



**DEPARTMENT OF HORTICULTURE**  
(Government of Karnataka)



**INVITATION FOR TENDER**

**“Construction of Cold Storage of Capacity 2000 MT at Chawenahally  
Horticulture Farm, Malur Taluk, Kolar District – Karnataka”**

**The Director of Horticulture**  
**DEPARTMENT OF HORTICULTURE**  
**Lalbagh, Bengaluru**  
**Karnataka - 560 004**  
**Mail-id: [jdhveg@gmail.com](mailto:jdhveg@gmail.com)**

## DEPARTMENT IOF HORTICULTURE

(Government of Karnataka)  
Lalbagh, Bangalore, Karnataka-560004  
E-mail: horticulturedirector@gmail.com

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NO:DH/JDH/VEG/SADH/PHM/AHO-2/31/2023-24

Date:10-03-2024

### **INVITATION FOR PRE-QUALIFICATION**

(Through Government of Karnataka e-procurement portal only)

**Name of Project: “Construction of Cold Storage of Capacity 2000 MT at Chawenahally Horticulture Farm, Malur Taluk, Kolar District – Karnataka”**

- The Joint Director of Horticulture, Karnataka Horticulture Board invites tenders from eligible Contractors registered with CPWD / KPWD / Railways / MES or any State Government Organizations for **“Construction of Cold Storage of Capacity 2000 MT at Chawenahally Horticulture Farm, Malur Taluk, Kolar District – Karnataka under NABARD RIDF-29”**
- The tenderers may submit tenders for works given in the table through e-procurement portal of the Government of Karnataka (<https://kppp.karnataka.gov.in/>) from 10-03-2024.
- The Tenderers are advised to note the minimum qualification criteria specified in Clause 3 of the Instructions to Tenderers to qualify for award of the contract.
- Tenderers shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the Government of Karnataka.
- **Tenders from Joint venture between Civil, Electrical and HVAC works is acceptable.** The HVAC and electrical supplies can be of sub-contractor also and their credentials will be taken in to account in case of MOU made with the supplier in Rs 100 stamp paper having the eligibility as per general conditions. The Tenderer or the Mechanical supplier should not have incurred any loss in the last five financial years.
- Tenders must be accompanied by earnest money deposit specified for the work in the Table below. Earnest money deposit will have to be in any one of the forms as specified in the

Tender document and shall have to be valid for 180 days beyond the validity of the tender.

SI No	Name of Work	Est Cost (Rs. In Lakhs)	EMD Amount	Stipulated Period of Completion (in Months)
1	“Construction of Cold Storage of Capacity 2000 MT at Chawenahally Horticulture Farm, Malur Taluk, Kolar District, Karnataka”	1017.06	EMD Rs. 1,00,000 (One Lakh ) through E-payment.EMD  Rs. 10,17,000.00 through Bank Guarantee. (Validity BG in days from last day of Bid submission: 135 days	

- 1. Bank Guarantee (BG): Security for an amount of Rs. 10,32,000.00 to be submitted as BG to the Department of Horticulture. The selected bidder shall deposit BG through RTGS/NEFT to the account. After successful completion of the project for the period of 2 years the BG amount without interest will be refunded to the bidder up on request. The defaulted/ barred / black listed bidders BG will be forfeited**  
Karnataka State Horticulture Development Agency (KSHDA),  
Directorate of Horticulture,  
Lalbagh, Bangalore, Karnataka-560004  
Account No: 00000064037414538  
Branch: Vidhana Soudha  
IFSC: SBIN0040277, MICR: 560002419
- 2. The last date and time for uploading the proposal using the E-Procurement platform (proposal due date) is 10/03/2024**
- 3. A Pre-tender meeting will be held on 21/03/2024. at 11.00 AM hours at the office of Joint Director of Horticulture, (Vegetable Section), Lalbagh, Bengaluru to clarify the issues if any, and to answer questions on any matter that may be raised at that stage as stated in Clause 8.2 of ‘Instructions to Tenderers’ of the tender document**

## The Calendar of Events

Date of Publishing Tender Document on e-Portal	10.03.2024 at 3.00 pm
Last date of submission of tender through e-Procurement Portal of the Government of Karnataka ( <a href="https://kppp.karnataka.gov.in/">https://kppp.karnataka.gov.in/</a> ).	20.04.2024 at 5.30 pm
Date and time of opening of Technical bids	22.04.2024 at 11.00 am
Date and time of opening of financial bids tentative	26.04.2024 at 11.00 am
Approximate Tender Cost	1017.06 lakhs
Amount of EMD	1.00 lakh
Date &  Place of pre bid meeting, opening of bids & address for communication	21/03/2024 at 11.00 am Joint Director of Horticulture (Vegetable Section), Lalbagh, Bengaluru Karnataka - 560 004 Email id: jdhveg@gmail.com
For e-Procurement information	<a href="https://kppp.karnataka.gov.in/">https://kppp.karnataka.gov.in/</a>

## Essential Conditions

- Tender documents may be downloaded from Government of Karnataka e-Procurement website <https://kppp.karnataka.gov.in/> under login for Contractors. Aspiring Bidders/Contractors who have not registered in e-procurement should register before participating through the website <http://eproc.karnataka.gov.in> or contact e-Procurement Helpdesk at 080 – 22485867 / 22485927
- The Tender will remain valid for 180 Days from the Date of Opening of Tender.
- Tenders must be accompanied by Earnest Money Deposit specified for the work in the Table. Earnest Money Deposit will have to be in specified in the KW-6 Standard Tender document and shall have to be valid for 90 days beyond the validity of the tender (if EMD in the form of BG/FDR. Shall submit to this office for verification from bank before last date and time for receipt of tender).
- Any Corrigendum / Modification will be notified in the e-procurement portal only.

**The Joint Director of Horticulture**  
**Vegetable section,**  
**Lalbagh, Bengaluru**

## DEPARTMENT OF HORTICULTURE

(Government of Karnataka)  
Lalbagh, Bangalore, Karnataka-560004  
E-mail: horticulturedirector@gmail.com

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Prequalification with joint venture for the work of “**Construction of Cold Storage of Capacity 2000 MT at Chawenahally Horticulture Farm, Malur Taluk, Kolar District – Karnataka under NABARD RIDF 29**”

### PART I: ON ITEM RATE TENDER BASIS

- A. Construction of 2000 MT Capacity - Cold Storage
- B. Cold storage facility including insulated panel structure refrigeration and allied systems including Utility room, miscellaneous items, electrical installation,
- C. Basic infrastructure facilities - Security room, Sump, Compound wall, Roads, Storm water drain, basic electrical and plumbing, transformer, Generator etc.,

### TENDER REFERENCE:

File No.: NO:DH/JDH/VEG/SADH/PHM/AHO-2/31/2023-24

Dated:10-03-2024

Place of Opening of PQ Applications	:	Joint Director of Horticulture (Vegetable Section), Lalbagh, Bengaluru Karnataka - 560 004 Email id: <a href="mailto:jdhveg@gmail.com">jdhveg@gmail.com</a>
Address for Communication	:	Joint Director of Horticulture (Vegetable Section), Lalbagh, Bengaluru Karnataka - 560 004 Email id: <a href="mailto:jdhveg@gmail.com">jdhveg@gmail.com</a>

<b>ABBREVIATIONS AND ACRONYMS.....</b>	<b>viii</b>
<b>GLOSSARY.....</b>	<b>ix</b>
<b>1. INVITATION FOR PRE-QUALIFICATION.....</b>	<b>1</b>
<b>2. GENERAL INSTRUCTIONS TO APPLICANTS (GITA) .....</b>	<b>3</b>
1. SCOPE OF WORKS .....	3
2. FRAUD AND CORRUPTION.....	4
3. ELIGIBILITY OF TENDERERS.....	4
4. QUALIFICATION CRITERIA .....	4
5. JOINT VENTURES.....	11
6. REQUEST FOR CLARIFICATION .....	14
7. SUBMISSION OF APPLICATIONS.....	14
8. EMPLOYER’S NOTIFICATION AND TENDER PROCESS.....	15
<b>3. PARTICULAR INSTRUCTIONS TO APPLICANTS (PITA).....</b>	<b>18</b>
<b>4. CONDITIONS OF CONTRACT .....</b>	<b>21</b>
A. GENERAL .....	21
B. TIME CONTROL .....	28
C. QUALITY CONTROL .....	29
D. COST CONTROL.....	30
E. FINISHING THE CONTRACT .....	36
F. SPECIAL CONDITIONS OF CONTRACT .....	39
<b>5. CONTRACT DATA .....</b>	<b>42</b>
<b>6. Annexure- A .....</b>	<b>48</b>
<b>Supplementary information may be provided by Applicants as deemed necessary. ....</b>	<b>23</b>
<b>General Information.....</b>	<b>24</b>

<b>General Construction Experience Record.....</b>	<b>27</b>
<b>Joint Venture Summary .....</b>	<b>28</b>
<b>DETAILS OF PARTICIPATION IN THE JOINT VENTURE.....</b>	<b>29</b>
<b>Particular Construction Experience Record .....</b>	<b>30</b>
<b>Details of Contracts of Similar Nature and Complexity .....</b>	<b>31</b>
<b>Details of Production Levels in Key Construction Activities .....</b>	<b>32</b>
<b>Summary Sheet: Current Contract Commitments / Works in Progress .....</b>	<b>33</b>
<b>Financial Capabilities .....</b>	<b>35</b>
<b>FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF OVERDRAFT/CREDIT FACILITIES .....</b>	<b>Error! Bookmark not defined.</b>
<b>Personnel Capabilities .....</b>	<b>37</b>
<b>Candidate Summary .....</b>	<b>38</b>
<b>Equipment Capabilities .....</b>	<b>39</b>
<b>Litigation History.....</b>	<b>40</b>

## **ABBREVIATIONS AND ACRONYMS**

BOQ	Bill of Quantities
GCOC	General Conditions of Contract
GITA	General Instructions to Applicants, in the SPD
IF	Information Forms
IFT	Invitation for Tenders
IFP	Invitation for Pre-qualification
ITB	Instructions to Tenderers
JV	Joint Venture
JVA	Joint Venture Agreement
PQ	Pre-qualification
PITA	Particular Instructions to Applicants, in the SPD
STD	Standard Tender Document
SPD	Standard Pre-qualification Document



## GLOSSARY

Employer	One of the two parties to a works contract, the other party being the “Contractor.”
Contractor	The legal entity that is party to and performs a works contract, the other party to the contract being the “Employer.”
Joint venture	An ad hoc association of firms that pool their resources and skills to undertake a large or complex contract in the role of “Contractor,” with all firms (partners in the JV) being legally liable, jointly and severally, for the execution of the contract in the event of a partner’s withdrawal.
Management contractor	A firm, acting in the role of “Contractor,” that does not usually perform contract construction work directly, but manages the work of other (sub) contractors, while bearing full responsibility and risk for price, quality, and timely performance of the contract.
Construction Manager	A consultant, acting as agent of the Employer, engaged to coordinate and monitor the timing of preparation, tender award, and execution of a number of different contracts comprising a project, but does not take on the responsibility for price, quality, or performance of those contracts.
Nominated Subcontractor	A specialist enterprise selected and approved by the Employer to provide a pre-specified item in the BOQ, and nominated as subcontractor to the Contractor for such purpose.
Post-qualification	An assessment made by the Employer after the evaluation of tenders and immediately prior to award of contract, to ensure that the lowest-evaluated, responsive, eligible bidder is qualified to perform the contract in accordance with previously specified qualification requirements.
Pre-qualification	An assessment made by the Employer of the appropriate level of experience and capacity of firms expressing interest in undertaking a particular contract, before inviting them to tender.

Prime contractor	A firm that performs a substantial part of a contract construction work itself and the balance, if any, by subcontractors, while bearing full responsibility for the whole contract.
Provisional sum	A sum included provisionally in the BOQ of a contract, normally for a specialized part of the Works or for contingencies, which sum shall be used only on the instructions of the Employer for payments to the contractor and/or to nominated subcontractors.
Slice and Package	A procedure whereby a large homogeneous work is sliced into smaller similar contracts, which are bid simultaneously so as to attract the interest of both small and large firms; firms offer bids on individual contracts (slices) or on a group of similar contracts (packages), and award is made to the combination of bids offering the lowest cost to the Employer Slices comprising a number of similar construction units together in a small area are sometimes referred to as “lots,” which are bid concurrently with other similar “lots” as part of the larger “package.”
Turnover	The gross earnings of a firm (in this context, a construction contractor), defined as the billings for contract work in progress and/or completed, normally expressed on an annual basis, and excluding income from other sources
Works	The total work involvement in a construction contract, including the “Permanent” Works or finished product as specified, and the “Temporary” Works required by the Contractor for the execution of the contract.
Writing	For the purpose of this document, any authenticated handwritten, typed, or printed communication, including telex, cable, electronic mail, and facsimile transmission, with proof of receipt when requested by the sender.

## **1. INVITATION FOR PRE-QUALIFICATION**

**Name of Project: “Construction of Cold Storage of Capacity 2000 MT at Chawenahally Horticulture Farm, Malur Taluk, Kolar District – Karnataka”**

The Joint Director of Horticulture, Karnataka Horticulture Board invites tenders from eligible Contractors registered with CPWD / KPWD / Railways / MES or any State Government Organizations for **“Construction of Cold Storage of Capacity 2000 MT at Chawenahally Horticulture Farm, Malur Taluk, Kolar District – Karnataka under NABARD RIDF-29”**

### **PART I: ON ITEM RATE TENDER BASIS**

- A. Construction of 2000 MT Capacity - Cold Storage
  - B. Cold storage facility including insulated panel structure refrigeration and allied systems including Utility room, miscellaneous items, electrical installation,
  - C. Basic infrastructure facilities - Security room, Sump, Compound wall, Roads, Storm water drain, basic electrical and plumbing, transformer, Generator etc.,
1. Pre-qualification will be conducted through pre-qualification procedures specified in paragraph 27 of Karnataka Transparency in public procurement rules 2000 and is opened to all eligible tenderers. Paragraph 27 States that: The Tender inviting authority shall for reasons to be recorded in writing provide for pre-qualification of tenderers on the basis of:
    - a. Experience and past performance in the execution of similar contracts.
    - b. Capabilities of the tenderer with respect to personnel, equipment and construction or manufacturing facilities,
    - c. Financial status and capacity
    - d. Only the tenders of pre-qualified tenderers shall be considered for evaluation
  2. Interested eligible tenderers may obtain further information from and inspect the tender documents which are available online in the Government of Karnataka e-procurement portal and the tenders are to be submitted online through the e-procurement portal <https://kppp.karnataka.gov.in/> only. Tenders submitted in any other manner will not be accepted. Tenderers are required to obtain Level III digital signature from designated firms

(available on the e-procurement portal) and then register with the Government of Karnataka e-procurement platform and submit tenders by using their ID and digital signature.

3. A Pre-bid meeting will be held as per E- procurement portal in the office of Joint Director of Horticulture, (Vegetable section), Lalbagh, Bangalore – 560 004, Karnataka. To clarify the issues if any, and to answer questions on any matter that may be raised at that stage regarding the tender document. Applications for pre-qualification should be submitted through e-procurement portal only on or before as per E- Procurement portal
4. Tender documents along with the necessary information/documents must be uploaded to the e-procurement portal <https://kppp.karnataka.gov.in/> as per the tender document on or before (as per e-procurement portal) and first folder containing the Techno commercial tender will be opened (as per e-procurement portal) at the stipulated venue, in the presence of the Tenderers or their authorized representatives who wish to attend. If the office happens to be closed on the date of opening of the tenders as specified, the tenders will be opened on the next working date at the same time and venue.
5. The Employer shall not be liable for any delays due to the system failure beyond its control, Even though the system will attempt to notify the Tenderers of any tender updates, the Employer shall not be liable for any information not received by the Tenderers. It is the Tenderer's responsibility to verify the e-procurement portal for the latest information related to the tender, E-mail address of the Helpdesk is [hphelpdesk.blr@intarvo.com](mailto:hphelpdesk.blr@intarvo.com). E-procurement portal help desk telephone numbers are: 080 – 22485867 / 22485927 (Timings 9:00 hours to 21:00hours). The tenderer is required to ensure browser capability of the computer well in advance to the last date and time for receipt of tenders, The employer shall not be responsible for non-accessibility of e-procurement portal due to internet connectivity issues and technical glitches

**The Joint Director of Horticulture**  
**Vegetable section,**  
**Lalbagh, Bengaluru**

## 2. GENERAL INSTRUCTIONS TO APPLICANTS (GITA)

<b>1. <u>SCOPE OF WORKS</u></b>		
Scope of Works	1.1	The Joint Director of Horticulture, Karnataka Horticulture Board, Karnataka invites tenders from eligible Contractors registered with CPWD / KPWD / Railways / MES or any State Government Organizations for <b>“Construction of Cold Storage of Capacity 2000 MT at Chawenahally Horticulture Farm, Malur Taluk, Kolar District – Karnataka”</b>
Slice and Package	1.2	NA -Deleted
Tender Invitation	1.3	The tenderers may submit tenders for works given in the table through e-procurement portal of the Government of Karnataka <a href="https://kppp.karnataka.gov.in/">https://kppp.karnataka.gov.in/</a> from 10.03.2024
Type of Contract	1.4	On the stipulated date of opening of Tenders, initially, only the Technical Bids are opened. The Technical Bids shall be evaluated by the Employer in accordance with the stipulated Qualification and Evaluation criteria as in clause 3. No amendments or changes to the Technical Bids would be permitted after the opening of Technical Bids. Tenderers who are qualified in the Technical Evaluation, their Price Bid shall be opened at a date and time advised by the Employer through e-tendering portal. The Price Bids are evaluated and the Contract is awarded to the Tenderer whose Tender has been determined to be the lowest evaluated substantially responsive tender.
Site Information	1.5	General information on the climate, hydrology, topography, geology, access to site, transportation and communications facilities, medical facilities, project layout, expected construction period, facilities, services provided by the Employer, and other relevant data is attached as an Annex to the PITA.

<b>2. <u>FRAUD AND CORRUPTION</u></b>		
	2.1	The GOK requires that the tenderers/ Contractors observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, GOK:
		a. will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question; and
		b. will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a GOK contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a GOK contract.
<b>3. <u>ELIGIBILITY OF TENDERERS</u></b>		
Eligible Tenderers	3.1	Tenderers shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by GOK
<b>4. <u>QUALIFICATION CRITERIA</u></b>		
General	4.1	Qualified tenders will be based on Applicants meeting all the following minimum pass–fail criteria regarding their general and particular construction experience, financial position, personnel and equipment capabilities, and other relevant information as demonstrated by the Applicant’s responses in the Information Forms attached to the Letter of Application. Additional requirements for joint ventures are given in Section 5. The qualifications, capacity, and resources of proposed subcontractors will not be taken into account in assessing those of individual or joint venture Applicants, unless they are named specialist subcontractors pursuant to Sub-Clause 4.4.
Nominated Subcontracting	4.2	If so, listed in the PITA, the Employer intends to execute certain specialized elements of the Works by Nominated Subcontractors in accordance with the GCOC of the tender documents, and for which Provisional Sums will be included in the BOQ for the subject Works.

