | Marble | | | | |
| | | Moisture absorption | IS 1124 | Lab | Minimum one test for every 100 sqm or part thereof |
| | | Hardness test | Mho's Scale | | |
| | | Specific Gravity | IS 1122 | | |
| | | | | | |
| 20 | Granite | | | | |
| | | Moisture | IS 1124 | Lab | Minimum one test for every 100 sqm or part thereof |
| | | Specific Gravity | IS 1122 | | |
| | | | | | |
| 21 | Structural Steel (other than PEB) | | | | |
| | | Tensile strength | IS 1599 | Lab | Minimum one test for every 20 tonnes or part thereof per source and also manufacturer's test certificates for each consignment should be accompanied. |
| | | Bend Test | | | |
| | | | | | |
| 22 | Steel Tubular pipes | | | | |
| | | Tensile test | IS 1608 | Lab | Minimum one test for every 8 tonne or part thereof per source and also manufacturer's test certificates for each consignment should be accompanied. |
| | | Bend Test | IS 2329 | | |
| | | Flattening Test | IS 2328 | | |
| | | | | | |
| 23 | M 50 Grade Cement Concrete Paver Blocks | | | | |
| (i) | M-50 Grade Pre-Cast Concrete Paving Blocks | Compressive Strength | As per Technical Specifications | Field / Lab | a) 16 paving blocks for everyday production. If, however, the average strength of the first 04 blocks tested is not less than 54 N/sqm, the sample shall be deemed to comply and the remaining 12 blocks from the sample need not be tested. |
| | | | | | b) If blocks are procured from outside and not manufactured at project site 01(one) test of 16 blocks per 10,000 nos. paving blocks or part thereof |

| | | | | | |
|---------------|---|------------------------------------|--|-------------|--|
| | | Dimensions | As per Technical Specifications | Field / Lab | a) 16 paving blocks for everyday production b) If blocks are procured from outside and not manufactured at project site 01(one) test of 16 paving blocks per 10,000 nos. paving blocks or part thereof |
| | | | | | |
| (ii) | Sand for Bedding Layer | | | | |
| | | Percentage of Deleterious material | IS 2386 | Lab | Minimum one test for every 50 cum or part thereof |
| | | Particle Size Distribution | As per Technical specification | Field / Lab | |
| | | Silt Content | As per Appendix 'C' of Chapter 3 of PWD/ SSR 2022 Specifications | Field | |
| | | Moisture Content | IS 2720 | Field | |
| | | | | | |
| (iii) | Sand for Joint Filling | Particle Size Distribution | As per Technical specification | Field / Lab | Minimum one test for every 50 cum or part thereof |
| | | | | | |
| Note:- | For items not covered above may be dealt with as per the technical specifications in the contract. | | | | |

SECTION – IX

(TESTING PROFORMAS)

1. Site Order Book

[illegible]

2. Hindrance Register

[illegible]

3. Drawing Register

[illegible]

Bill Performa

Name of work :

LOI No.

Name of Contractor :

Date of Start :

Date of Preparation of Bill :

| S N | Item No. | Descri ption of Items | Unit | Qty as per Agt . | Rate as per Agt. | Qty as per Pre. Bill | Qty as per this Bill | Cumu lative Qty. | Amt. as per Previo us Bill | Amt. as per this Bill | Cumul ative Amount |
|--------|-------------|--------------------------------|------|------------------------------|---------------------------|--------------------------------|-------------------------------|------------------------|-------------------------------------|--------------------------------|--------------------------|
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| | | | | | | Total of Schedule A | | | | | |
| | | | | | | Add Enhancement or Rebate @ | | | | | |
| | | | | | | Grand Total of Schedule A | | | | | |

SECTION – X (TENDERDRAWING)