Subcontracting	4.3	If an Applicant intends to subcontract parts of the Works such that the total of subcontracting is more than the 20-percentage stated in the PITA of the Applicant's approximated Tender Price, that intention shall be stated in the Letter of Application, together with a tentative listing of the elements of the Works to be subcontracted.
Specialist Subcontracting	4.4	If an Applicant / tenderer / JV intends to subcontract Electro-mechanical/Cold store works to specialist subcontractors, such elements and the proposed subcontractors shall be clearly identified, and the experience and capacity of the subcontractors shall be scribed in the relevant Information Forms.
Acceptable Substitutes	4.5	With reference to Sub-Clauses 4.3 and 4.4, the Employer may require Applicants to provide more information about their proposals. If any proposed subcontractor is found ineligible or unsuitable to carry out an assigned task, the Employer may request the Applicant to propose an acceptable substitute, and may conditionally Pre-qualify the Applicant accordingly, before issuing an invitation to tender.
Contractor's Responsibility	4.6	After award of contract, the subcontracting of any part of the Works, other than for the provision of labor and materials, or to subcontractors named in the Contract, shall require the prior consent of the Employer. Notwithstanding such consent, the Contractor shall remain responsible for the acts, defaults, and neglects of all subcontractors during contract implementation.
General Construction Experience	4.7	The Applicant shall provide evidence that:
		a. It has been actively engaged in the civil works construction business for at least 5 years immediately prior to the date of submission of applications, in the role of prime contractor, management contractor, partner in a joint venture, or subcontractor and
		b. That the applicant has generated an average annual construction turnover during the above period greater than the Rs.25.00 crores (the average annual turnover is defined as the total of certified

		payment certificates for works in progress or completed by the firm or firms comprising the Applicant, divided by the number of years)
Particular Construction Experience	4.8	The applicant / tenderer / JV shall provide evidence that:
		a. Satisfactory completed, at least one similar work of Civil works value not less than Rs.7.50 Crores as prime contractor
		b. Satisfactory completed, at least one similar work of Cold store works value not less than Rs. 2.50 Crores as prime contractor (or)
		c. Similar works means construction of RCC or Steel Multi-storied buildings minimum G Plus 2 with Plinth area not less than 600 sqm. Similarly for the cold stores the contractor or the partner of JV should have executed cold stores/ CA stores for not less than 2000 MT in a single work.
		d. The Applicant / tenderer / JV shall also provide evidence that it has achieved the minimum monthly and/or annual production rates of the key construction activities.
Financial Capabilities	4.9	The Applicant / tenderer / JV shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements for the subject contract(s) in the event of stoppage, start-up, or other delays in payment, of the minimum estimated amount Rs. 3.00 Crores, net of the Applicant's commitments for other contracts.
	4.10	In the relevant Information Form, the Applicant shall also demonstrate, to the satisfaction of the Employer, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.
	4.11	The audited balance sheets or other financial statements acceptable to the Employer, for the last five years (unless otherwise stated in the PITA) shall be submitted and must demonstrate the current soundness of the



		Applicant's financial position and indicate its prospective long-term profitability. If deemed necessary, the Employer shall have the authority to make inquiries with the Applicant's bankers.				
Personnel Capabilities	4.12	The Applicant shall supply general information on the management structure of the firm, and shall make provision for suitably qualified personnel to fill the key positions listed in the PITA, as required during contract implementation. The Applicant shall supply information on a prime candidate and on an alternate for each key position, both of whom shall meet the experience requirements specified.				
		Position	Minimum no of personnel	Qualification	Total Works/ Business Experience years)	In similar works (Years)
Equipment Capabilities	4.13	The Applicant shall own, or have assured access (through hire, lease, purchase agreement, other commercial means, or approved subcontracting) to key items of equipment, in full working order, as listed in the PITA, and must demonstrate that, based on known commitments, they will be available for timely use in the proposed contract. The Applicant may also list alternative types of equipment that it would propose for use on the contract, together with an explanation of the proposal.				

S. No	Name of Equipment, plant / vehicles	Total requirement for this work	Equipment owned by the Applicant			Equipment leased with the applicant			Equipment to take lease by the applicant		
			Nos	Year of	Present	Nos	Year of	Present	Nos	Year of	Present
	Excavator - 200/300	1									
	RMC Plant with all equipment - 30 m <sup>3</sup> /hour	1									
	Transit Mixer - 6 m <sup>3</sup>	2									
	Concrete Pump	1									
	CRAWLER crane- 40 tons	1									
	Hydraulic crane 14 M.T	1									
	Vacuum Dewatering set	1									
	Tipper / Lorry 10 cum	2									
	Water lorry with sprinkler 10 KL	2									
	Concrete Mixer 2 CUM	1									
	Needle	4									

			Vibrator										
			Pump Set with 5 HP	2									
			Welding Transformers	<i>As per work requirement.</i>									
			Drilling machine – Both pedestal and hand	<i>At least 2 each or as required</i>									
			Steel scaffolding and shuttering material with pipes and plates	<i>As required for installation</i>									
			Hand Grinder	<i>At least 2 or as required</i>									
			Pipe cutters, Hex -blades etc.	<i>As required for construction</i>									
			Contractor's Equipment"	<i>As required</i>									

		means all facilities, equipment, machinery, tools, apparatus, appliances or things of every kind required in or for installation, completion and maintenance of Facilities	<i>ed for installation, completion and maintenance of Facilities</i>																
Litigation History	4.14	The Applicant shall provide accurate information on the related Application Form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the last five years. A consistent history of awards against the Applicant or any partner of a joint venture may result in failure of the application.																	
Slice and Package	4.15	NA – Deleted																	
Right to Waive	4.16	The Employer reserves the right to waive minor deviations in the qualification criteria if they do not materially affect the capability of an Applicant to perform the contract.																	
Approach and Construction Methods	4.17	The applicant must attach with their application, a note giving a general description on the approach to the construction methods, technologies, quality assurance schemes proposed, deployment schedule of equipment proposed to be used, etc., for ensuring completion of the work as per specifications within the desired time- frame.																	

Tender Capacity	4.18	Applicants who meet the minimum qualification criteria will be qualified only if their available tender capacity at the expected time of tendering is more than the total estimated cost of the works. The available tender capacity will be calculated as under:
		Assessed Available Tender Capacity = (A*N*1.5-B), where
		A = Maximum value of works executed in any one year during the last five years which will take into account the completed as well as works in progress;
		B = Value at current price level of the existing commitments and on-going works to be completed during the next 2 years and 6 months (30 Months) (period of completion of works for which tenders are invited); and
		N = Number of years prescribed for completion of the works for which the tenders are invited.
	4.19	Applicants meeting the above criteria, are nevertheless subject to be disqualified if they have:
		a. made misleading or false representation in the form, statements and attachments submitted; and/or
		b. record of poor performance such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures, etc.
5. <u>JOINT VENTURES</u>		
Eligibility	5.1	If the Applicant comprises a number of firms combining their resources in a joint venture, the legal entity constituting the joint venture and the individual partners in the joint venture shall be registered and shall otherwise meet the requirements of Clause 3 above.
Qualification Criteria	5.2	The joint venture must satisfy collectively the criteria of Clause 4. For this purpose, the following data of each member of the joint venture may be added together to meet the collective qualifying criteria:
		a. average annual turnover (Sub-Clause 4.7 [b]);

		b. particular experience including key production rates (Sub-Clause 4.8);
		c. financial means (Sub-Clause 4.9, 4.10, and 4.11);
		d. personnel capabilities (Sub-Clause 4.12); and
		e. equipment capabilities (Sub-Clause 4.13).
		Each partner must satisfy the following criteria individually:
		a. general construction experience for the period of years stated in Sub-Clause 4.7 (a),
		b. adequate sources to meet financial commitments on other contracts (Sub- Clause 4.10),
		c. financial soundness (Sub-Clause 4.11), and
		d. litigation history (Sub-Clause 4.14).
		e. In accordance with the above, the Application shall include all related information required under Clause 4 for individual partners in the joint venture.
Partner in Charge	5.3	Lead Partner in charge: One of the partners, who is responsible for performing a key function in contract management or is executing a major component of the proposed contract, shall be nominated as being in charge during the pre-qualification and tendering periods and, in the event of a successful tender, during contract execution. The partner in charge /Lead partner shall have 50% of the qualifying criteria specified for Average annual turnover and Line of credit / liquid assets. The partner in charge shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture; this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners.
Partner Limitation	5.4	The maximum no. of partners shall of 3 nos. One of the partners, who is responsible for performing a key function in contract management or is executing a major component of the proposed contract, shall be nominated

		as being in charge during the tendering periods and, in the event of a successful tender, during contract execution.
Joint and Several Liability	5.5	All partners of the joint venture shall be legally liable, jointly and severally, during the tendering process and for the execution of the contract in accordance with the contract terms, and a statement to this effect shall be included in the authorization mentioned under Sub-Clause 2.4 above. To enable the above, each of the partners of the joint venture other than lead partner shall meet not less than 25% of the qualifying criteria specified for Average annual turnover and Line of credit/ liquid assets
Joint Venture Agreement	5.6	A copy of the Joint Venture Agreement (JVA) entered into by the partners shall be submitted with the Application. Pursuant to Sub-Clauses 2.2 to 2.5 above, the JVA shall include among other things: the JV's objectives; the proposed management structure; the contribution of each partner to the joint venture operations; the commitment of the partners to joint and several liability for due performance; recourse/sanctions within the JV in the event of default or withdrawal of any partner; and arrangements for providing the required indemnities
Dissolution of Joint Venture	5.7	<p>The pre-qualification of a joint venture does not necessarily pre-qualify any of its partners to tender individually or as a partner in any other joint venture or association. In case of dissolution of a joint venture prior to the submission of tenders, any of the constituent firms may pre-qualify if they meet all of the pre-qualification requirements, subject to the written approval of the Employer. Individual members of a dissolved joint venture may participate as subcontractor to qualified Applicants, subject to the provisions mentioned below:</p> <ul style="list-style-type: none"> <li>a. Only firms and joint ventures that have been pre-qualified under this procedure may submit a tender.</li> <li>b. A firm shall submit only one tender in the same tendering</li> </ul>

		<p>process, either individually as a Tenderer or as a partner of a joint venture.</p> <p>c. No firm can be a subcontractor while submitting a tender individually or as a partner of a joint venture in the same tendering process.</p> <p>d. A firm, if acting in the capacity of Subcontractor in any tender, may participate in more than one tender, but only in that capacity.</p> <p>e. A Tenderer who submits, or participates in, more than one tender will cause all the proposals in which the Tenderer has participated to be disqualified.</p>
<b>6. <u>REQUEST FOR CLARIFICATION</u></b>		
Notification and Response	6.1	<p>Applicants are responsible for requesting any clarification of the Tender documents. A request for clarification shall be made in writing to the Employer's address indicated in the PITA. The Employer will respond to any request for clarification that it receives earlier than 14 days prior to the deadline for submission of applications. Copies of the Employer's response, including a description of the inquiry but without identifying its source, will be forwarded to all purchasers of the tender documents.</p>
<b>7. <u>SUBMISSION OF APPLICATIONS</u></b>		
Delivery	7.1	<p>The Tendering through E-procurement system:</p> <p>The tenderer shall upload their tenders through e-procurement platform. No other modes of submission are permitted. The tendering is through website <a href="https://kppp.karnataka.gov.in/">https://kppp.karnataka.gov.in/</a> Detailed guidelines for viewing of tenders and submission of online tenders are given in the website. The prospective tenderers can submit their tender online. However, the tenderers are required to have enrolment/registration in the web site and should have valid Digital Signature Certificate (DSC). The DSC can be obtained from any authorized certifying agencies as given in the e-procurement portal. The tenderers should register in the web site</p>



		<a href="https://kpppp.karnataka.gov.in/">https://kpppp.karnataka.gov.in/</a> After this, the tenderer can log in the site through the secured login. Tenders must be submitted/uploaded no later than on (as per the e-procurement platform) The e-procurement platform will not accept the tenders after the stipulated date and time (as per the clock of the e-procurement platform).
Late Applications	7.2	Tenders cannot be uploaded by the tenderers after the dead line for submission / uploading of tenders (as per the clock of the e-procurement platform) prescribed by the employer
Lack of Information	7.3	Failure of an Applicant to provide comprehensive and accurate information that is essential for the Employer's evaluation of the Applicant's qualifications, or to provide timely clarification or substantiation of the information supplied, may result in disqualification of the Applicant.
Material Changes	7.4	Applicants, and those subsequently pre-qualified or conditionally pre-qualified, shall inform the Employer of any material change in information that might affect their qualification status. Tenderers shall be required to update key pre- qualification information at the time of tendering Prior to award of contract, the lowest evaluated tenderer will be required to confirm its continued qualified status in a post-qualification review process.
<b>8. <u>EMPLOYER'S NOTIFICATION AND TENDER PROCESS</u></b>		
Invitation for Tender	8.1	Within the period stated in the PITA from the date for submission of applications, the Employer will notify all Applicants in writing of the results of their application, and of the names of all pre-qualified and conditionally pre-qualified applicants (see Sub-Clause 8.2 below). At the same time, successful applicants will be invited to submit a tender, in the format of the Invitation for Tenders annexed to the PITA.
Conditional Pre-qualification	8.2	NA- Deleted .

One Tender per Tenderer	8.3	Only firms and joint ventures that have been pre-qualified under this procedure may submit a tender. A firm shall submit only one tender in the same tendering process, either individually as a Tenderer or as a partner of a <b>joint venture</b> . No firm can be a subcontractor while submitting a tender individually or as a partner of a joint venture in the same tendering process. A firm, if acting in the capacity of <b>Sub contractor</b> in any tender, may participate in more than one tender, but only in that capacity. A Tenderer who submits, or participates in, more than one tender will cause all the proposals in which the Tenderer has participated to be disqualified.
Earnest Money Deposit	8.4	Tenderers will be required to provide earnest money deposit in the form and amount indicated in the tender documents. The successful tenderer will be required to provide performance security in the form and amount indicated in the tender documents.
Changes after Pre-qualification	8.5	Any change in the structure or formation of an Applicant after being pre-qualified and invited shall be subject to written approval of the Employer prior to the deadline for submission of bids. Such approval will be denied if as a consequence of any change: <ul style="list-style-type: none"> <li>a. an individual firm, or a joint venture as a whole, or any individual member of the JV fails to meet any of the collective or individual qualifying requirements.</li> <li>b. the new partners to a joint venture were not pre-qualified in the first instance, either as individual firms or as another joint venture; or</li> <li>c. in the opinion of the Employer, a substantial reduction in competition may result.</li> </ul>
Employer's Rights	8.6	The Employer reserves the right to take the following actions, and shall not be liable for any such actions: <ul style="list-style-type: none"> <li>a. amend the scope and cost of any contract to be tendered under this project, in which event tenders will be invited only from those applicants who meet the resulting amended pre-qualification requirements;</li> <li>b. reject or accept any pre-qualification application, and/or any late</li> </ul>

		application; and
		<b>c.</b> cancel the pre-qualification process and reject all applications.

### 3. PARTICULAR INSTRUCTIONS TO APPLICANTS (PITA)

The PITA below is formatted for pre-qualification related to either a single (individual) contract or multiple contracts (“slice and package”).

GITA Sub-Clause Reference	These particular instructions and related Information Forms (IF) are intended to complement, amend, or supplement the provisions in the GITA. In the event of conflict or ambiguity, the provisions in the PITA shall prevail over those in the GITA.
1.1	<p><b><u>Name of Project:</u></b></p> <p><b>“Construction of Cold Storage of Capacity 2000 MT at Chawenahally Horticulture Farm, Malur Taluk, Kolar District – Karnataka under NABARD RIDF-29”</b></p> <p><b>PART I: ON ITEM RATE TENDER BASIS</b></p> <p>A. Construction of 2000 MT Capacity - Cold Storage</p> <p>B. Cold storage facility including insulated panel structure refrigeration and allied systems including Utility room, miscellaneous items, electrical installation,</p> <p>C. Basic infrastructure facilities Security room, Sump, Compound wall, Roads, Storm water drain, basic electrical and plumbing, transformer, Generator etc.,</p>
1.2	<p><b><u>The Employer:</u></b></p> <p>Joint Director of Horticulture (Vegetable Section), Lalbagh, Bengaluru Karnataka - 560 004 Email id : jdhveg@gmail.com</p>
1.3	<p><b><u>Slice and Package:</u> NO</b></p> <p><b><u>Concurrent tendering on more than one contract:</u></b></p>

1.4	<b><u>Tender Invitation</u></b>
	<b>Date:10.03.2024</b>
4.11	<b><u>Audited Balance Sheets or Financial Statement</u></b>
	<b>5 Years</b> (Financial year 2018-19 to 2022-2023, ) the applicants should furnish balance sheet, Profit and loss statement, IT returns or any other relevant document to establish the financial capabilities
5.4	<b><u>Joint Ventures</u></b>
	<b>Partner Limitation is three.</b> [To enable the JV, the partner in charge /Lead partner shall have 50% of the qualifying criteria specified in sub-clause 4.7(b) and 4.9 of PITA (Part B). All members of the Joint Venture must have experience in execution of similar works stated in 4.8 (a)] of PITA (Part B).
6.1	<b><u>Requests for Clarification:</u></b>
	Address: Joint Director of Horticulture (Vegetable Section), Lalbagh, Bengaluru Karnataka - 560 004 Email id : jdhveg@gmail.com
7.1	<b><u>Submission of Applications:</u></b>
	<p>The tenderer shall upload their tender through E-procurement platform. No other modes of submission are permitted. The Tendering is through website <a href="https://kppp.karnataka.gov.in/">https://kppp.karnataka.gov.in/</a>. The detailed guidelines for viewing of tenders and submission of online tenders are given in the website. The prospective tenderers can submit their tenders online. However, the tenderers are required to have enrollment/ registration in the website and should have valid digital signature certificate (DSC). The DSC can be obtained from any authorized certifying agencies as given in the e-procurement portal. The tenderers should register in the website <a href="https://kppp.karnataka.gov.in/">https://kppp.karnataka.gov.in/</a>. After this, the tenderers can login in the site through the secured login. Tenders must be submitted/ uploaded no later than (As per e-procurement portal). The e-procurement platform will not accept the tenders after the stipulated date and time. As per the clock of the e-procurement platform.</p> <p>Address:</p>

	Joint Director of Horticulture (Vegetable Section), Lalbagh, Bengaluru Karnataka - 560 004 Email id : jdhver@gmail.com
8.1	<p><b><u>Employer's Notification</u></b></p> <p>Time period from the closing date for submission of application- <b>45 Days</b></p>

## 4. CONDITIONS OF CONTRACT

### A. GENERAL

#### Definitions

**1.1** Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meanings. Bold letters are used to identify defined terms.

**Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Tender.

**Compensation events** are those defined in Clause 38 hereunder.

The **Completion Date** is the date of completion of the Works as certified by the Employer in accordance with Sub Clause 46.1.

The **Contract** is the contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in Clause 2.2 below.

The **Contract Data** defines the documents and other information which comprise the Contract.

The **Contractor** is a person or corporate body whose Tender to carry out the Works has been accepted by the Employer.

The **Contractor's Tender** is the completed Tender document submitted by the Contractor to the Employer.

The **Contract price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

**Days** are calendar days; **months** are calendar months.

A **Defect** is any part of the Works not completed in accordance with the Contract.

The **Defects liability period** is the period named in the Contract Data and calculated from the Completion Date.

The **Employer** is the party who will employ the Contractor to carry out the Works.

**Equipment** is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The **Initial Contract price** is the Contract Price listed in the Employer's Letter of Acceptance.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Employer by issuing an extension of time.

**Materials** are all supplies, including consumables, used by the contractor for incorporation in the Works.

**Plant** is any integral part of the Works which is to have a mechanical, electrical, electronic or chemical or biological function.

The **Site** is the area defined as such in the Contract Data.

**Specification** means the Specification of the Works included in the Contract and any modification or addition made or approved by the Employer.

The **Start Date** is given in the Contract Data. It is the date when the Contractor shall commence execution of the works. It does not necessarily coincide with any of the Site Possession Dates.

A **Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract which includes work on the Site.

A **Variation** is an instruction given by the Employer which varies the Works.

The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the Contract Data.

## **Interpretation**

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



**2.2** The documents forming the Contract shall be interpreted in the following order of priority:

- a. Agreement
- b. Letter of Acceptance, notice to proceed with the works
- c. Contractor's Tender
- d. Contract Data
- e. Conditions of Contract
- f. Specifications
- g. Drawings
- h. Bill of quantities and
- i. any other document listed in the Contract Data as forming part of the Contract.

**Law governing contract**

**3.1** The law governing the Contract is the Laws of India supplanted by the Karnataka Local Acts.

**Employer's decisions**

**4.1** Except where otherwise specifically stated, the Employer will decide contractual matters between the Employer and the Contractor.

**Delegation**

**5.1** The Employer may delegate any of his duties and responsibilities to other people after notifying the Contractor and may cancel any delegation after notifying the Contractor.

**Communications**

**6.1** Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

**Subcontracting**

**7.1** The Contractor may subcontract with the approval of the Employer but may not assign the Contract without the approval of the Employer in writing. Subcontracting does not alter the Contractor's obligations.

### **Other Contractors**

**8.1** The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Employer.

### **Personnel**

**9.1** The Contractor shall employ the technical personnel (of number and qualifications) as may be stipulated by GOK from time to time during the execution of the work. The technical staff so employed shall be available at site as may be stipulated by the Employer.

**9.2** If the Employer asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

### **Employer's and Contractor's risks**

**10.1** The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

### **Employer's risks**

**11.1** The Employer is responsible for the excepted risks which are:

- a. rebellion, riot commotion or disorder unless solely restricted to employees of the Contractor or his Sub-Contractors arising from the conduct of the Works; or
- b. a cause due solely to the design of the Works, other than the Contractor's design; or
- c. any operation of the forces of nature (in so far as it occurs on the Site) which an experienced contractor:
  - Could not have reasonably foreseen; or
  - Could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures.
    - › prevent loss or damage to physical property from occurring by taking appropriate measures or
    - › insure against such loss or damage

### **Contractor's risks**

**12.1** All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

### **Insurance**

**13.1** The Contractor shall prior to commencing the works, effect and thereafter maintain insurances, in the joint names of the Employer and the Contractor, (cover from the first working day after the Start Date to the end of Defects Liability Period), in the amounts stated in the Contract Data:

- a. for loss of or damage to the Works, Plants and Materials and the Contractor's equipment;
- b. for liability of both Parties for loss, damage, death and injury to third parties or their property arising out of the Contractor's performance of the Contract including the Contractor's liability for damage to the Employer's property other than the Works and
- c. for liability of both Parties and of any Employer's representative for death and injury to the Contractor's personnel except to the extent that liability arises from the negligence of the Employer, any Employer's representative or their Employees.

**13.2** Policies and certificates for insurance shall be delivered by the Contractor to the Employer for his approval before the Start Date. All such insurance shall provide for compensation to be payable to rectify the loss or damage incurred. All payments received from insurers relating to loss or damage shall be held jointly by the Parties and used for the repair of the loss or damage or as compensation for loss or damage that is not to be repaired.

**13.3** If the Contractor fails to effect or keep in force any of the insurances referred to in the previous subclauses or fails to provide satisfactory evidence, policies or receipts, the Employer may without prejudice to any other right or remedy, effect insurance for the cover relevant to such default and pay the premiums due and recover the same as a deduction from any other monies due to the Contractor. If no payments is due, the payment of the premiums shall be a debt due.

**13.4** Alterations to the terms of an insurance shall not be made without the approval of the Employer.

**13.5** Both Parties shall comply with any conditions of the insurance policies.

**Site Investigation Reports:**

**14.1** The Contractor, in preparing the tender, shall rely on any site investigation reports referred to in the Contract data, supplemented by any information available to the Tenderer.

**Queries about the Contract Data**

**15.1** The Employer will clarify queries on the Contract Data.

**Contractor to construct the Works**

**16.1** The Contractor shall construct the Works in accordance with the Specification and Drawings.

**The Works to be completed by the Intended Completion Date**

**17.1** The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the program submitted by the Contractor, as updated with the approval of the Employer, and complete them by the Intended Completion Date.

**Approval by the Employer:**

**18.1** The Contractor shall submit Specification and drawings showing the proposed Temporary Works to the Employer, who is to approve them if they comply with the Specifications and Drawings.

**18.2** The Contractor shall be responsible for the design of Temporary Works

**18.3** The Employer's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

**18.4** The Contractor shall obtain approval of third parties to the design of third parties to the design of the temporary Works where required.

**18.5** All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Employer before their use.

**Safety**

**19.1** The Contractor shall be responsible for the safety of all activities on the Site.

### **Discoveries**

**20.1** Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Employer. The Contractor is to notify the Employer of such discoveries and carry out the Employer's instructions for dealing with them.

### **Possession of the Site**

**21.1** The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Contract Data the Employer is deemed to have delayed the start of the relevant activities and this will be Compensation Event.

### **Access to the Site**

**22.1** The Contractor shall allow the Employer and any person authorized by the Employer access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured / fabricated / assembled for the works.

### **Instructions**

**23.1** The Contractor shall carry out all instructions of the Employer which comply with the applicable laws where the Site is located.

### **Procedure for resolution of Disputes:**

**24.1** If the Contractor is not satisfied with the decision taken by the Employer, the dispute shall be referred by either party to Arbitration within 30 days of the notification of the Employer's decision.

**24.2** If neither party refers the dispute to Arbitration within the above 30 days, the Employer's decision will be final and binding.

**24.3** The Arbitration shall be conducted in accordance with the arbitration procedure stated in the Special Conditions of Contract.

## **B. TIME CONTROL**

### **Program**

**25.1** Within the time stated in the Contract Data the Contractor shall submit to the Employer for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works.

**25.2** The Employer's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Employer again at any time. A revised Program is to show the effect of Variations and Compensation Events.

### **Extension of the Intended Completion Date**

**26.1** The Employer shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date.

**26.2** The Employer shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Employer for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information.

### **Delays ordered by the Employer**

**27.1** The Employer may instruct the Contractor to delay the start or progress of any activity within the Works.

### **Management meetings**

**28.1** The Employer may require the Contractor to attend a management meeting. The business of a management meeting shall be to review the progress achieved and the plans for remaining work.

**28.2** The responsibility of the parties for actions to be taken is to be decided by the Employer either at the management meeting or after the management meeting and stated in writing to be distributed to all who attended the meeting.

## **C. QUALITY CONTROL**

### **Identifying defects**

**29.1** The Employer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Employer may instruct the Contractor to search for a Defect and to uncover and test any work that the Employer considers may have a Defect

### **Tests**

**30.1** If the Employer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect the test shall be a Compensation Event.

### **Correction of defects**

**31.1** The Employer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

**31.2** Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Employer's notice.

### **Uncorrected defects**

**32.1** If the Contractor has not corrected a Defect within the time specified in the Employer's notice, the Employer will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

## **D. COST CONTROL**

### **Bill of Quantities (BOQ)**

**33.1** The BOQ shall contain items for the construction, installation, testing, and commissioning work to be done by the Contractor.

**33.2** The BOQ is used to calculate the Contract Price. The Contractor is paid for the quantity of the workdone at the rate in the BOQ for each item.

### **Variations**

**34.1** The Employer shall have power to order the Contractor to do any or all of the following as considered necessary or advisable during the progress of the work by him

- › Increase or decrease of any item of work included in the Bill of Quantities (BOQ);
- › Omit any item of work;
- › Change the character or quality or kind of any item of work;
- › Change the levels, lines, positions and dimensions of any part of the work;
- › Execute additional items of work of any kind necessary for the completion of the works; and
- › Change in any specified sequence, methods or timing of construction of any part of the work.

**34.2** The Contractor shall be bound to carry out the work in accordance with any instructions in this connection, which may be given to him in writing by the Employer and such alteration shall not vitiate or invalidate the contract.

**34.3** Variations shall not be made by the Contractor without an order in writing by the Employer, provided that no order in writing shall be required for increase or decrease in the quantity of an item appearing in the BOQ so long as the work executed conforms to the approved drawings.

**34.4** The Contractor shall promptly request in writing the Employer to confirm verbal orders and if no such confirmation is received within 15 days of request, it shall be deemed to be an order in writing by the Employer.



### **Payments for Variations**

**35.1** Payment for increase in the quantities of an item in the BOQ up to 25% of that provided in the Bill of Quantities shall be made at the rates quoted by the Contractor.

**35.2** For quantities in excess of 125% of the tendered quantity of an item as given in the BOQ, the Contractor shall be paid at the rate entered in or derived from in the Schedule of Rates (applicable for the area of the work and current at the time of award of contract) plus or minus the overall percentage of the original tendered rates over the current Schedule of Rates prevalent at the time of award of contract.

**35.3** If there is no rate for the additional, substituted or altered item of the work in the BOQ, efforts would be made to derive the rates from those given in the BOQ or the Schedule of Rates (applicable for the area of the work and current at the time of award of contract) and if found feasible the payment would be made at the derived rate for the item plus or minus the overall percentage of the original tendered rates over the current Schedule of Rates prevalent at the time of award of contract.

**35.4** If the rates for additional, substituted or altered item of work cannot be determined either as at 35.1 or 35.2 or 35.3 above, the Contractor shall be requested to submit his quotation for the items supported by analysis of the rate or rates claimed, within 7 days.

**35.5** If the Contractor's quotation is determined unreasonable, the Employer may order the Variation and make a change to the Contract Price which shall be based on Employer's own forecast of the effects of the Variation on the Contractor's costs.

**35.6** If the Employer decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

**35.7** Under no circumstances the Contractor shall suspend the work on the plea of non-settlement of rates for items falling under this Clause.

### **Submission of bills for payment**

**36.1** The Contractor shall submit to the Employer monthly bills of the value of the work completed less the cumulative amount paid previously as per Schedule in Annexure- A

**36.2** The Employer shall check the Contractor's bill and determine the value of the work executed which shall comprise of (i) value of the quantities of the items in the BOQ completed and (ii) valuation of Variations and Compensation Events.

**36.3** The Employer may exclude any item paid in a previous bill or reduce the proportion of any item previously paid in the light of later information.

### **Payments**

**37.1** Payments shall be adjusted for deductions for advance payments, other recoveries ( 5% additional security deposit ) in terms of the contract and taxes, at source, as applicable under the law. The Employer shall pay the Contractor the within 60 days of submission of bill.

**37.2** Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

### **Compensation events**

**38.1** The following are Compensation events unless they are caused by the Contractor:

- › The Employer does not give access to a part of the Site by the Site Possession Date stated in the Contract Data.
- › The Employer orders a delay or does not issue drawings, specifications or instructions required for execution of works on time.
- › The Employer instructs the Contractor to uncover or to carry out additional tests upon work which is then found to have no Defects.
- › The Employer gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.
- › The effect on the Contractor of any of the Employer's Risks.
- › The Employer unreasonably delays issuing a Certificate of Completion.
- › Other Compensation Events listed in the Contract Data or mentioned in the Contract.

**38.2** If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date is extended. The Employer shall decide whether and by how much the Contract Priceshall be increased and whether and by how much the Intended Completion Date shall be extended.

**38.3** As soon as information demonstrating the effect of each Compensation event upon the Contractor's forecast cost has been provided by the Contractor, it is to be assessed by the Employer and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, theEmployer shall adjust the Contract Price based on Employer's own forecast. The Employer will assume that the Contractor will react competently and promptly to the event.

**38.4** The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor not having given early warning or not having cooperated with theEmployer.

### **Tax**

**39.1** The rates quoted by the Contractor shall be deemed to be inclusive of the sales and other taxes that theContractor will have to pay for the performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at source as per applicable law.

### **Price Adjustment**

**40.1** Deleted

**40.2** Deleted

### **Liquidated damages**

**41.1** The Contractor shall pay liquidated damages to the Employer at the rate of 0.1% per day for each day that the Completion Date is later than the Intended Completion Date (for the whole of the works or the milestone as stated in the Contract Data). The total amount of liquidated damagesshall not exceed 10% of the contract value. The Employer may deduct liquidated damages

from payments due to the Contractor. Payment of liquidated damages does not affect the Contractor's liabilities.

**41.2** If the Intended Completion Date is extended after liquidated damages have been paid, the Employer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment of bill.

**Advance Payments:**

**42.1** The Employer shall make 5 % payment to the Contractor against provision by the Contractor of an unconditional bank guarantee in a form acceptable to the Employer issued by a Nationalized/Scheduled Bank in amounts equal to the advance payment. The guarantee shall remain effective until the advance payment has been repaid, but the amount of the guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest will not be charged on the advance payment.

**42.2** The Contractor is to use the advance payment only to pay for Mobilization expenses required specifically or execution of the Works. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Employer.

**42.3** The advance payment shall be recovered at the rate of 7.50 % of the RA bills between the 10 % and 90 % of the contract values. That means the recovery will start after the cumulative RA bill of above 10% of the contract value.

**Securities:**

**43.1** The Security deposit of 5% shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and type of instrument acceptable to the Employer. The Security deposit shall be valid until a date 30 days from the date of expiry of Defects Liability Period and the additional security for unbalanced tenders shall be valid until a date 30 days from the date of issue of the certificate of completion.

**Cost of Repairs:**

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

## **E. FINISHING THE CONTRACT**

### **Completion**

**45.1** The Contractor shall request the Employer to issue a Certificate of Completion of the Works and the Employer will do so upon deciding that the Work is completed.

### **Taking over**

**46.1** The Employer shall take over the Site and the Works within seven days of issuing a certificate of Completion.

### **Final account**

**47.1** The Contractor shall supply to the Employer a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Employer shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 90 days of receiving the Contractor's account if it is correct and complete. If it is not, the Employer shall issue within 90 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Employer shall decide on the amount payable to the Contractor and make payment within 60 days of receiving the Contractor's revised account.

### **As built drawings and /or Operating and Maintenance Manuals**

**48.1** If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract Data.

**48.2** If the Contractor does not supply the Drawings by the dates stated in the Contract Data, or they do not receive the Employer's approval, the Employer shall withhold the amount stated in the Contract Data from payments due to the Contractor.

### **Termination**

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

**49.2** Fundamental breaches of Contract include, but shall not be limited to the following:

- the Contractor stops work for 45 days when no stoppage of work is shown on the

current Program and the stoppage has not been authorized by the Employer;

- the Employer instructs the Contractor to delay the progress of the Works and the instruction is not withdrawn within 60 days;
- The Contractor becomes bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- a payment due to the Contractor is not paid by the Employer within 90 days of the date of the submission of the Bill by Contractor;
- the Employer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Employer;
- the Contractor does not maintain a security which is required;
- the Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract data; and
- if the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in the executing the Contract.

For the purpose of this paragraph: “corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Tenderers (prior to or after Tender submission) designed to establish Tender prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.”

**49.3** When either party to the Contract gives notice of a breach of contract to the Employer for a cause other than those listed under Sub Clause 49.2 above, the Employer shall decide whether the breach is fundamental or not.

**49.4** Notwithstanding the above, the Employer may terminate the Contract for convenience.

**49.5** If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.

### **Payment upon Termination**

**50.1** If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Employer shall prepare bill for the value of the work done less advance payments received up to the date of the bill, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor the difference shall be a debt payable to the Employer.

**50.2** If the Contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Employer shall prepare bill for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract, and less taxes due to be deducted at source as per applicable law and make payment accordingly.

### **Property**

**51.1** All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the property of the Employer, if the Contract is terminated because of a contractor's default.

### **Release from performance**

**52.1** If the Contract is frustrated by any event entirely outside the control of either the Employer or the Contractor the Employer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.



## **F. SPECIAL CONDITIONS OF CONTRACT**

### **Labour**

**53.1** The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

**53.2** The Contractor shall, if required by the Employer, deliver to the Employer a return in detail, in such form and at such intervals as the Employer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Employer may require.

### **Compliance with labour regulation**

**54.1** During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, Employer shall have the right to deduct any money due to the Contractor including his amount of security deposit. The Employer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

**54.2** The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

## **Protection of Environment**

**55.1** The contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation. During continuance of the contract, the contractor and his sub-contractors shall abide at all times by all existing enactments on environmental protection and rules made there under, regulations, notifications and bye-laws of the State or Central Government, or local authorities and any other law, bye-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority.

## **Arbitration (Clause 24)**

**56.1** The procedure for arbitration shall be as follows:

- a. In case of dispute or difference arising between the Employer and the Contractor relating to any matter arising out of or connected with this agreement it shall be settled in accordance with the Arbitration and Conciliation Act 1996. The disputes or differences shall be referred to a Sole Arbitrator. The Sole Arbitrator shall be appointed by agreement between the parties; failing such agreement, by the Appointing Authority (any one of the Organizations as per list enclosed in Annexure)
- b. Arbitration proceedings shall be held at the Joint Director of Horticulture, (Vegetable section), Lalbagh, Bangalore – 560 004, Karnataka, India.
- c. The cost and expenses of arbitration proceedings will be paid as determined by the Arbitrator. However, the expenses incurred by each party in connection with the preparation, presentation, etc., shall be borne by each party itself.
- d. Performance under the contract shall continue during the arbitration proceedings and payments due the Contractor by the Employer shall not be withheld, unless they are the subject matter of the arbitration proceedings.

**Annexure:**

List of Organizations who are considered as Appointing Authority for Appointment of Arbitrators:

1. Indian Council of Arbitration, New Delhi;
2. International Centre for Alternative Disputes Resolution (India);
3. Indian Roads Congress;
4. Indian Building Congress;
5. Indian Institute of Bridge Engineers;
6. Indian Institute of Public Health Engineers;
7. Institute of Water Works

## 5. CONTRACT DATA

The following documents are also part of the contract and clause reference is provided in the list below:

1	The schedule of operating and maintenance manuals	48 of CC
2	The methodology and program of construction	25 of CC
3	Site investigation Reports	14 of CC
4	The schedule of key and critical equipment to be deployed on the work as per agrees program of construction	25 of CC
5	The Employer is The Joint Director of Horticulture <u>Address:</u> Joint Director of Horticulture (Vegetable Section), Lalbagh, Bengaluru Karnataka - 560 004 Email id : jdhveg@gmail.com	1.1 of IIT
6	Name of Authorized Representative: Name of the Contract: Tender No:..... Dated: .....	
7	The Site possession date is.....	21 of CC
8	The start Date / Zero date is the date of issue of notice to proceed with the work	1.1 of ITT
9	The defect liability period is 12 months after the commissioning and handing over of the plant.	31 of CC

### 1. Description of work

In Karnataka, horticulture crops are grown in an area of 23.25 lakh ha with total production of 183.46 lakh MT. However, less than 2% of the total production of fruits and vegetables are being processed into different products. About 25-30% of the produce is lost due to improper post – Harvest management. Post – harvest management of produce is a highly important aspect of

farming. Some quantity of produce needs to be stored for further processing or for future table use. The losses that can occur by not storing the produce under proper conditions can be avoided using a cold storage. It enhances their shelf life and also facilitates continuous supply of produce in the market. The cold storage method stabilized the price of the product, provide equal distribution and marketing of the product.

It is being realized that proper and timely storage of produce is an essential factor in the agriculture industry and due importance is given for the same. Research has suggested that the Indian cold storage industry is making a steady growth and the annual growth rate is estimated to be 25.8 %. Currently there are more than 6000 cold storages in India and they are capable of storing a produce of 30 million tonnes.

On realizing the issues of the inefficient post-harvest management, the Karnataka Horticulture Board proposes to **Construct a Cold Storage of 2000 MT capacity at Chawenahally Horticulture Farm, Malur Taluk, Kolar District - Karnataka** and the major components of the projects are listed below:

SL.NO	DESCRIPTION
1	Cold Storage -2000 MT - Civil + PEB + Electrical
2	Technician Shed – Quality test lab, Dormitory, Supervisor room, waiting area etc
3	Security room, Sump, compound wall, road
4	Plumping – water supply lines, storm drains, sewer lines etc
5	Electrical - Trans Yard – 160 KVA transformer, 160 KVA DG room, HT line, LT lines, Street lighting etc., complete

## 2. Mile stones

- The Start date shall be the date of issue of notice to proceed with the work.
- The intended completion date for the whole of the works is 12 months for the below

projects from the date of handing over of site and execution of the agreement  
Intermediate Milestone for the above listed works will be:

<b>Milestone</b>	<b>Physical works to be completed</b>	<b>Period from the date of issue of notice to proceed with the work.</b>
Mile stone 1	<b>Formation and Foundation works</b> Mobilization, Formation of Layout, Site grading, Excavation, Filling, Foundation up to basement	3 <sup>rd</sup> month
Milestone 2	<b>Super structure work</b> Concreting of super structure including Completion of all Roof. I. Cold store with PEB roof II. Technician shed III. Others – Security room, EB yard etc	5 <sup>th</sup> month
Milestone 3	<b>Joinery and Finishing works</b> Internal works such as construction & finishing of PUF walls, partition walls, cup boards, WC fixing, Fixing of Doors, windows, ventilators, finishing of flooring, white washing, colour washing, Emulsion Painting, internal water supply, Internal sanitary and Internal electrical arrangements.	9 <sup>th</sup> month
Milestone 4	<b>Execution of HVAC Works</b> Manufacturing of Equipments, Pre-dispatch inspection by PMC and Client.	10 <sup>th</sup> month

	Supply and Erection of HVAC Equipment's, Refrigeration system and Miscellaneous plants.  Supply and Erection of Pipelines, Control Panels and Cabling and Inspection	
Milestone 5	<b>Electrical installation Works</b>  Manufacturing of Equipment's, Pre-dispatch inspection by PMC and Client.  Supply and Erection of Pipelines, Control Panels and Cabling and Inspection.	11 <sup>th</sup> month

### 3. Insurance Requirements

Insurance requirements are as under

S.No	Type of Cover	Minimum cover for Insurance
1	Works and of plant and Materials	The sum stated in the agreement plus 20%
2	Loss of damage to equipment	Full replacement cost
3	Loss of damage to property of third party	Full replacement cost
4	Personal injury or death insurance	
	a. For third party	Rs. 20 lakhs to cover 4 persons @ Rs.5 lakhs each
	b. For contractors' employees or labour	In accordance with the statutory requirements applicable to Karnataka

#### **4. Liquidated Damage (Clause 41 of CC)**

The liquidated damages for the whole of the works are Rs. 1500.00 Per day and that for the milestones are as under.

<b>S.No</b>	<b>Milestone</b>	<b>LD per day</b>
1	Milestone 1	<b>Rs.1500.00 Per day</b>
2	Milestone 2	<b>Rs.1500.00 Per day</b>
3	Milestone 3	<b>Rs.1500.00 Per day</b>
4	Milestone 4	<b>Rs.1500.00 Per day</b>
5	Milestone 5	<b>Rs.1500.00 Per day</b>
6	Milestone 5	<b>Rs.1500.00 Per day</b>

The maximum amount of liquidated damages for the whole of the works is 10 percent of final contract price.

#### **5. Advance Payments (Clause 44 of CC)**

The amount of the advance payment is:

<b>Nature of Advance</b>	<b>Amount (Rs)</b>	<b>Conditions to be fulfilled</b>
Mobilization	5% of the contract price	On submission of un-conditional bank guarantee (to be drawn before end of 20% of contract period)

The advance payment will be paid to the contractor no later than 30 days after fulfilment of the above conditions.

Repayment of advance payment for mobilization – (Clause 42 of CC)

The recovery shall be at the rate of 7.50 % of the RA bills between the 10 % and 90 % of the contract values. That means the recovery will starts after the cumulative RA bill of above 10% of the contract value.



## **6. As built drawings and Operation & Maintenance manuals (Clause 48 of CC)**

The date by which “as-built” drawings in 2 sets are required is within 30 days of issue of certificate of completion of Whole or Section of the Work as the case may be.

The date by which Operating and Maintenance Manuals are required is within 30 days of issue of certificate of completion of Whole or Section of the Work as the case may be.

The amount to be withheld for failing to supply “as built” drawings or supply of Operation and Maintenance Manuals shall be submitted before final payment.

## **7. Termination**

The following events shall also be fundamental breach of the contract. (Clause 49.2)

The contractor has contravened sub clause 7.1 and Clause 9 of CC.

The percentage to apply to the value of the work not completed representing the Employer's additional cost for completing the Works shall be 30 percent. (Clause 50.1)

## 6. Annexure- A

### SCHEDULE OF FOR INTERIM PAYMENTS

#### PAYMENT FOR CIVIL, ELECTRICAL AND FIRE FIGHTING WORKS

The Running Account bill will be payable by the Owner after submission of Bills accompanied by the relevant documents duly on monthly basis for the completed portion of the works as per the BOQ items and rates. The actual quantity of work executed will be paid as per the quoted rates, all the IT & GST deductions will be made as per the IT and GST rules applicable in force. Security deposit 5% will also be recovered in the running bills as per the relevant clause. The bills will be recorded by the client based in the certificate's payments will be released after the deductions applicable.

#### PAYMENT SCHEDULE FOR HVAC WORKS

The contract for the HVAC WORK components and the payment shall be made as under. This part does not attract escalations and the cost quoted is final and binding on the contractor. No escalations are payable under this schedule.

Sr.No.	Item of work	Rate per unit (as percentage of total Cost tendered)
1	2	3
1	On approval of drawings	20% of the contract price shall be paid against approval of construction/ fabrication drawings as certified by the consultants and on submission of a bank guarantee for an equal amount valid till issue of the certificate. The entire design shall be done by the contractor.
2	On progress of supply	50% of the contract price shall be paid on pro-rate basis depending on the receipt of goods at site in good condition. Payment will be made based on bills certified by the consultants, provided each bill amount is not less than 5% of the total contract price.

<b>3</b>	<b>On progress of erection</b>	<b>15% of the contract price</b> shall be paid on pro-rata basis, depending on the completion of erection of goods at site. Payment will be made based on bills certified by the consultants, provided each bill amount is not less than 5% of the total contract price.
<b>4</b>	<b>On completion of work:</b>	<b>10 % of the contract price</b> shall be paid on satisfactory commissioning of the entire system and on taking over in good condition subject to the clause on Liquidated damages for late delivery, on 'Taking over' of the system by the Purchaser after commissioning.
<b>5</b>	<b>The remaining 5% of the contract price shall be paid</b>	<b>After the Defect Liability period of 12 months,</b> commissioning and guarantee run of all systems.
	<ol style="list-style-type: none"> <li>1. The plant operation and maintenance cost will be paid as per the quoted rates.</li> <li>2. All statutory deductions as applicable such as TDS, work contract tax etc. shall be made from each bill before settlement. All payments shall be made in Indian rupees only.</li> <li>3. Any additional work, plant, machinery or services needed during execution other than those mentioned in BOQ needs to be quoted at the SOR Karnataka state rate of the corresponding financial year at which the tender is called for.</li> </ol>	

## LETTER OF APPLICATION

Note: Spaces marked \* on this and on subsequent forms are to be completed by the Employer.

*[letterhead paper of the Applicant or partner responsible for a joint venture, including full postal address, and telephone, facsimile and telex numbers, and cable address]*

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

To: \_\_\_\_\_  
*[name and address of the Employer]\**

Name of Project: \* \_\_\_\_\_

1. **Being duly authorized to represent and act on behalf of \_\_\_\_\_ (hereinafter referred to as “the Applicant”), and having reviewed and fully understood all of the pre-qualification requirements and information provided, the undersigned hereby applies for pre-qualification to tender on the contract or contracts indicated below:**

*\*\*Note: If pre-qualification refers to only one contract, delete the following paragraph and table, and insert the single contract reference and title.*

**\*\* We have indicated (by signature) in column (3) below our preference for individual contract consideration, or for any combination thereof within our pre-qualified capacity as assessed by you.**

Contract reference*(1)	Contract title*(2)	Preferred individual contract(3)
1.		
2.		
3.		
etc.		

*[See Annexure for the suggested number of slices]*

2. **Attached to this letter are copies of original documents defining<sup>2</sup>:**

- (a) the Applicant's legal status;
  - (b) the principal place of business; and
  - (c) the place of incorporation (for Applicants that are corporations), or the place of registration and the nationality of the owners (for Applicants that are partnerships or individually owned firms).
3. With reference to GITA Sub-Clause 4.3, it is our intention to subcontract approximately percentage of the Tender/Contract Price, details of which are provided herein.
  4. Your Agency and its authorized representatives are hereby authorized to conduct any inquiries or investigations to verify the statements, documents, and information submitted in connection with this application, and to seek clarification from our bankers and clients regarding any financial and technical aspects. This Letter of Application will also serve as authorization to any individual or authorized representative of any institution referred to in the supporting information to provide such information deemed necessary and as requested by yourselves to verify statements and information provided in this application, such as the resources, experience, and competence of the Applicant.
  5. Your Agency and its authorized representatives may contact the following persons for further information<sup>3</sup>:

General and managerial inquiries	
Contact 1	Address and communication facilities
Contact 2	Address and communication facilities

Personnel inquiries	
Contact 1	Address and communication facilities
Contact 2	Address and communication facilities

Technical inquiries	
Contact 1	Address and communication facilities
Contact 2	Address and communication facilities

Financial inquiries	
Contact 1	Address and communication facilities
Contact 2	Address and communication facilities

**6. This application is made with the full understanding that:**

- (a) **tenders by pre-qualified Applicants will be subject to verification of all information submitted for pre-qualification at the time of submission of tenders;**
- (b) **your Agency reserves the right to:**
  - **amend the scope and value of any contracts to be tendered under this project; in which event, tenders will be invited only from those Applicants who meet the resulting amended pre-qualification requirements; and**
  - **reject or accept any application, cancel the pre-qualification process, and reject all applications.**
- (c) **your Agency shall not be liable for any such actions under 6(b) above.**

7<sup>4</sup>. Appended to this application, we give details of the participation of each party, including capital contribution and profit/loss agreements, in the joint venture or association. We also specify the financial commitment in terms of the percentage of the value of the <each> contract, and the responsibilities for execution of the <each> contract.

**8. We confirm that if we tender, that tender, as well as any resulting contract, will be:**

- (a) **signed so as to legally bind all partners, jointly and severally; and**
- (b) **submitted with a joint venture agreement providing the joint and several liability of all partners in the event the contract is awarded to us.**

**9. The undersigned declare that the statements made and the information provided in the duly completed application are complete, true, and correct in every detail.**

Signed Name	Signed Name
----------------	----------------

For and on behalf of (name of Applicant or partner in charge of a joint venture)	For and on behalf of (name of partner)
--	--

Signed Name	Signed Name
For and on behalf of (name of partner)	For and on behalf of (name of partner)

Signed Name	Signed Name
For and on behalf of (name of partner)	For and on behalf of (name of partner)

- <sup>2</sup> For applications by joint ventures, all the information requested in the pre-qualification documents is to be provided for the joint venture, if it already exists, and for each party to the joint venture separately. The partner in charge should be clearly identified. Each partner in the joint venture shall sign the letter.
- <sup>3</sup> Applications by joint ventures should provide on a separate sheet equivalent information for each party to the application.
- <sup>4</sup> The attention of Applicants is drawn to GITA sub-clause 5.6 regarding Letters of Intent.

## INFORMATION FORMS

**Supplementary information may be provided by Applicants as deemed necessary.**

*These basic Information Forms should be finalized by the Employer with appropriate minor changes to suit the particular pre-qualification requirements of the specific contract or contracts.*



**General Information**

All individual firms and each partner of a joint venture applying for pre-qualification are requested to complete the information in this form. Nationality information should be provided for all owners or Applicants that are partnerships or individually owned firms.

Where the Applicant proposes to use named subcontractor (for more than 10% of contract value) as also for highly specialized components of the Works (reference Sub-Clause 4.3, 4.4 of the GITA), the following information should also be supplied for the subcontractor(s), together with the information in Forms 2, 3, 3A, 4, 5, and 7.

1.	Name of firm	
2.	Head office address	
3.	Telephone	Contact
4.	Fax	Telex
5.	Place of incorporation / registration	Year of incorporation / registration

Nationality of owners <sup>1</sup>		
Name		Nationality
1.		
2.		
3.		
4.		
5.		

1. To be completed by all owners of partnerships or individually owned firms.

## APPLICATION FORM (1A)

### Structure and Organization

#### I. The applicant is

- a) An Individual
- b) A proprietary firm
- c) **a firm in partnership**
- d) **a Limited Company or Corporation**
- e) **a group of firms/joint venture**  
(if yes, give completion information in respect of each partner)

2. Attach the organization Chart showing the structure of the organization, including the names of the directors and position of officers.

#### 3. Number of years of experience:

- (a) as a Prime Contractor (contractor shouldering major responsibility)
- (b) as a Management Contractor
- (c) in a Joint Venture
- (d) as sub-contractor (specify main contractor)

4. For how many years has your organization been in business of similar work under its present name? What were your fields when your organization was Established? Whether any new fields were added in Your organization? And if so, when?

5. Were you ever required to suspend construction for a period of more than six months continuously after you started? If so, give the name of project and give reasons therefor.

6. Have you ever left the work awarded to you incomplete? (If so, give name of project and reasons for not completing work.)

7. In which fields of civil engineering construction do you claim specialization and interest?
8. Give details of your experience in mechanized cement concrete lining and in modern concrete technology for manufacture and quality control@.
9. Give details of your experience in using heavy earthmoving equipment and quality control in compaction of soils@.
10. Give details of your soil and material testing laboratory, if any@.
11. Give details of your experience in mechanized granular pavement construction@.
12. Give details of your experience in Laying of Prime coat along with spreading of dry stone chipping@.
13. Give details of your experience in construction of asphaltic Overlays@.
14. Give details of your experience in construction of Bridge Works in Reinforced Cement Concrete@.
15. Give details of your experience in construction of Bridge Works in plain Cement Concrete@.
16. Give details of your experience in construction of bridge Works in Well Foundations of a depth not less than 12 metres@.

@ *Modify there as appropriate for the works for which pre-qualification applications are invited.*

**General Construction Experience Record**

(ref. GITA Sub-Clause 4.7)

Name of Applicant or partner of a joint venture

---

All individual firms and all partners of a joint venture are requested to complete the information in this form with regard to the management of Works contracts generally. The information supplied should be the annual turnover of the Applicant (or each member of a joint venture), in terms of the amounts billed to clients (in Rs. Lakhs) for each year for work in progress or completed. The annual periods should be the completed financial years.

A brief note on each contract should be appended, describing the nature of the work, duration and amount of contract, managerial arrangements, Employer, and other relevant details.

Use a separate sheet for each partner of a joint venture.

Applicants should not enclose testimonials, certificates, and publicity material with their applications; they will not be taken into account in the evaluation of qualifications.

Year*	Turnover (Rs. Lakhs)
1.	
2.	
3.	
4.	
5.	

**Joint Venture Summary**

Names of all partners of a joint venture
I. Partner in charge
2. Partner
3. Partner
4. Partner
5. Partner
6. etc.

Total value of annual construction turnover, in terms of work billed to clients, in Rs. Lakhs

Annual turnover data (construction only in Rs. Lakhs)						
Partner	Form 2 page no.	Year 1	Year 2	Year 3	Year 4	Year 5
I. Partner in charge						
2. Partner						
3. Partner						
Totals						

Name and address of Bankers to the Joint Venture:

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Details regarding financial responsibility and participation (percentage share in the total) of each firm in the Joint Venture. Attach a Memorandum of Understanding for the Proposed Agreement of Joint Venture which should laydown responsibility regarding work and financial arrangements in respect of each of the firms in the Joint Venture (Refer Clause 5.00).

**DETAILS OF PARTICIPATION IN THE JOINT  
VENTURE**

**(Indicate responsibility and extent of participation in respect of finance planning,  
construction equipment, key personnel and execution of the work of the partner in  
charge of the joint venture and of each of the joint venture partners)**

PARTICIPATION DETAILS	FIRM A [Partner-in-Charge]	FIRM B	FIRM C
Financial			
Planning			
Construction Equipment			
Key Personnel			
Execution of Work (Give details on contribution of each)			

**Particular Construction Experience Record**  
(ref. GITA Sub-Clause 4.8)

Name of partner of a Joint Venture \_\_\_\_\_

To pre-qualify, the Applicant shall be required to pass the specified requirements applicable to this form, as set out in the PITA.

On separate pages, using the format of Form (3A), the Applicant is requested to list contracts of a similar nature, complexity, and requiring similar construction technology to the contract or contracts for which the Applicant wishes to qualify, and which the Applicant has undertaken during the period, and of the number, stated in 4.8 of the PITA. Each partner of a joint venture should provide details of similar contracts on which they have experienced. The contract value should be based on the payment, at the date of substantial completion, or for ongoing contracts at the time of award. The information is to be summarized, using Form (3A), for each contract completed or under execution, by the Applicant or by each partner of a joint venture.

Where the Applicant proposes to use named subcontractors for highly specialized elements of the Works (reference Sub-Clause 4.4 of the GITA), the information in the following forms should also be supplied for each subcontractor (or alternate, if any).

**Details of Contracts of Similar Nature and Complexity**

Name of partner of a Joint Venture
------------------------------------

Use a separate sheet for each contract.

1.	Number of contract	
	Name of contract	
	Country	
2.	Name of Employer	
3.	Employer address	
4.	Nature of works and special features relevant to the contract for which the Applicant wishes to prequalify	
5.	Contract role (check one) <input type="checkbox"/> Prime contractor <input type="checkbox"/> Management contractor <input type="checkbox"/> Subcontractor <input type="checkbox"/> Partner in a joint venture	
6.	Amount of the total contract/subcontract/partner share ( at completion, or at date of award for current contracts) Rs.	
7.	Total contract: Rs. Lakhs____; Subcontract: Rs. Lakhs____; Partner share: Rs. Lakhs____	
8.	Date of award/completion	
9.	Contract was completed____months ahead/behind original schedule (if behind, provide explanation).	
10.	Contract was completed Rs. Lakhs    under/over original contract amount (if over, provide explanation).	
11. *	Special contractual/constructional requirements, including monthly/annual production rates of the key construction activities described in PITA 4.8	
12.	Indicate the approximate percent of total contract value of work undertaken by subcontract, if any, and the nature of such work.	

\* *Attach specific formats for the information required.*



### Details of Production Levels in Key Construction Activities

(Sl. No. 11 of Information Form 3A)

	Name of Contract	Employer Contact Address, Agreement No. and Date	Value (Rs. Lakhs)	Year <sup>5</sup>	Quantities Executed			
1								
2.								
3.								

**Summary Sheet: Current Contract Commitments / Works in Progress**

Name of partner of a Joint Venture
------------------------------------

Each partner to an application should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Name of contract	Employer, contact address/ tel/fax	Value of outstanding work (Rs. Lakhs)	Estimated completion date	Average monthly invoicing over last six months (Rs. Lakhs)
1.				
2.				
3.				
4.				
5.				
etc.				

In accordance with GITA Sub-Clause 4.10, the Applicant shall provide evidence (in a similar manner to the requirements of Sub-Clause 4.9) to substantiate the adequacy of the sources of finance to meet the Applicant's cash flow requirements on the above contracts.

INFORMATION FORM (4A)

**FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF  
OVERDRAFT/CREDIT FACILITIES**

**BANK CERTIFICATE**

This is to certify that M/s \_\_\_\_\_ is a reputed company with a good financial standing.

If the contract for the work, namely \_\_\_\_\_ is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs. \_\_\_\_\_ to meet their working capital requirements for executing the above contract.

--sd--

**Name of the bank**

**Senior Bank manager**

**Address of the bank**

**Note: this certificate has to be obtained from the banker and uploaded on the e-procurement portal.**

**Financial Capabilities**

Name of partner of a Joint Venture
------------------------------------

Each partner of a joint venture, shall provide financial information to demonstrate that they meet the requirements stated in the GITA. Each applicant or partner of a joint venture shall complete this form. If necessary, separate sheets shall be used to provide complete banker information. A copy of the audited balance sheets shall be attached.

Autonomous construction subdivisions of parent conglomerate businesses shall submit financial information related only to the particular activities of the subdivision.

Banker	Name of banker	
	Address of banker	
	Telephone	Contact name and title
	Fax	Telex

Summarize actual assets and liabilities in Rs. Lakhs for the previous five calendar years, or such period as stated in PITA 4.11. Based upon known commitments, summarize projected assets and liabilities in Rs. Lakhs for the next two calendar years, unless the withholding of such information by stock market listed public companies can be substantiated by the Applicant.

Financial information in Rs. Lakhs	Actual: Previous five years						Projected: Next two years	
	5.	4.	3.	2.	1.	0	1	2
1. Total assets								
2. Current assets								
3. Total liabilities								
4. Current liabilities								
5. Profits before taxes								
6. Profits after taxes								

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as indicated in GITA 4.9.

Source of financing	Amount (Rs. Lakhs)
1.	
2.	
3.	
4.	

Attach audited financial statements—including, as a minimum, profit and loss account, balance sheet, and explanatory notes—for the period stated in PITA 4.11 (for each partner of a joint venture).

**Personnel Capabilities**

Name of Applicant
-------------------

For specific positions **essential** to contract management and implementation, Applicants should provide the names of at least two candidates qualified to meet the specified requirements stated for each position. The data on their experience should be supplied on separate sheets using one Form (6A) for each candidate.

Applicants may propose alternative management and implementation arrangements requiring different key personnel, whose experience records should be provided.

1.	Title of position*
	Name of prime candidate
	Name of alternate candidate
2.	Title of position*
	Name of prime candidate
	Name of alternate candidate
3.	Title of position*
	Name of prime candidate
	Name of alternate candidate
4.	Title of position*
	Name of prime candidate
	Name of alternate candidate

*\*As listed in PITA 4.12.*

## Candidate Summary

Name of Applicant
-------------------

Position		Candidate <input type="checkbox"/> Prime <input type="checkbox"/> Alternate	
Candidate information	Name of candidate	Date of birth	
	Professional qualifications		
Present employment	Name of employer		
	Address of employer		
	Telephone	Contact (manager / personnel officer)	
	Fax	Telex	
	Job title of candidate	Years with present employer	

Summarize professional experience over the last twenty years, in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

[illegible]

**Equipment Capabilities**

(ref. GITA Sub-Clause 4.13)

Name of Applicant
-------------------

The Applicant shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for each and all items of equipment listed in the PITA 4.13. A separate Form (7) shall be prepared for each item of equipment listed in the PITA, or for alternative equipment proposed by the Applicant.

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment <input type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially manufactured	

Omit the following information for equipment owned by the Applicant or partner.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	



(ref. GITA Sub-Clause 4.14)

Name of partner of a Joint Venture
------------------------------------

Each of the partners of a joint venture, shall provide information on any history of litigation or arbitration resulting from contracts executed in the last five years or currently under execution. A separate sheet should be used for each partner of a joint venture.

[illegible]

**PLANT AND MACHINERY - REFRIGERATION EQUIPMENTS (FREON)** - Air Cooled Condensing units with Ceiling suspended Evaporators - AIR COOLED CONDENSING UNITS FOR COLD ROOM Air Cooled Scroll Condensing Unit with Energy Efficient Refrigeration Compressor with copper coils with aluminium fins, axial flow fans, HP/LP switch, liquid line filter drier and canopy. Supply of High Efficiency Evaporators, Refrigeration Accessories Comprising of Thermostatic Expansion Valve, Liquid Line Sight Glass, First Charge of gas, Copper Pipes and pipe fittings for suction line and liquid line (considering 12 RMT distance between condensing unit and evaporator), suction line insulation, Temperature Controller, Electricals comprising of Single Phase Preventer with under and over voltage protection, MCB, Electrical contactors, Electrical Cables from CDU to Evaporator Fans (Total - 12 Units ) as Per Enclosed Specifications.

Design Ambient temperature - 45 Deg C

Design Inside Temperature - +4 Deg C

**High Efficiency Air Cooled Refrigeration Scroll Condensing Units-**

Air cooled Condensing Units with Refrigeration Compressor for the above application with suction and discharge isolation valves, HP/LP Switch, suction line accumulator, Liquid receiver and Canopy. Cooling Capacity of each Condensing Unit: 6.4 TR each -4 deg.C SST / +50 deg.C SDT with R404a refrigerant. Number of Condensing Units : Twelve Nos (Two Nos for Each Chamber).

**Evaporators-** Evaporators High Efficiency Ceiling Suspended Evaporators Powder Coated Casing, Copper Coil with Aluminium Fins, High Efficiency Axial Flow Fans and Drain Pan with min 7mm Fin Spacing. Number of Evaporators : Twelve Nos (Two Nos for Each Chamber).

**Refrigeration Controls-**Refrigeration Controls for the above units comprising of Danfoss Thermostatic Expansion Valves, Hand shut off Valves, etc

**Refrigerant Piping-**Refrigeration Pipes and Pipe Fittings comprising of Heavy Duty Seamless Copper Pipes, Pipe Fittings, Nitrile Rubber Insulation for Suction Lines (considering 12 RMT distance between CDU and Evaporators ) with first charge of R404A Refrigerant.

**Electrical Panel for Individual Refrigeration Units-**Weather Proof Electrical Panels for Individual Refrigeration Units with Siemens MCBs, Contactors, OLRs for Compressors, Condenser Fans and Evaporator Fans to be positioned next to the condensing units along with Digital Temperature Indicator cum Controller with real time auto air defrost.

**Electrical Cabling-**Electrical Cabling from the individual Control panels to the respective compressors, condenser fans, evaporators.

**Supports for Cables and Piping-**Ladder type GI Cable Tray Supports for Electrical Cables, MS Angle and Channel Supports with painting for Refrigerant Piping.

**Temperature display-**Individual temperature display with Weather Proof PVC boxes in front of each room.

**Power Consumption-**Power Consumption for each units will be 11.7 Kw x 12 Nos.

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
1	1.14.1	Earth work excavation for Foundation by mechanical means for all works & depth upto 3 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work <b>In all kinds of soils Depth upto 3 m</b>							
		<b>Footing</b>							
		Footing F-1	1	x	14	2.10	2.10	1.000	61.74
		Footing F-2	1	x	6	2.40	2.40	1.000	34.56
		Footing F-3	1	x	2	2.50	2.50	1.000	12.50
		Footing F-4	1	x	9	3.10	3.10	1.000	86.49
		Footing F-5	1	x	9	3.30	3.30	1.000	98.01
		Combined Footing -CF1	1	x	1	8.00	8.30	1.000	66.40
						Total Quantity =			359.70 Cum
2	1.15.1	Earth work excavation for Foundation by mechanical means for all works & depth upto 1.5 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work. (Excavation Payable for Footing Area Only) In ordinary/soft rock without blasting upto 1.5 m depth							
		<b>Footing</b>							
		Footing F-1	1	x	14	2.10	2.10	0.500	30.87
		Footing F-2	1	x	6	2.40	2.40	0.500	17.28
		Footing F-3	1	x	2	2.50	2.50	0.500	6.25
		Footing F-4	1	x	9	3.10	3.10	0.500	43.25
		Footing F-5	1	x	9	3.30	3.30	0.500	49.01
		Combined Footing -CF1	1	x	1	8.00	8.30	0.500	33.20
		<b>Plinth Beam</b>							
		Grid B1-G1	1	x	1	12.42	0.50	0.650	4.04
		Grid B2-G2,B3-G3,B4-G4,B5-G5	1	x	4	8.02	0.50	0.650	10.43
		Grid A6-B6	1	x	1	6.68	0.50	0.650	2.17
		Grid A7-B7	1	x	1	8.28	0.50	0.650	2.69
		Grid A6-A7	1	x	1	2.64	0.50	0.650	0.86
		Grid B1-B7,G1-G7	1	x	2	17.79	0.50	0.650	11.56
		Grid C1-C7	1	x	1	9.70	0.50	0.650	3.15
		Grid D1-D7	1	x	1	10.50	0.50	0.650	3.41
		Grid E1-E7	1	x	1	13.09	0.50	0.650	4.25
		Grid F1-F7	1	x	1	12.09	0.50	0.650	3.93
						Total Quantity =			226.35 Cum
3	1.15.2	Earth work excavation for Foundation by mechanical means for all works & depth upto 1.5 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work. (Excavation Payable for Footing Area Only) In ordinary/soft rock without blasting <b>Depth exceeding 1.5 m, but not exceeding 3 m</b>							
		<b>Footing</b>							
		Footing F-1	1	x	14	2.10	2.10	0.700	43.22
		Footing F-2	1	x	6	2.40	2.40	0.700	24.19
		Footing F-3	1	x	2	2.50	2.50	0.700	8.75
		Footing F-4	1	x	9	3.10	3.10	0.700	60.54
		Footing F-5	1	x	9	3.30	3.30	0.700	68.61
		Combined Footing -CF1	1	x	1	8.00	8.30	1.400	92.96
						Total Quantity =			298.27 Cum
4	1.16.1	Earth work excavation for FOUNDATION by Mechanical means depth upto 1.50m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including cost of explosives, dressing of excavated surfaces, disposing off or levelling the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, blasting materials, tools, usage of Machinery & all other appurtenances required to complete the work <b>In Hard Rock ( requiring blasting) Depth upto 1.50m</b>							
									10.00
						Total Quantity =			10.00 Cum

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
5	1.16.2	Earth work excavation for FOUNDATION by Mechanical means depth upto 1.50m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including cost of explosives, dressing of excavated surfaces, disposing off or levelling the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, blasting materials, tools, usage of Machinery & all other appurtenances required to complete the work. <b>Depth exceeding 1.5 m, but not exceeding 3 m</b>							
									10.00
						Total Quantity =			10.00 Cum
6	1.9	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations and other similar works etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering. <b>lead up to 50 m and lift upto 1.5 m.</b>							
		Earthwork Excavation (Item No:1+2a+2b)	1	x	1		524.62		524.62
		Deductions							
		Sand Filling (Item No:5)	-1	x	1		115.75		-115.75
		P.C.C 1:4:8	-1	x	1		151.72		-151.72
		RCC	-1	x	1		217.04		-217.04
						Total Quantity =			40.11 Cum
7	1.8	Filling available approved Gravel/Murram deposited at a place or borrow pits during or prior excavation with all lifts and lead, transportation to site, spreading, grading to required slope and compacting to meet the requirement complete as per specifications, including cost of labour, rolling,water,all materials,usage& all other appurtenances required to complete the work							
		Basement Filling							
		Floor Area	1	x	1	30.84	22.90	0.450	317.81
		Stair Area	1	x	1	5.40	3.19	0.450	7.74
		Loading Area	1	x	1	26.11	1.00	0.450	11.75
		Deductions							
		Grid B1-G1, B2-G2, B3-G3, B4-G4, B5-G5	-1	x	5	19.92	0.23	0.450	-10.31
		Grid A6-G6, A7-G7	-1	x	2	22.43	0.23	0.450	-4.64
		Grid A6-A7	-1	x	1	4.76	0.23	0.450	-0.49
		Grid B1-B7, C1-C7, D1-D7, E1-E7, F1-F7, G1-G7	-1	x	6	27.24	0.23	0.450	-16.92
		Column Junction							
		Column C1	-1	x	42	0.60	0.60	0.450	-6.80
		Column C2	-1	x	2	0.38	0.38	0.450	-0.13
						Total Quantity =			298.01 Cum
8	4.1	Providing and injecting chemical emulsion for Pre-constructional Anti-Termite Treatment, creating continuous chemical barrier under and around the column pits, walls, trenches, basement excavation, top surface of the plinth filling, junction of wall and floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surrounding of pipes and conduits with Chlorpyrifos 20% E.C. / Lindane 20% E.C. @ 3.19 l/m2 including cost of chemical, diluting in water to one percent concentration, labour, usage charges of machinery, complete as per specifications							
		Plinth Area							
		Floor Area	1	x	1	30.84	22.90		706.24
		Stair Area	1	x	1	5.40	3.19		17.21
		Loading Area	1	x	1	26.11	1.00		26.11
						Total Quantity =			749.56 Sqm
9	1.23	Providing and Filling in foundation with granite / trap broken metal 100mm. And down size & with approved sand including hand packing, ramming, watering, including cost of all materials and labour with all lead and lift complete as per specifications							
		Footing							
		Footing F-1	1	x	14	2.10	2.10	0.100	6.17
		Footing F-2	1	x	6	2.40	2.40	0.100	3.46
		Footing F-3	1	x	2	2.50	2.50	0.100	1.25
		Footing F-4	1	x	9	3.10	3.10	0.100	8.65
		Footing F-5	1	x	9	3.30	3.30	0.100	9.80
		Combined Footing -CF1	1	x	1	8.00	8.30	0.100	6.64
									35.97
		Plinth Beam							
		Grid B1-G1, B2-G2, B3-G3, B4-G4, B5-G5	1	x	5	19.92	0.50	0.100	4.98
		Grid A6-G6, A7-G7	1	x	2	22.43	0.50	0.100	2.24
		Grid A6-A7	1	x	1	4.76	0.50	0.100	0.24
		Grid B1-B7, C1-C7, D1-D7, E1-E7, F1-F7, G1-G7	1	x	6	27.24	0.50	0.100	8.17
									15.63
		Flooring							
		Floor Area	1	x	1	30.84	22.90	0.100	70.62
		Stair Area	1	x	1	5.40	3.19	0.100	1.72

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
		Loading Area	1	x	1	26.11	1.00	0.100	2.61
		Deductions							
		Grid B1-G1, B2-G2, B3-G3, B4-G4, B5-G5	-1	x	5	19.92	0.23	0.100	-2.29
		Grid A6-G6, A7-G7	-1	x	2	22.43	0.23	0.100	-1.03
		Grid A6-A7	-1	x	1	4.76	0.23	0.100	-0.11
		Grid B1-B7, C1-C7, D1-D7, E1-E7, F1-F7, G1-G7	-1	x	6	27.24	0.23	0.100	-3.76
		Column Junction							
		Column C1	-1	x	42	0.60	0.60	0.100	-1.51
		Column C2	-1	x	2	0.38	0.38	0.100	-0.03
		Deduction Lift Portion	-1	x	1	4.80	4.34	0.100	-2.08
									64.14
						Total Quantity =			115.75 Cum
10	2.1.1	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Mix 1:5:10 Using 40 mm nominal size graded crushed coarse aggregates</b>							
									10.00
						Total Quantity =			10.00 Cum
11	2.1.2	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Mix 1:4:8( M5) Using 40 mm nominal size graded crushed coarse aggregates</b>							
		<b>Footing</b>							
		Footing F-1	1	x	14	2.10	2.10	0.100	6.17
		Footing F-2	1	x	6	2.40	2.40	0.100	3.46
		Footing F-3	1	x	2	2.50	2.50	0.100	1.25
		Footing F-4	1	x	9	3.10	3.10	0.100	8.65
		Footing F-5	1	x	9	3.30	3.30	0.100	9.80
		Combined Footing -CF1	1	x	1	8.00	8.30	0.100	6.64
						Total Quantity =			35.97 Cum
		<b>Plinth Beam</b>							
		Grid B1-G1, B2-G2, B3-G3, B4-G4, B5-G5	1	x	5	19.92	0.50	0.100	4.98
		Grid A6-G6, A7-G7	1	x	2	22.43	0.50	0.100	2.24
		Grid A6-A7	1	x	1	4.76	0.50	0.100	0.24
		Grid B1-B7, C1-C7, D1-D7, E1-E7, F1-F7, G1-G7	1	x	6	27.24	0.50	0.100	8.17
		<b>Flooring</b>							
		Floor Area	1	x	1	30.84	22.90	0.100	70.62
		Stair Area	1	x	1	5.40	3.19	0.100	1.72
		Loading Area	1	x	1	26.11	1.00	0.100	2.61
		Deductions							
		Grid B1-G1, B2-G2, B3-G3, B4-G4, B5-G5	-1	x	5	19.92	0.23	0.100	-2.29
		Grid A6-G6, A7-G7	-1	x	2	22.43	0.23	0.100	-1.03
		Grid A6-A7	-1	x	1	4.76	0.23	0.100	-0.11
		Grid B1-B7, C1-C7, D1-D7, E1-E7, F1-F7, G1-G7	-1	x	6	27.24	0.23	0.100	-3.76
		Column Junction							
		Column C1	-1	x	42	0.60	0.60	0.100	-1.51
		Column C2	-1	x	2	0.38	0.38	0.100	-0.03
		Deduction Lift Portion	-1	x	1	4.80	4.34	0.100	-2.08
						Total Quantity =			151.72 Cum
12	2.1.4	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Mix 1:3:6 (M10) Using 20 mm nominal size graded crushed coarse aggregates</b>							
									10.00
						Total Quantity =			10.00

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.		Description	Nos			L	B	D	Quantity	Unit
13	2.3.2	Providing and laying in Reinforced cement concrete for all Basement & surface level works, return walls, retaining walls, sunken floors etc. The granite/trap/ basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necessary, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications.(The cost including Centering and shuttering but excluding steel reinforcement) <b>M25 Design Mix Using 20 mm nominal size graded crushed coarse aggregates for Flooring Works</b>								
		<b>Ground floor Flooring</b>								
		<b>Flooring</b>								
		Floor Area	1	x	1	30.84	22.90	0.100	70.62	
		Stair Area	1	x	1	5.40	3.19	0.100	1.72	
		Loading Area	1	x	1	26.11	1.00	0.100	2.61	
		Deductions								
		Grid B1-G1, B2-G2, B3-G3, B4-G4, B5-G5	-1	x	5	19.92	0.23	0.100	-2.29	
		Grid A6-G6, A7-G7	-1	x	2	22.43	0.23	0.100	-1.03	
		Grid A6-A7	-1	x	1	4.76	0.23	0.100	-0.11	
		Grid B1-B7, C1-C7, D1-D7, E1-E7, F1-F7, G1-G7	-1	x	6	27.24	0.23	0.100	-3.76	
		Column Junction								
		Column C1	-1	x	42	0.60	0.60	0.100	-1.51	
		Column C2	-1	x	2	0.38	0.38	0.100	-0.03	
		Deduction Lift Portion	-1	x	1	4.80	4.34	0.100	-2.08	
						<b>Total Quantity =</b>			<b>64.14</b>	<b>Cum</b>
14	2.3.3	Providing and laying in Reinforced cement concrete for all Basement & surface level works, return walls, retaining walls, sunken floors etc. The granite/trap/ basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necessary, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Flooring</b>								
									10.00	
						<b>Total Quantity =</b>			<b>10.00</b>	<b>Cum</b>

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
15		The concrete finished with shall be laid and finished with screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge. (The panel shuttering work shall be paid for separately).							
		<b>Ground Floor Flooring</b>							
		Floor Area	1	x	1	30.84	22.90		706.24
		Stair Area	1	x	1	5.40	3.19		17.21
		Loading Area	1	x	1	26.11	1.00		26.11
		Deduction Lift Portion	-1	x	1	4.80	4.34		-20.80
						<b>Total Quantity =</b>			<b>728.76 Sqm</b>
16	2.4.4	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Footing</b>							
A		<b>All works upto plinth level</b>							
		Footing F-1	1	x	14	1.90	1.90	0.400	20.22
		Footing F-2	1	x	6	2.20	2.20	0.475	13.79
		Footing F-3	1	x	2	2.30	2.30	0.550	5.82
		Footing F-4	1	x	9	2.90	2.90	0.650	49.20
		Footing F-5	1	x	9	3.10	3.10	0.700	60.54
		Combined Footing -CF1	1	x	1	7.80	8.10	0.700	44.23
						<b>Total Quantity =</b>			<b>193.80 Cum</b>
17	2.4.4	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Basement to Ground floor</b>							
		Footing F-1- C1	1	x	14	0.60	0.60	1.600	8.06
		Footing F-2- C1	1	x	6	0.60	0.60	1.525	3.29
		Footing F-3- C2	1	x	2	0.38	0.38	1.450	0.42
		Footing F-4- C1	1	x	9	0.60	0.60	1.350	4.37
		Footing F-5- C1	1	x	9	0.60	0.60	1.300	4.21
		Combined Footing -CF1	1	x	4	0.60	0.60	2.000	2.88
									23.24
						<b>Total Quantity =</b>			<b>23.24 Cum</b>
		<b>Lift Pit RCC Wall</b>							
		Wall 1	1	x	2	4.19	0.30	1.550	3.89
		Wall 2	1	x	2	4.65	0.30	1.550	4.32
						<b>Total Quantity =</b>			<b>8.21 Cum</b>
						<b>Total Quantity =</b>			<b>31.46 Cum</b>
18	2.4.4	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates</b>							
c		<b>Plinth Beam</b>							
		Grid B1-G1, B2-G2, B3-G3, B4-G4, B5-G5	1	x	5	19.92	0.30	0.450	13.45

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
		Grid A6-G6, A7-G7	1	x	2	22.43	0.30	0.450	6.06
		Grid A6-A7	1	x	1	4.76	0.30	0.450	0.64
		Grid B1-B7, C1-C7, D1-D7, E1-E7, F1-F7, G1-G7	1	x	6	27.24	0.30	0.450	22.06
		Add Column Junction							
		Column C1	1	x	42	0.60	0.60	0.450	6.80
		Column C2	1	x	2	0.38	0.38	0.450	0.13
						Total Quantity =			49.14 Cum
19	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Ground Floor Column.</b>							
		Column C-1	1	x	42	0.60	0.60	5.400	81.65
		Column C-2	1	x	2	0.38	0.38	5.620	1.62
									83.27
						Total Quantity =			83.27 Cum
20	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Ground Floor Roof Beam</b>							
		<b>Roof Beam</b>							
		Grid B1-G1, B2-G2, B3-G3, B4-G4, B5-G5	1	x	5	19.92	0.45	0.600	26.89
		Grid A6-G6, A7-G7	1	x	2	22.43	0.45	0.600	12.11
		Middle Beam	1	x	11	8.86	0.38	0.380	14.07
		Middle Beam	1	x	1	4.45	0.38	0.380	0.64
		Grid A6-A7	1	x	1	4.76	0.45	0.600	1.28
		Grid B1-B7, C1-C7, D1-D7, E1-E7, F1-F7, G1-G7	1	x	6	27.24	0.45	0.600	44.13
		Middle Beam	1	x	3	25.71	0.38	0.380	11.14
		Middle Beam	1	x	1	21.37	0.38	0.380	3.09
		Loading Dock Beam	1	x	1	1.07	0.38	0.255	0.10
		Loading Dock Beam	1	x	4	0.85	0.38	0.255	0.33
		Add Column Junctions							
		Column C-1	1	x	42	0.60	0.60	0.600	9.07
		Column C-2	1	x	2	0.38	0.38	0.380	0.11
									122.97
						Total Quantity =			122.97 Cum
21	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Ground Floor Roof Slab, Staircase Slab</b>							
		Corridor Slab	1	x	1	16.65	1.00	0.125	2.08
		Ante Cold Room	1	x	1	31.40	3.10	0.125	12.17
									14.25
		<b>Staircase</b>							
		Flight Slab 1	1	x	1	1.35	1.50	0.200	0.405
		Flight Slab 2	1	x	1	5.26	1.50	0.200	1.578
		Landing Slab	1	x	1	3.15	1.50	0.200	0.945
		Mid landing Beam	1	x	1	3.15	0.30	0.180	0.170
		Flight Slab-3	1	x	1	4.75	1.50	0.200	1.425
									4.52
						Total Quantity =			18.77 Cum



2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
22	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Ground Floor Sunshade</b>							
		Window	1	x	10	1.96	0.60	0.10	1.18
						Total Quantity =			1.18 Cum
23	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>First Floor</b>							
a		<b>Column</b>							
		Column C-1	1	x	42	0.60	0.60	4.650	70.31
		Column C-2	1	x	2	0.38	0.38	4.870	1.41
						Total Quantity =			71.71
24	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>First Floor Roof Beam</b>							
		Grid B1-G1, B2-G2, B3-G3, B4-G4, B5-G5	1	x	5	19.92	0.45	0.600	26.89
		Grid A6-G6, A7-G7	1	x	2	22.43	0.45	0.600	12.11
		Middle Beam	1	x	11	8.86	0.38	0.380	14.07
		Middle Beam	1	x	1	4.45	0.38	0.380	0.64
		Grid A6-A7	1	x	1	4.76	0.45	0.600	1.28
		Grid B1-B7, C1-C7, D1-D7, E1-E7, F1-F7, G1-G7	1	x	6	27.24	0.45	0.600	44.13
		Middle Beam	1	x	3	25.71	0.38	0.380	11.14
		Middle Beam	1	x	1	21.37	0.38	0.380	3.09
		Loading Dock Beam	1	x	1	1.07	0.38	0.255	0.10
		Loading Dock Beam	1	x	4	0.85	0.38	0.255	0.33
		Add Column Junctions							
		Column C-1	1	x	42	0.60	0.60	0.600	9.07
		Column C-2	1	x	2	0.38	0.38	0.380	0.11
									122.97
25	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>First Floor Roof Slab</b>							
		Corridor Slab	1	x	1	16.65	1.00	0.125	2.08
		Ante Cold Room	1	x	1	31.40	3.10	0.125	12.17
									14.25
		<b>Staircase</b>							
		Flight Slab 4	1	x	1	5.32	1.50	0.200	1.596
		Landing Slab	1	x	1	3.15	2.07	0.200	1.304
		Mid landing Beam	1	x	1	3.15	0.30	0.180	0.170
		Flight Slab 5	1	x	1	5.14	1.50	0.200	1.542
						Total Quantity =			213.55 Cum

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
26	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>First Floor Sunshade</b>							
		Window	1	x	14	1.96	0.60	0.10	1.65
						Total Quantity =			1.65 Cum
27	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Second Floor Column</b>							
		Column C-1	1	x	42	0.60	0.60	4.800	72.58
		Column C-2	1	x	2	0.38	0.38	4.800	1.39
									73.96
28	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Second Floor Roof Beam</b>							
		Grid B1-G1,	1	x	1	19.92	0.45	0.600	5.38
		Grid A7-G7	1	x	1	22.43	0.45	0.600	6.06
		Grid A6-B6	1	x	1	2.52	0.45	0.600	0.68
		Grid C6-D6	1	x	1	4.19	0.45	0.600	1.13
		Grid A6-A7	1	x	1	4.76	0.45	0.600	1.28
		Grid B1-B7, D1-D7, E1-E7, G1-G7	1	x	4	27.24	0.45	0.600	29.42
		Grid C6-C7	1	x	1	4.65	0.45	0.600	1.25
		Add Column Junctions							
		Column C-1	1	x	42	0.60	0.60	0.600	9.07
		Column C-2	1	x	2	0.38	0.38	0.600	0.17
									54.45
29	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Second Floor Roof Slab</b>							
		Staircase Slab	1	x	1	5.52	3.05	0.125	2.099
		Corridor Slab	1	x	1	16.65	1.00	0.125	2.08
									4.18
						Total Quantity =			132.59 Cum
30	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Second Floor Sunshade</b>							

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.		Description	Nos			L	B	D	Quantity	Unit
		Window	1	x	1	1.96	0.60	0.10	0.12	
							<b>Total Quantity =</b>		<b>0.12</b>	<b>Cum</b>
31		Providing and placing in position precast reinforced cement concrete waffle units, square or rectangular, as per design and shape for floors and roofs in M30 Grade Concrete, including flush or deep ruled pointing at joints in Cement mortar 1:2 (1 Cement : 2 Fine sand), making necessary holes of required sizes for carrying through service lines etc., providing steel hooks for lifting etc, form work in precasting, handling, hoisting, centering and erection complete for all floor levels but, excluding the cost of reinforcement								
		<b>Ground Floor Roof Slab</b>	1	x	2	31.14	10.06	0.125	78.317	
		Deductions								
		Lift Opening	-1	x	1	4.72	4.26	0.125	-2.515	
		Slab Opening	-0.33	x	2	31.14	10.06	0.125	-26.106	
		<b>First Floor Roof Slab</b>	1	x	2	31.14	10.06	0.125	78.317	
		Deductions								
		Lift Opening	-1	x	1	4.72	4.26	0.125	-2.515	
		Slab Opening	-0.33	x	2	31.14	10.06	0.125	-26.106	
							<b>Total Quantity =</b>		<b>99.392</b>	<b>Cum</b>
32	11.32	Providing Thermo-Mechanically Treated bars of grade Fe-550 Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position, binding and anchoring to adjacent members wherever necessary complete as per Design including cost of material, labour, usage charges complete as per specifications. (The laps and wastages shall not be measured separately)								
		<b>Foundation</b>								
		Footing	1	x	1	193.80	80	Kg/ Cum	15503.72	
		Column Pedestal	1	x	1	23.24	280	Kg/ Cum	6507.97	
		Plinth Beam	1	x	1	49.14	180	Kg/ Cum	8845.75	
		RCC Wall	1	x	1	8.21	120	Kg/ Cum	985.76	
		<b>Ground Floor</b>								
		Column	1	x	1	83.27	280	Kg/ Cum	23315.90	
		Beam	1	x	1	122.97	275	Kg/ Cum	33816.93	
		Roof Slab	1	x	1	14.25	100	Kg/ Cum	1424.88	
		Staircase	1	x	1	4.52	120	Kg/ Cum	542.77	
		Sun Shade	1	x	1	1.18	120	Kg/ Cum	141.60	
		<b>First Floor</b>								
		Column	1	x	1	71.71	280	Kg/ Cum	20080.05	
		Beam	1	x	1	122.97	275	Kg/ Cum	33816.93	
		Roof Slab	1	x	1	14.25	100	Kg/ Cum	1424.88	
		Staircase	1	x	1	4.61	120	Kg/ Cum	553.46	
		Sun Shade	1	x	1	1.65	120	Kg/ Cum	198.00	
		<b>Second Floor</b>								
		Column	1	x	1	73.96	280	Kg/ Cum	20709.43	
		Beam	1	x	1	54.45	275	Kg/ Cum	14973.24	
		Roof Slab	1	x	1	4.18	100	Kg/ Cum	418.04	
		Sun Shade	1	x	1	0.12	120	Kg/ Cum	14.40	
		Precast Slab	1	x	1	99.39	120	Kg/ Cum	11927.10	
							<b>Total Quantity =</b>		<b>195200.80</b>	<b>Kg</b>
33	6.2	Providing Brick work with common burnt clay Non Modular bricks of class designation 3.5 in foundation and plinth in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.								
		<b>Basement Brickwork</b>								
		Grid B1-G1, B2-G2, B3-G3, B4-G4, B5-G5	1	x	5	19.92	0.23	0.650	14.89	
		Grid A6-G6, A7-G7	1	x	2	22.43	0.23	0.650	6.71	
		Grid A6-A7	1	x	1	4.76	0.23	0.650	0.71	
		Grid B1-B7, C1-C7, D1-D7, E1-E7, F1-F7, G1-G7	1	x	6	27.24	0.23	0.650	24.43	
		Loading Dock wall	1	x	2	1.26	0.23	0.650	0.38	
		" "	1	x	5	0.67	0.23	0.650	0.50	
		Front wall	1	x	1	25.80	0.23	0.650	3.86	
		Steps	1	x	1	1.50	0.30	0.150	0.07	
		" "	1	x	1	1.50	0.30	0.300	0.14	
		" "	1	x	1	1.50	0.30	0.450	0.20	
		" "	1	x	1	1.50	0.30	0.600	0.27	
							<b>Total Quantity =</b>		<b>52.15</b>	<b>Cum</b>
34	6.8	Providing Brick work with common burnt clay Non Modular bricks of class designation 3.5 in superstructure above plinth level in all shapes and sizes in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work								
		<b>Ground floor</b>								

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.		Description	Nos			L	B	D	Quantity	Unit
		Grid B1-G1, B7-G7	1	x	2	19.92	0.23	4.650	42.61	
		Grid B1-B7, G1-G7	1	x	2	27.24	0.23	4.650	58.27	
		<b>Deductions</b>								
		Door	-1	x	1	2.00	0.23	2.100	-0.97	
		<b>First floor</b>								
		Grid B1-G1, B7-G7	1	x	2	19.92	0.23	4.650	42.61	
		Grid B1-B7, G1-G7	1	x	2	27.24	0.23	4.650	58.27	
		<b>Deductions</b>								
		Door	-1	x	1	2.00	0.23	2.100	-0.97	
		<b>Second floor</b>								
		Grid B1-G1, B7-G7	1	x	2	19.92	0.23	4.800	43.98	
		Grid B1-B7, G1-G7	1	x	2	27.24	0.23	4.800	60.15	
		<b>Deductions</b>								
		Door	-1	x	1	2.00	0.23	2.100	-0.97	
						<b>Total Quantity =</b>			<b>302.98</b>	<b>Cum</b>
35	6.25	Providing Brick work with Non Modular fly ash bricks conforming to IS:12894, class designation 5.0 average compressive strength in super structure above plinth level up to floor 1 level in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.							10.00	
									<b>Total Quantity =</b>	
									<b>10.00</b>	<b>Cum</b>
36	6.14	Providing Half brick masonry with common burnt clay Non Modular bricks of class designation 3.5 in superstructure above plinth level up to floor 1 level cement mortar 1:3 (1 cement :3 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work								
		<b>Puff Wall Side</b>								
		<b>Ground Floor</b>								
		Grid B1-G1, B7-G7	1	x	2	22.32		0.45	20.09	
		Grid B1-B7, G1-G7	1	x	2	30.24		0.45	27.22	
		Grid D1-D7, E1-E7	2	x	2	30.24		0.45	54.43	
		Center Puff Wall	2	x	2	9.00		0.45	16.20	
		Deduction Door	-1	x	9	1.50		0.45	-6.08	
		<b>First Floor</b>								
		Grid B1-G1, B7-G7	1	x	2	22.32		0.45	20.09	
		Grid B1-B7, G1-G7	1	x	2	30.24		0.45	27.22	
		Grid D1-D7, E1-E7	2	x	2	30.24		0.45	54.43	
		Center Puff Wall	2	x	2	9.00		0.45	16.20	
		Deduction Door	-1	x	9	1.50		0.45	-6.08	
		<b>Second Floor</b>								
		Grid B1-G1, B7-G7	1	x	2	22.32		0.45	20.09	
		Grid B1-B7, G1-G7	1	x	3	30.24		0.45	40.82	
		Grid D1-D7, E1-E7	2	x	2	30.24		0.45	54.43	
		Center Puff Wall	2	x	2	9.00		0.45	16.20	
		Deduction Door	-1	x	9	1.50		0.45	-6.08	
									<b>Total Quantity =</b>	
									<b>349.19</b>	<b>Sqm</b>
37	8.4.2	Providing 12 mm cement plaster finished with a floating coat of neat cement of mix :1:4 (1 cement: 4 fine sand) to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge								
		<b>Inner Plastering</b>								
		<b>Ground Floor</b>								
		Grid B1-G1, B7-G7	1	x	2	22.32		5.25	234.36	
		Grid B1-B7, G1-G7	1	x	2	30.24		5.25	317.52	
		<b>Puff Wall Side</b>								
		Grid B1-G1, B7-G7	1	x	2	22.32		0.45	20.09	
		Grid B1-B7, G1-G7	1	x	2	30.24		0.45	27.22	
		Grid D1-D7, E1-E7	2	x	2	30.24		0.45	54.43	
		Center Puff Wall	2	x	2	9.00		0.45	16.20	
		Deduction Door	-1	x	8	1.50		0.45	-5.40	
		" "	-1	x	1	1.50		2.10	-3.15	
		<b>First Floor</b>								
		Grid B1-G1, B7-G7	1	x	2	22.32		5.25	234.36	
		Grid B1-B7, G1-G7	1	x	2	30.24		5.25	317.52	
		<b>Puff Wall Side</b>								
		Grid B1-G1, B7-G7	1	x	2	22.32		0.45	20.09	
		Grid B1-B7, G1-G7	1	x	2	30.24		0.45	27.22	
		Grid D1-D7, E1-E7	2	x	2	30.24		0.45	54.43	

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
		Center Puff Wall	2	x	2	9.00		0.45	16.20
		Deduction Door	-1	x	8	1.50		0.45	-5.40
		" "	-1	x	1	1.50		2.10	-3.15
		<b>Second Floor</b>							
		Grid B1-G1, B7-G7	1	x	2	22.32		5.25	234.36
		Grid B1-B7, G1-G7	1	x	2	30.24		5.25	317.52
		<b>Puff Wall Side</b>							
		Grid B1-G1, B7-G7	1	x	2	22.32		0.45	20.09
		Grid B1-B7, G1-G7	1	x	2	30.24		0.45	27.22
		Grid D1-D7, E1-E7	2	x	2	30.24		0.45	54.43
		Center Puff Wall	2	x	2	9.00		0.45	16.20
		Deduction Door	-1	x	8	1.50		0.45	-5.40
		" "	-1	x	1	1.50		2.10	-3.15
						Total Quantity =			1983.80
38	8.3.1	Providing 20 mm cement plaster of mix :1:4 (1 cement: 4 fine sand) to brick/stone masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.							
		<b>Outer Plastering</b>							
		<b>Ground floor</b>							
		Outer Wall	1	x	1	105.12		16.500	1734.48
		Door	-1	x	3	1.65		3.000	-14.85
						Total Quantity =			1719.63 Sqm
39	8.13	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof including cost of material, labour, scaffolding etc as per specifications and as per directions of the Engineer-in-Charge.							
		Deduction Door	-1	x	9	1.5		0.45	-6.075
		Headroom Outer	1	x	1	13.5		2.4	32.4
		Parapet wall	1	x	2	85.31		0.9	153.558
		Parapet wall(Top area)	1	x	1	85.31		0.23	19.6213
						Total Quantity =			199.50 Sqm
40	8.16.2	Providing and fixing suitable plaster mesh 150mm wide manufactured out of hot dipped galvanised iron of nominal thickness 0.35mm with a zinc coating of 120g/m2 width, along route of walls chipped for services, junction between RCC and brick walls including cost of materials, labour for fixing complete as per specifications. ( length of mesh only be measured for payment							
		Mesh							150.00
						Total Quantity =			150.00 Rmt
41	8.79	Forming groove of uniform size in the top layer of plaster as per approved pattern including repair to the edges of panels and finishing the groove complete as per specifications and direction of the Engineer-in-charge: 10mm to 15 mm wide and 8 mm deep groove.							
		Goove Line							50.00
						Total Quantity =			50.00 m
42	9.1	Providing and laying Cement concrete flooring 40 mm thick with 20 mm nominal size stone aggregate using 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry complete.							
		<b>First Floor</b>							
		Corridor Slab	1	x	1	16.65	1.00		16.650
		Ante Cold Room	1	x	1	31.40	3.10		97.340
		<b>Second Floor</b>							
		Corridor Slab	1	x	1	16.65	1.00		16.650
		Ante Cold Room	1	x	1	31.40	3.10		97.340
						Total Quantity =			227.980 Sqm
43	8.30	Finishing walls with Acrylic Smooth exterior paint of required shade :New work (Two coat applied @ 1.67 ltr/10 m <sup>2</sup> over and including priming coat of exterior primer applied @ 2.20 kg/10 m <sup>2</sup> ) with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.							
		<b>Outer Plastering</b>							
		<b>As per Item No: 36</b>	1	x	1	1719.63			1719.63
						Total Quantity =			1719.63 Sqm

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
44	8.33.1	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications: Two coats applied on walls @ 1.25 L/10 m <sup>2</sup> over and including one coat of Special primer applied @ 0.75 L/10 m <sup>2</sup> with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge. (The gloss should be 50% @ 60 degree angle with 10 years life)							
		Inner Plastering							
		As per Item No: 39	1	x	1	1983.80			1983.80
						Total Quantity =			1983.80 Sqm
45	11.5.2	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer. Using flats 30x6mm for diagonal braces and central cross piece including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.							
		M.S. sheet door							10.00
						Total Quantity =			10.00 Sqm
46	11.6.1	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters. 80x1.25 mm M.S. laths with 1.25 mm thick top cover including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.							
		Rolling Shutter	1	x	1	1.50	2.50		3.75
						Total Quantity =			3.75 Sqm
47	11.8.1	Extra for providing mechanical device chain and crank operation for operating rolling shutters: including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge							
		Rolling Shutter	1	x	1	1.50	2.50	1.00	3.75
						Total Quantity =			3.75 Sqm
48	11.8.4	Extra for providing 2 HP Mild Steel Auto Reverse Shutter Gearbox for operating rolling shutters including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.							
		Rolling Shutter	1	x	1				1.00
						Total Quantity =			1.00 Nos
49	11.1	Providing and fixing Structural Steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.							
									1000.00
									1000.00 Kg
50	11.2	Providing and fixing Structural Steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in Charge.							
									1000
						Total Quantity =			1000 kg
51	11.25.2	Providing and fixing Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in Charge.							
		Staircase Handrail							1500.000
		Corridor Hand Rail							1000.000
						Total Quantity =			2500.000 Kg

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT										
DETAIL ESTIMATE - COLD STORAGE										
SI No.		Description	Nos			L	B	D	Quantity	Unit
52	8.33.2	Painting wood work with Deluxe Multi Surface Paint of required shade. Two coat applied @ 0.90 ltr/10 m <sup>2</sup> over an under coat of primer applied @0.75 ltr/10 m <sup>2</sup> of approved brand and manufacture to give an even shade including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, sand papering and knotting , cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.								
		Woor Paiting							20.00	
						Total Quantity =			20.00	Sqm
53	8.33.3	Providing, fabricating, transporting and erecting at all heights, depths and locations steel structures such as columns, beams, trusses, portals, bracings, purlins, gantry girders, ladders, stair cases , steps, castellated girders, latticed girders, monorails, platforms, brackets, rails, walkways, cleats, gutters, separators, pipes, anchor bolt and sleeves, plate girders etc. using joists, angles, channels, flats, rounds, plates etc. cutting to required size, bending, riveting, bolting and/or welding of joints, fixing in line and level with temporary staging, including one coat of red oxide primer and two coats of synthetic enamel paint The rate should also include supply of labour, all consumables and etc. required for proper completion of the work. <b>PEB Structure</b>								
						Total Length	Unit	Unit Weight	Total Weight	
								Kg/Sqm		
		Truss Area								
		Truss Area	1	x	1	721.45		25.00	18036.25	
		Sides	1	x	1	141.13		18.00	2540.34	
		Canopy Area	1	x	1	10.13		25.00	253.13	
									20829.72	Kg
									20.83	MT
54	7.1.1	Providing & fixing corrugated G.S. sheet roofing including vertical / curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete as per design drawings (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required as per the direction of Engineer in charge 0.63 mm thick with zinc coating not less than 275 g/m <sup>2</sup>								
		Roof Area	1	x	2	30.70	11.75		721.45	
		Sides	1	x	2	30.70		1.000	61.40	
		Sides	1	x	2	22.78		1.000	45.56	
		" "	0.5	x	2	22.78		1.500	34.17	
		Roof & Canopy Area	1	x	1	4.50	2.25		10.13	
						Total Quantity =			872.71	Sqm
55	7.33.1	Providing & fixing UV stabilised fiberglass reinforced plastic sheet roofing up to any pitch, including fixing with polymer coated 'J' or 'L' hooks, bolts & nuts 8mm dia. G.I plain/bitumen washers complete but excluding the cost of purlins, rafters, trusses etc. The sheets shall be manufactured out of 2400 TEX panel rovigs incorporating minimum 0.3% ultra-violet stabiliser in resin system under approximately 2400 psi and hot cured. They shall be of uniform pigmentation and thickness without air pockets and shall conform to IS 10192 and IS 12866.The sheets shall be opaque or translucent, clear or pigmented, textured or smooth as specified. 2 mm thick corrugated (2.5"" or 4.2"" or 6"" ) or step-down (2"" or 3"" or 6"" ) as specified								
									20.00	
						Total Quantity =			20.00	Sqm
56	7.4.1	Providing & fixing ridges or hips of width 60 cm overall width plain G.S. sheet fixed with polymer coated J or L hooks, bolts and nuts 8 mm dia G.I. limpet and bitumen washers complete as per design drawings. <b>0.63 mm thick with zinc coating not less than 275 g/m<sup>2</sup></b>								
		Ridge	1	x	1	30.70			30.70	
						Total Quantity =			30.70	RM
57	7.6	Providing and fixing 15 cm wide, 45 cm overall semi-circular plain G.S. sheet gutter with iron brackets 40x3mm size, bolts, nuts and washers etc., including making necessary connections with rain water pipes complete. (0.63 mm thick with zinc coating not less than 275 g/m <sup>2</sup> )								
		Gutter two sides	1	x	2	30.70			61.40	
						Total Quantity =			61.40	RM

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT										
DETAIL ESTIMATE - COLD STORAGE										
SI No.		Description	Nos			L	B	D	Quantity	Unit
58		Supply and installation of wind driven turbine ventilators (mill finish) throat width 600mm, the turbine head and variable angle elbow is manufactured out of aluminum alloy having 0.71mm thick vanes, the shaft is made out of stainless steel, and the installation using stainless steel hardware and EPDM rubber washers and with double row ball-bearing system. SPEC: Rotation: Twin Sealed 6203ZZ/Twin Sealed 6201ZZ bearings with self lubricating to ensure frictionless rotation even at lowest wind velocity, 42 Vanes, Base Ring MOC (Mounting Ring): SS, Top plate MOC : SS 0.8mm thk, Bearing Type: SKF – 6001 ZZ & 6003 ZZ Permanently Lubricated & Sealed, Rivets: Aluminum Alloy with Washer, FRP base: 2 mm thick clear 1.020 mtr wide and 1.65 mtr long matching your sheet profile, Size: Turbine dia- 28" , Throat dia- 24" , Height18". (Make: Harsco, GUNDEL, Harsco, Harsco)								
		Turbine Ventilator	1	x	10				10.00	
						Total Quantity =			10.00	Nos
59	10.1.7	Supplying PVC ringite pipes conforming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour with all lead & lift including encasing the pipe alround to a depth of not less than 15 cms. with soft gravel or selected earth available from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing) etc. for: PVC pipes 110mm dia., 6 kg/sqcm & class 3								
		Rain Water Pipe	1	x	8	15.00			120.00	
						Total Quantity =			120.00	Rmt
60	10.11.8	Supply and delivery at site special moulded variety PVC bend as per IS 7834/ 1987 and fabricated as per IG124/ 1984 with ISI mark with its latest amendments <b>110mm dia PVC Bend</b>								
		10 mm dia PVC BEND	1	x	8				8.00	
						Total Quantity =			8.00	Nos
61	10.9.8	Supply and delivery at site special moulded variety PVC elbows as per IS 7834/ 1987 and fabricated as per IG124/ 1984 with ISI mark with its latest amendments <b>110mm dia PVC Elbows</b>								
		110 mm dia PVC Elbows	1	x	8				8.00	
						Total Quantity =			8.00	Nos
DETAIL ESTIMATE -TECHNICINA SHED										
SI No.		Description	Nos			L	B	D	Quantity	Unit
62		Earth work excavation for Foundation by mechanical means for all works & depth upto 3 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenaces required to complete the work. (Excavation Payable for Footing Area Only) <b>In all kinds of soils Depth upto 3 m</b>								
		Footing F-1	1	x	12	1.40	1.40	1.000	23.52	
						Total Quantity =			23.52	Cum
63		Earth work excavation for Foundation by mechanical means for all works & depth upto 1.5 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenaces required to complete the work <b>In ordinary/soft rock without blasting upto 1.5 m depth</b>								
		<b>Footing</b>								
		Footing F-1	1	x	12	1.40	1.40	0.500	11.76	
		<b>Plinth Beam</b>								
		Grid A1-D1	1	x	1	10.14	0.50	0.58	2.94	
		Grid A2-C2	1	x	1	6.39	0.50	0.58	1.85	
		Grid A'3-D3	1	x	1	9.62	0.50	0.58	2.79	
		Grid A1- A2	1	x	1	2.93	0.50	0.58	0.85	
		Grid A'2-A'3	1	x	1	3.65	0.50	0.58	1.06	
		Grid C1-C3,D1-D3,B1-B3	1	x	3	6.28	0.50	0.58	5.46	
		Toilet inner Wall	1	x	1	3.60	0.50	0.58	1.04	
		Toilet inner Wall	1	x	2	1.36	0.50	0.58	0.79	
						Total Quantity =			28.55	Cum



**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
64	Earth work excavation for Foundation by mechanical means for all works & depth upto 1.5 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work <b>Depth exceeding 1.5 m, but not exceeding 3 m</b>								
	<b>Footing</b>								
	Footing F-1	1	x	12	1.40	1.40	0.700	16.46	
					<b>Total Quantity =</b>			<b>16.46</b>	<b>Cum</b>
65	Earth work excavation for FOUNDATION by Mechanical means depth upto 1.50m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including cost of explosives, dressing of excavated surfaces, disposing off or levelling the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, blasting materials, tools, usage of Machinery & all other appurtenances required to complete the work. (Excavation Payable for Footing Area Only) <b>In Hard Rock (requiring blasting) Depth upto 1.50m</b>								
		1	x	1	10.00			10.00	
					<b>Total Quantity =</b>			<b>10.00</b>	<b>Cum</b>
66	Earth work excavation for FOUNDATION by Mechanical means depth upto 1.50m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including cost of explosives, dressing of excavated surfaces, disposing off or levelling the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, blasting materials, tools, usage of Machinery & all other appurtenances required to complete the work. (Excavation Payable for Footing Area Only) <b>Denth</b>								
		1	x	1	10.00			10.00	
					<b>Total Quantity =</b>			<b>10.00</b>	<b>Cum</b>
67	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations and other similar works etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering lead up to 50 m and lift upto 1.5 m.								
	Earthwork Excavation (Item No:1+2a+2b)	1	x	1		45.01		45.01	
	<b>Deductions</b>								
	Sand Filling (Item No:5)	-1	x	1		13.89		-13.89	
	P.C.C 1:4:8 (Item No:6)	-1	x	1		13.89		-13.89	
	Footing Concrete (Item No:13)	-1	x	1		7.06		-7.06	
					<b>Total Quantity =</b>			<b>10.17</b>	<b>Cum</b>
68	Filling available approved Gravel/Murum deposited at a place or borrow pits during or prior excavation with all lifts and lead, transportation to site, spreading, grading to required slope and compacting to meet the requirement complete as per specifications, including cost of labour, rolling,water,all materials,usage& all other appurtenances required to complete the work.								
	<b>Basement Filling</b>								
	Area 1	1	x	1	11.06	3.53	0.450	17.57	
	Area 2	1	x	1	10.54	3.95	0.450	18.73	
	<b>Deductions</b>								
	<b>Deductions</b>								
	Grid A1-D1	-1	x	1	10.14	0.23	0.45	-1.05	
	Grid A2-C2	-1	x	1	6.39	0.23	0.45	-0.66	
	Grid A'3-D3	-1	x	1	9.62	0.23	0.45	-1.00	
	Grid A1- A2	-1	x	1	2.93	0.23	0.45	-0.30	
	Grid A'2-A'3	-1	x	1	3.65	0.23	0.45	-0.38	
	Grid C1-C3,D1-D3,B1-B3	-1	x	3	6.28	0.23	0.45	-1.95	
	Toilet inner Wall	-1	x	1	3.60	0.23	0.45	-0.37	
	Toilet inner Wall	-1	x	2	1.36	0.23	0.45	-0.28	
					<b>Total Quantity =</b>			<b>30.31</b>	<b>Cum</b>
69	Providing and injecting chemical emulsion for Pre constructional Anti-Termite Treatment, creating continuous chemical barrier under and around the column pits, walls, trenches, basement excavation, top surface of the plinth filling, junction of wall and floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surrounding of pipes and conduits with Chlorpyrifos 20% E.C. / Lindane 20% E.C. @ 3.19 l/m2 including cost of chemical, diluting in water to one percent concentration, labour, usage charges of machinery, complete as per								
	<b>Plinth Area</b>								
	Area 1	1	x	1	11.06	3.53		39.04	
	Area 2	1	x	1	10.54	3.95		41.63	
					<b>Total Quantity =</b>			<b>80.67</b>	<b>Sqm</b>

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
70	Providing and Filling in foundation with granite / trap broken metal 100mm. And down size & with approved sand including hand packing, ramming, watering, including cost of all materials and labour with all lead and lift complete as per specifications.								
	<b>Footing</b>								
	Footing F-1	1	x	12	1.40	1.40	0.100	2.35	
	<b>Plinth Beam</b>								
	Grid A1-D1	1	x	1	10.14	0.50	0.10	0.51	
	Grid A2-C2	1	x	1	6.39	0.50	0.10	0.32	
	Grid A'3-D3	1	x	1	9.62	0.50	0.10	0.48	
	Grid A1- A2	1	x	1	2.93	0.50	0.10	0.15	
	Grid A'2-A'3	1	x	1	3.65	0.50	0.10	0.18	
	Grid C1-C3,D1-D3,B1-B3	1	x	3	6.28	0.50	0.10	0.94	
	Toilet inner Wall	1	x	1	3.60	0.50	0.10	0.18	
	Toilet inner Wall	1	x	2	1.36	0.50	0.10	0.14	
	<b>Flooring</b>								
	Quality Test Lab	1	x	1	3.00	3.00	0.100	0.90	
	Supervisor	1	x	1	3.50	3.00	0.100	1.05	
	Dormitory	1	x	1	3.50	3.60	0.100	1.26	
	Toilet Area	1	x	1	2.48	3.60	0.100	0.89	
	Waiting Area	1	x	1	3.75	6.72	0.100	2.52	
	Passage Area	1	x	1	9.35	1.00	0.100	0.94	
	Step 1	1	x	1	3.35	1.80	0.100	0.60	
	Step 2	1	x	1	2.70	1.80	0.100	0.49	
					<b>Total Quantity =</b>			<b>13.89</b>	<b>Cum</b>
71	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) Mix 1:5:10 Using 40 mm nominal size								
		1	x	1	10.00			10.00	
					<b>Total Quantity =</b>			<b>10.00</b>	<b>Cum</b>
72	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) Mix 1:4:8( M5) Using 40 mm nominal size graded crushed coarse aggregates								
	<b>Footing</b>								
	Footing F-1	1	x	12	1.40	1.40	0.100	2.35	
	<b>Plinth Beam</b>								
	Grid A1-D1	1	x	1	10.14	0.50	0.10	0.51	
	Grid A2-C2	1	x	1	6.39	0.50	0.10	0.32	
	Grid A'3-D3	1	x	1	9.62	0.50	0.10	0.48	
	Grid A1- A2	1	x	1	2.93	0.50	0.10	0.15	
	Grid A'2-A'3	1	x	1	3.65	0.50	0.10	0.18	
	Grid C1-C3,D1-D3,B1-B3	1	x	3	6.28	0.50	0.10	0.94	
	Toilet inner Wall	1	x	1	3.60	0.50	0.10	0.18	
	Toilet inner Wall	1	x	2	1.36	0.50	0.10	0.14	
	<b>Flooring</b>								
	Quality Test Lab	1	x	1	3.00	3.00	0.100	0.90	
	Supervisor	1	x	1	3.50	3.00	0.100	1.05	
	Dormitory	1	x	1	3.50	3.60	0.100	1.26	
	Toilet Area	1	x	1	2.48	3.60	0.100	0.89	
	Waiting Area	1	x	1	3.75	6.72	0.100	2.52	
	Passage Area	1	x	1	9.35	1.00	0.100	0.94	
	Step 1	1	x	1	3.35	1.80	0.100	0.60	
	Step 2	1	x	1	2.70	1.80	0.100	0.49	
					<b>Total Quantity =</b>			<b>13.89</b>	<b>Cum</b>

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
73		Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications.(The cost including Centering and shuttering but excluding steel reinforcement) <b>Mix 1:3:6 (M10) Using 20 mm nominal size graded crushed coarse aggregates</b>							
			1	x	1	10.00			10.00
						Total Quantity =			10.00 Cum
74		Providing and laying in reinforced cement concrete for an Basement & surface level works, return walls, retaining walls, sunken floors etc. The granite/trap/ basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necessary, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications.(The cost including Centering and shuttering but excluding steel reinforcement) <b>M25 Design Mix Using 20 mm nominal size graded crushed coarse aggregates for Flooring</b>							
		Slab 1	1	x	1	7.08	3.53	0.150	3.75
		Slab 2	1	x	1	6.56	3.72	0.150	3.66
						Total Quantity =			7.41 Cum
75		Providing and laying in reinforced cement concrete for an Basement & surface level works, return walls, retaining walls, sunken floors etc. The granite/trap/ basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necessary, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates</b>							
			1	x	1	10.00			10.00
						Total Quantity =			10.00 Cum
76		The concrete finished with shall be laid and finished with screed board vibrator , <b>vacuum dewatering</b> process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge.							
		Area 1	1	x	1	11.06	3.53		39.04
		Area 2	1	x	1	10.54	3.95		41.63
						Total Quantity =			80.67 Sqm
77		Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Footing</b>							
		Footing							
		Footing F-1	1	x	12	1.40	1.40	0.300	7.06
						Total Quantity =			7.06 Cum
78		Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Column/Pedastrals Basement to ground floor</b>							
		Footing F-1 - C1	1	x	12	0.30	0.30	1.320	1.43
						Total Quantity =			1.43 Cum

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
79		Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Plinth Beam</b>							
		<b>Plinth Beam</b>							
		Grid A1-D1	1	x	1	10.14	0.30	0.38	1.16
		Grid A2-C2	1	x	1	6.39	0.30	0.38	0.73
		Grid A'3-D3	1	x	1	9.62	0.30	0.38	1.10
		Grid A1- A2	1	x	1	2.93	0.30	0.38	0.33
		Grid A'2-A'3	1	x	1	3.65	0.30	0.38	0.42
		Grid C1-C3,D1-D3,B1-B3	1	x	3	6.28	0.30	0.38	2.15
		Toilet inner Wall	1	x	1	3.60	0.30	0.38	0.41
		Toilet inner Wall	1	x	2	1.36	0.30	0.38	0.31
		Add Column Junctions							
		Column C-1	1	x	12	0.30	0.23	0.380	0.31 0.31
						Total Quantity =			6.91 Cum
80		Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Ground Floor Column</b>							
		<b>Column</b>							
		Column C-1	1	x	12	0.30	0.30	3.150	3.40
									3.40
						Total Quantity =			3.40 Cum
81		Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Ground Floor Column Ground Floor Roof Beam &amp; Lintel Beam</b>							
b		<b>Lintel Beam</b>							
		Grid A1-C1	1	x	1	6.39	0.30	0.15	0.29
		Grid A'3-C3	1	x	1	5.87	0.30	0.15	0.26
		Grid A1- A2	1	x	1	2.93	0.30	0.15	0.13
		Grid A'2-A'3	1	x	1	3.65	0.30	0.15	0.16
		Grid C1-C3	1	x	1	6.28	0.30	0.15	0.28
		Grid A'2-C2	1	x	1	5.87	0.12	0.15	0.10
		Grid B1-B1'	1	x	1	2.03	0.12	0.15	0.04
		Grid B2-B3	1	x	1	3.35	0.12	0.15	0.06
		Toilet inner Wall	1	x	1	3.60	0.12	0.15	0.06
		Toilet inner Wall	1	x	2	1.36	0.12	0.15	0.05 1.43
		<b>Roof Beam</b>							
		Grid A1-C1	1	x	1	6.39	0.30	0.30	0.58
		Grid A2-C2	1	x	1	6.39	0.30	0.30	0.58
		Grid A'3-C3	1	x	1	5.87	0.30	0.30	0.53
		Grid A1- A2	1	x	1	2.93	0.30	0.30	0.26
		Grid A'2-A'3	1	x	1	3.65	0.30	0.30	0.33
		Grid C1-C3,B1-B3	1	x	2	6.28	0.30	0.30	1.13
		Toilet inner Wall	1	x	1	3.60	0.30	0.30	0.32
		Toilet inner Wall	1	x	2	1.36	0.30	0.30	0.24
		Add Column Junctions							

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
		Column C-1	1	x	12	0.30	0.30	0.30	0.32
									4.29
						Total Quantity =			5.73 Cum
82		Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Ground Floor Column Ground Floor Roof Slab</b>							
		<b>Roof Slab</b>							
		Slab 1	1	x	1	7.08	3.53	0.150	3.75
		Slab 2	1	x	1	6.56	3.72	0.150	3.66
						Total Quantity =			7.41 Cum
83		Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Ground Floor Column Ground Floor Sunshade</b>							
		Sunshade RS	1	x	1	2.70	0.60	0.115	0.19
		Sunshade window	1	x	5	1.50	0.60	0.115	0.52
						Total Quantity =			0.70 Cum
84		Providing and placing in position precast reinforced cement concrete waffle units, square or rectangular, as per design and shape for floors and roofs in M30 Grade Concrete, including flush or deep ruled pointing at joints in Cement mortar 1:2 (1 Cement : 2 Fine sand), making necessary holes of required sizes for carrying through service lines etc., providing steel hooks for lifting etc, form work in precasting, handling, hoisting, centering and erection complete for all floor levels but, excluding the cost of reinforcement							
			1	x	1	5.00			5.00
						Total Quantity =			5.00 Cum
85		Providing TheProviding Thermo-Mechanically Treated bars of grade Fe-550 Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position, binding and anchoring to adjacent members wherever necessary complete as per Design including cost of material, labour, usage charges complete as per specifications. (The laps and wastages shall not be measured separately)							
		<b>Foundation</b>							
		Footing	1	x	1	7.06	90	Kg/ Cum	635.04
		Column Pedestal	1	x	1	1.43	250	Kg/ Cum	356.40
		Plinth Beam	1	x	1	6.91	180	Kg/ Cum	1244.54
		<b>Ground Floor</b>							
		Column	1	x	1	3.40	275	Kg/ Cum	935.55
		Beam @ 6.5m LVL	1	x	1	4.29	280	Kg/ Cum	1202.29
		Slab & Sunshade	1	x	1	8.11	120	Kg/ Cum	973.58
		Lintel Beam	1	x	1	1.43	120	Kg/ Cum	172.02
						Total Quantity =			5519.41 Kg
86		Providing Brick work with common burnt clay modular bricks of class designation 3.5 in foundation and plinth in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.							
		<b>Basement To GF</b>							
		Grid A1-D1	1	x	1	10.14	0.23	0.45	1.05
		Grid A2-C2	1	x	1	6.39	0.23	0.45	0.66
		Grid A'3-D3	1	x	1	9.62	0.23	0.45	1.00
		Grid A1- A2	1	x	1	2.93	0.23	0.45	0.30
		Grid A'2-A'3	1	x	1	3.65	0.23	0.45	0.38
		Grid C1-C3,D1-D3,B1-B3	1	x	3	6.28	0.23	0.45	1.95
		Toilet inner Wall	1	x	1	3.60	0.23	0.45	0.37

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
	Toilet inner Wall	1	x	2	1.36	0.23	0.45	0.28	
					<b>Total Quantity =</b>			<b>5.99</b>	<b>Cum</b>
87	Providing Brick work with common burnt clay machine moulded perforated bricks of class designation 5.0 conforming to IS: 2222 in superstructure above plinth level in cement mortar 1:6 (1 cement : 6 coarse sand) With Modular bricks including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work								
	<b>Ground floor</b>								
	<b>Step 1</b>								
	Area 1	1	x	1	1.80	3.35	0.150	0.90	
	Area 2	1	x	1	1.50	3.35	0.150	0.75	
	Area 3	1	x	1	1.20	3.35	0.150	0.60	
	<b>Step 2</b>								
	Area 1	1	x	1	1.80	2.70	0.150	0.73	
	Area 2	1	x	1	1.50	2.70	0.150	0.61	
	Area 3	1	x	1	1.20	2.70	0.150	0.49	
	Passage Area	1	x	1	11.35	0.23	0.45	1.17	
	Lab Slab	1	x	6	0.75	0.23	0.75	0.78	
	<b>Waiting Area</b>							0.00	
	Slab 1	1	x	4	0.60	0.23	0.75	0.41	
	Slab 2	1	x	4	0.60	0.23	0.48	0.26	
	Slab 3	1	x	4	0.60	0.23	0.48	0.26	
	Slab 4	1	x	6	0.60	0.23	0.48	0.40	
	Grid A1-C1	1	x	1	6.39	0.23	2.70	3.97	
	Grid A2-A'2	1	x	1	0.29	0.23	2.70	0.18	
	Grid A'3-C3	1	x	1	5.87	0.23	2.70	3.65	
	Grid A1- A2	1	x	1	2.93	0.23	2.70	1.82	
	Grid A'2-A'3	1	x	1	3.65	0.23	2.70	2.27	
	Grid C1-C3	1	x	1	6.28	0.23	2.70	3.90	
	Grid C1-D1,C3-D3	1	x	2	3.75	0.23	1.20	2.07	
	Grid D1-D3	1	x	1	6.28	0.23	1.20	1.73	
	<b>Deductions</b>								
	RS	-1	x	1	2.40	0.23	2.52	-1.39	
	Opening 1	-1	x	1	0.90	0.23	1.20	-0.25	
	Opening 2	-1	x	1	0.90	0.23	2.10	-0.43	
	D1	-1	x	2	0.90	0.23	1.20	-0.50	
	D2	-1	x	1	0.70	0.23	2.10	-0.34	
	Window	-1	x	5	1.20	0.23	1.10	-1.52	
	Toilet Ventilator	-1	x	1	0.60	0.23	0.60	-0.08	
	<b>Terrace Floor</b>								
	Grid A1-C1	1	x	1	6.39	0.23	0.90	1.32	
	Grid A2-A'2	1	x	1	0.29	0.23	0.90	0.06	
	Grid A'3-C3	1	x	1	5.87	0.23	0.90	1.22	
	Grid A1- A2	1	x	1	2.93	0.23	0.90	0.61	
	Grid D1-D3	1	x	1	6.28	0.23	0.90	1.30	
					<b>Total Quantity =</b>			<b>26.95</b>	<b>Cum</b>
88	Providing Brick work with Non Modular fly ash bricks conforming to IS:12894, class designation 5.0 average compressive strength in super structure above plinth level up to floor I level in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.								
		1	x	1	10.00			10.00	
					<b>Total Quantity =</b>			<b>10.00</b>	<b>Cum</b>
89	Providing Half brick masonry with common burnt clay Non Modular bricks of class designation 3.5 in superstructure above plinth level up to floor 1 level cement mortar 1:3 (1 cement :3 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work								
	<b>Ground floor</b>								
	Grid A'2-C2	1	x	1	5.87		2.70	15.85	
	Grid C2-C3	1	x	1	3.35		2.70	9.05	
	Toilet inner Wall	1	x	1	3.60		2.70	9.72	
	Toilet inner Wall	1	x	2	1.36		2.70	7.34	
	<b>Deductions</b>								
	D1	-1	x	1	0.90		2.10	-1.89	
	D2	-1	x	3	0.70		2.10	-4.41	
					<b>Total Quantity =</b>			<b>35.66</b>	<b>Sqm</b>

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
90	Half brick masonry with Non Modular fly ash bricks of class designation 5.0, conforming to IS :12894, in super structure above plinth and upto floor I level cement mortar 1 : 3 (1 cement : 3 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work	1	x	1	10.00			10.00	
					Total Quantity =			10.00	Sqm
91	Providing 12 mm cement plaster finished with a floating coat of neat cement of mix :1:3 (1 cement: 3 fine sand) to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge								
	<b>Ceiling Plastering</b>								
	Quality Test Lab	1	x	1	3.00	3.00		9.00	
	Supervisor	1	x	1	3.50	3.00		10.50	
	Dormitory	1	x	1	3.50	3.60		12.60	
	Toilet Area	1	x	1	2.48	3.75		9.30	
					Total Quantity =			41.40	Sqm
92	Providing 12 mm cement plaster with cement mortar 1:4 (1 cement: 4 fine sand) to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.								
	<b>Inner Plastering</b>								
	<b>Ground Floor</b>								
	Quality Test Lab	1	x	1	12.00		3.00	36.00	
	Supervisor	1	x	1	13.00		3.00	39.00	
	Dormitory	1	x	1	14.20		3.00	42.60	
	Toilet Corridor	1	x	1	9.20		3.00	27.60	
	WC	1	x	2	4.56		2.15	19.61	
	WC/Bath	1	x	1	5.80		2.15	12.47	
	Deduction								
	RS	-1	x	1	2.40		2.52	-6.05	
	Opening	-1	x	3	0.90		2.10	-5.67	
	D1	-1	x	2	0.90		2.10	-3.78	
	D2	-1	x	7	0.70		2.10	-10.29	
	Window	-1	x	5	1.20		1.00	-10.80	
	Toilet Ventilator	-1	x	1	0.60		0.60	-2.16	
					Total Quantity =			138.53	Sqm
93	Providing 15 mm cement plaster on rough side of single or half brick wall finished with a floating coat of neat cement of mix: 1:4 (1 cement: 4 fine sand) to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.								
	Toilet	1	x	1	4.17		2.40	10.00	
					Total Quantity =			10.00	Sqm
94	Providing 20 mm cement plaster of mix :1:4 (1 cement: 4 fine sand) to brick/stone masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge								
	<b>Outer Plastering</b>								
	<b>Ground floor</b>								
	Outer Wall	1	x	1	28.59		3.60	102.92	
	Waiting Area	1	x	2	15.14		1.65	49.96	
	<b>Deductions</b>								
	Rolling Shutter	-1	x	1	2.40		2.52	-6.05	
	Window	-1	x	5	1.20		1.00	-10.80	
	Toilet Ventilator	-1	x	1	0.60		0.60	-2.16	
	Opening 1	-1	x	1	0.90		2.10	-1.89	
	D1	-1	x	2	0.90		1.65	-2.97	
	D2	-1	x	1	0.70		2.10	-1.47	
	<b>Terrace floor</b>								
	Outer Wall	1	x	2	28.59		0.90	51.46	
	Outer Wall top	1	x	1	28.59	0.23		6.58	
					Total Quantity =			185.59	Sqm

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
95		Providing and fixing suitable plaster mesh 150mm wide manufactured out of hot dipped galvanised iron of nominal thickness 0.35mm with a zinc coating of 120g/m2 width, along route of walls chipped for services, junction between RCC and brick walls including cost of materials, labour for fixing complete as per specifications. ( length of mesh only be measured for payment							
		Outer Wall top	1	x	1	500.00			500.00
						Total Quantity =			500.00 Rmt
96		Forming groove of uniform size in the top layer of plaster as per approved pattern including repair to the edges of panels and finishing the groove complete as per specifications and direction of the Engineer-in-charge: 10mm to 15 mm wide and 8 mm deep groove.							
			1	x	1	100.00			100.00
						Total Quantity =			100.00 Meter
97		Providing and laying Cement concrete flooring 40 mm thick with 20 mm nominal size stone aggregate using 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry complete							
			1	x	1	10.00			10.00
						Total Quantity =			10.00 Sqm
98		Providing White washing with lime to give an even shade :New work (three coats) with lime of approved quality, including cost of materials, labour complete as per specifications and as per directions of Engineer- in-charge.							
		Ceiling Plastering							
		As per Item No: 14	1	x	1	41.40			41.40
						Total Quantity =			41.40 Sqm
99		Finishing walls with Acrylic Smooth exterior paint of required shade :New work (Two coat applied @ 1.67 ltr/10 m² over and including priming coat of exterior primer applied @ 2.20 kg/10 m²) with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.							
		Outer Plastering							
		As per Item No: 20	1	x	1	185.59			185.59
						Total Quantity =			185.59 Sqm
100		Finishing walls with 100% Premium acrylic emulsion paint having VOC less than 50 gm/litre and UV resistance as per IS 15489:2004, Alkali & fungal resistance, dirt resistance exterior paint of required shade (Company Depot Tinted) with silicon additives, New work (Two coats applied @ 1.43 litre/ 10 m². Over and including priming coat of exterior primer applied @ 0.90 litre/10 m² with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge							
		Inner Plastering							
		As per Item No: 19	1	x	1	138.53			138.53
						Total Quantity =			138.53 Sqm
101		Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete as per specifications and as per directions of Engineer in charge.							
		Inner Plastering							
		As per Item No: 19	1	x	1	138.53			138.53
						Total Quantity =			138.53 Sqm
102		Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ m2 including grouting the joints with white cement and matching pigments etc., complete.Size of Tile 600x600 mm							
		Floor Tiles							
		Quality Test Lab	1	x	1	3.00	3.00		9.00
		Supervisor	1	x	1	3.50	3.00		10.50
		Dormitory	1	x	1	3.50	3.60		12.60
		Skirting							
		Quality Test Lab	1	x	1	12.00		0.10	1.20
		Supervisor	1	x	1	13.00		0.10	1.30
		Dormitory	1	x	1	14.20		0.10	1.42
		Deduction							



**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
	RS	-1	x	1	2.40		0.10	-0.24	
	Opening	-1	x	3	0.90		0.10	-0.27	
	D1	-1	x	2	0.90		0.10	-0.18	
	D2	-1	x	1	0.70		0.10	-0.07	
					Total Quantity =			35.26	Sqm
103	Grouting the joints of flooring tiles having joints of 3 mm width, using epoxy grout mix of 0.70 kg of organic coated filler of desired shade (0.10 kg of hardener and 0.20 kg of resin per kg), including filling / grouting and finishing complete as per direction of Engineer-in-charge. <b>Size of Tile 600x600 mm</b>								
		1	x	1	35.26			35.26	
					Total Quantity =			35.26	Sqm
104	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge : ** Flamed finish granite stone slab Black, Cherry Red, Brown, Cat Eye, River Pink or equivalent.								
	<b>Flooring</b>								
	Waiting Area	1	x	1	3.75	6.72		25.20	
	Passage Area	1	x	1	9.35	1.00		9.35	
	<b>Skirting</b>								
	Waiting Area	1	x	1	20.94		0.10	2.09	
	Deduction								
	Opening	-1	x	1	0.90		0.10	-0.09	
	D1	-1	x	2	0.90		0.10	-0.18	
					Total Quantity =			36.37	Sqm
105	Providing and laying flooring and steps machine cut granite slabs 40 mm thick on cement mortar bed 1:6, 25 mm thick, and pointed with ce- ment mortar 1:3 over existing cement concrete bed , including cost of materials, mortar labour, curing complete as per specifications.								
	<b>Flooring</b>								
	Entrance Steps								
	Tread	1	x	2	3.35	0.30		2.01	
	Riser	1	x	3	3.35		0.10	1.01	
	Midlanding	1	x	1	3.35	1.20		4.02	
	Entrance Step 2							0.00	
	Tread	1	x	2	2.70	0.30		1.62	
	Riser	1	x	3	2.70		0.10	0.81	
	Midlanding	1	x	1	2.70	1.20		3.24	
	Quality lab Slab Area 1	1	x	1	3.00	0.75		2.25	
	Quality lab Slab Area 2	1	x	1	1.50	0.75		1.13	
	Waiting Slab Area 1	1	x	1	2.50	0.60		1.50	
	Waiting Slab Area 2	1	x	1	2.80	0.60		1.68	
	Waiting Slab Area 3	1	x	1	2.80	0.60		1.68	
	Waiting Slab Area 4	1	x	1	1.77	0.60		1.06	
	Waiting Slab Area 5	1	x	1	2.70	0.60		1.62	
					Total Quantity =			23.62	Sqm
106	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ m2 including pointing the joints with white cement and matching pigments etc., complete.								
	<b>Flooring</b>								
	Toilet Corridor	1	x	1	1.00	3.75		3.75	
	WC	1	x	2	1.36	0.92		2.50	
	WC/Bath	1	x	1	1.36	1.54		2.09	
					Total Quantity =			8.35	Sqm
107	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer- in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per m2, including pointing in white cement mixed with pigment of matching shade complete.								
	<b>Dado</b>								
	Toilet Corridor	1	x	1	9.50		2.15	20.43	

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
	WC	1	x	2	4.56		2.15	19.61	
	WC/Bath	1	x	1	5.80		2.15	12.47	
	Deduction								
	D2	-1	x	6	0.70		2.15	-9.03	
					Total Quantity =			<b>43.47</b>	<b>Sqm</b>
108	Providing and laying water proofing treatment to the Roof with PU based single component elastomeric pure polyurethane based coating on New terrace/Chajjas/Sunken portion of WC:Bathroom, cold applied PU waterproofing membrane that is highly elastic with elongation greater than 400% and tensile strength greater than 2MPa as per ASTM D412. The waterproofing membrane to be applied in 2coats @ 1.6kg per m2 to achieve final DFT (dry film thickness) of 1mm including prime coat of epoxy primer @150 g per m2 and protection with 120gsm Geo-textile over the waterproofing membrane. The finished cost to include surface preparation, making coving at Junction, Bore Packing, treatment of construction joints completely as per specification & with a 10 years warranty on product & work from certified manufacturers as per the direction of the Engineer in charge.								
	WC	1	x	2	1.36	0.92		2.50	
	WC/Bath	1	x	1	1.36	1.54		2.09	
	Slab 1	1	x	1	7.08	3.53		24.99	
	Slab 2	1	x	1	6.56	3.72		24.40	
					Total Quantity =			<b>53.99</b>	<b>Sqm</b>
109	Providing & fixing and laying pressed clay tiles (as per approved pattern 20 mm nominal thickness of approved size) on roofs jointed with cement mortar 1:4 (1 cement: 4 coarse sand) mixed with 2% integral water proofing compound, laid over a bed of 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) and finished neat complete.								
	Roof area 1	1	x	1	7.08	3.53		24.99	
	Roof area 2	1	x	1	6.56	3.72		24.40	
					Total Quantity =			<b>49.40</b>	<b>Sqm</b>
110	Providing and laying cinder concrete in cement 1:15 ( 1 cement : 15 cinder of 12.5mm nominal gauge) on terraced roof or sunken slabs, laid to slope compacting, including cost of materials, labour, curing complete as per specifications.								
	Roof area 1	1	x	1	7.08	3.53	0.100	2.50	
	Roof area 2	1	x	1	6.56	3.72	0.100	2.44	
					Total Quantity =			<b>4.94</b>	<b>cum</b>
111	Providing Salwood frames of doors, windows, clerestory windows, ventilators and other frames, wrought, framed or assembled including making plaster groves (excluding cost of cement concrete and side clamps), but including cost of materials, labour, usage charges complete as per specifications.								
	D1	1	x	3	5.10	0.10	0.15	0.23	
					Total Quantity =			<b>0.23</b>	<b>cum</b>
112	Fixing of door frame in an existing opening including embedding frame in floor and walls after cutting masonry for holdfasts for embedding holdfast in cement concrete 1:3:6 of 20mm and down size granite metal painting two coats of coal tar to sides of frame, making good the damages to walls and floor as required and disposal of the debris with lead upto 50 m. including cost of materials, labour charges, complete as per specifications								
	D1	1	x	3				3.00	
	D2	1	x	4				4.00	
					Total Quantity =			<b>7.00</b>	<b>Nos</b>
113	Providing and fixing cramps of required size & shape in RCC/ CC / Brick masonry backing with cement mortar 1:2 ( 1 cement :2 coarse sand), including drilling necessary hole in stones and embedding the cramp in the hole (fastener to be paid separately). <b>Stainless steel cramps</b>					KG/ Nos			
	D1	1	x	6	3	0.20		3.60	
	D2	1	x	6	4	0.20		4.80	
					Total Quantity =			<b>8.40</b>	<b>Kg</b>
114	Providing and fixing expansion hold fasteners on C.C./R.C.C./Brick masonry surface backing including drilling necessary holes and the cost of bolt etc complete. <b>Fastener with threaded dia 12 mm</b>								
	D1	1	x	6	3			18.00	
	D2	1	x	6	4			24.00	
					Total Quantity =			<b>42.00</b>	<b>Nos</b>
115	Providing and fixing flush door shutter made out of solid core block board type, well seasoned, chemically treated hard wood battens and internal frame with minimum 45 mm wide wooden frame around door shutters covered with cross bonded wooden sheets (core veneer) hot pressed and fastened on both sides of the door using liquid phenol formaldehyde resin as per IS specifications 2202 (part-I) 1991 from manufacturer complete as per specification								
	D1	1	x	3	0.9		2.10	5.67	

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
						Total Quantity =			5.67 Sqm
116		Providing and fixing flush door shutter made out of solid core block board type, well seasoned, chemically treated hard wood battens and internal frame with minimum 45 mm wide wooden frame alround door shutters covered with cross bonded wooden sheets (core veneer) hot pressed and fastened on both sides of the door using liquid phenol formaldehyde resin as per IS specifications 2202 (part-I) 1991. from manufacturer complete as per spcification. 35 mm thick both side commercial							
		D2	1	x	4	4.9			19.60
						Total Quantity =			19.60 Rmt
117		Providing & fixing to existing door frames, 30mm thick Glass fibre reinforced plastic (FRP) panelled door shutter of required colour and approved brand and manufacture made with fire retardant grade unsaturated polyster resin, moulded to 3mm thick FRP Laminate for forming hollow railsand styles with wooden frame and suitable blocks of seasoned wood inside at required places for fixing of fittings cast monolithically with 5mm thick FRP Laminate for panels conforming to IS 14856 Including fixing to frames							
		D2	1	x	4	0.7		2.10	5.88
						Total Quantity =			5.88 Sqm
118		Providing and fixing chromium plated brass 100 mm mortice latch and lock with 6 levers and a pair of lever handles of approved quality with necessary screws etc. complete.							
		D1	1	x	1	3			3.00
						Total Quantity =			3.00 Nos
119		Providing and fixing chromium plated brass night latch of approved quality including necessary screws etc. complete.							
		D1	1	x	1	3			3.00
						Total Quantity =			3.00 Nos
120		Providing and fixing chromium plated brass handles of 100/125 mm with necessary screws etc. complete							
		D1	1	x	2	3			6.00
						Total Quantity =			6.00 Nos
121		Providing and fixing bright finished brass handles with screws etc. complete: Brass handles 125 mm with plate 175x32 mm							
		D1	1	x	2	3			6.00
						Total Quantity =			6.00 Nos
122		Providing and fixing bright finished brass handles with screws etc. complete: Brass handles 100 mm with plate 150x32 mm							
		D1	1	x	2	3			6.00
						Total Quantity =			6.00 Nos
123		Providing and fixing aluminium tower bolts, ISI marked, anodised (an-odic coating not less than grade AC 10 as per IS : 1868 ) transparent or dyed to required colour or shade, with necessary screws etc. complete							
		D1	1	x	2	3			6.00
		D2	1	x	2	4			8.00
						Total Quantity =			14.00 Nos
124		Providing and fixing bright finished brass butt hinges with necessary screws etc. complete : 125x70x4 mm (ordinary type)							
		D1	1	x	6	3			18.00
						Total Quantity =			18.00 Nos
125		Providing and fixing bright finished brass butt hinges with necessary screws etc. complete : 100x70x4 mm (ordinary type)							
		D2	1	x	3	4			12.00
						Total Quantity =			12.00 Nos
126		Providing and fixing bright finished brass hanging type floor door stopper with necessary screws, etc. complete.							
		D1	1	x	1	3			3.00
		D2	1	x	1	4			4.00
						Total Quantity =			7.00 Nos
127		Providing and fixing aluminium die cast body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 35 kg and door width upto 700 mm), with necessary accessories and screws etc. complete.							
		D1	1	x	1	3			3.00
		D2	1	x	1	4			4.00
						Total Quantity =			7.00 Nos
128		Providing and fixing chromium plated brass curtain rod with ISI mark having wall thickness of 1.25mm with two chromium plated brass brackets fixed with C.P. brass screws and PVC sleeves etc., wherever necessary complete 20mm dia							
		Window W	1	x	5	1.2			6.00
						Total Quantity =			6.00 Metre

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
129	Providing & fixing of 3-track x 2-panel sliding windows made out of multi chambered UPVC(Matching to RAL-9016) sections and with minimum TiO2(Titanium Dioxide) at 6PHR with TPE(Thermo Plastic Elastomer) and lead free, gaskets -grey colour having isolated drainage and reinforced with Galvanized Iron profile through-out the window frame. The outer frame having an overall size of 108mm width x 45mm height with reinforcement of 1mm thickness and Sash with overall size of 39mm x 75mm with GI reinforcement of 2mm and mesh sash of size 37mm x 58mm. Coextruded Glazing bead for fixing of glass shall be of size 20mm x 24 mm. Windows shall be provided with 6mm plain float glass, standard hardware& Multi point locking system with touch lock. Wall thickness of frame & sash shall be of 2mm-2.5mm. Maximum possible size - 2419mm x 2200mm.(The cost is inclusive of all fixtures and separate charges for minor T&P's shall not be made)								
	Window W	1	x	5	1.20		1.10	6.60	
					Total Quantity =			6.60	Sqm
130	Providing & fixing of louvered ventilator made out of multi chambered UPVC(Matching to RAL-9016) sections and with minimum TiO2(Titanium Dioxide) at 6PHR with TPE(Thermo Plastic Elastomer) and lead free with gaskets - grey colour having isolated drainage and reinforced with Galvanized Iron profile through-out the ventilator frame. The frame having overall size of 39mm x 39mm with GI reinforcement of 1mm thickness. Louver clip in Aluminium (powder coated in white) will be used on the frame along with plastic parts for fixing the 4 mm pin head glass. Wall thickness of frame shall be 2mm.Maximum possible size - 1000mm x 1000mm.(The cost is inclusive of all fixtures and separate charges for minor T&P's shall not be made)								
	Ventilator								
	V	1	x	1	0.60		0.60	0.36	
					Total Quantity =			0.36	Sqm
131	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete. Fixed to openings / wooden frames with rawl plugs screws etc.								
	Ground floor					KG/ Nos			
	Window W-1	1	x	5		20.00		100.00	
	V	1	x	1		10.00		10.00	
					Total Quantity =			110.00	Kg
132	Providing and fixing stainless steel ( Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners, stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in- charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.) including cost of materials, labour, usage charges of								
	1 Meter Height Railing							150.00	
	Entrance railing							50.00	
					Total Quantity =			200.00	Kg
133	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer. Using flats 30x6mm for diagonal braces and central cross piece including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.								
	M.S. sheet door							2.00	
					Total Quantity =			2.00	Sqm
134	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters. 80x1.25 mm M.S. laths with 1.25 mm thick top cover								
	Rolling Shutter	1	x	1	2.40		2.52	6.05	
					Total Quantity =			6.05	Sqm

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
135	Extra for providing mechanical device chain and crank operation for operating rolling shutters: including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.								
	Rolling Shutter	1	x	1	2.40		2.52	6.05	
					Total Quantity =			6.05	Sqm
136	Extra for providing 2 HP Mild Steel Auto Reverse Shutter Gearbox for operating rolling shutters including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.								
	Rolling Shutter	1	x	1				1.00	
					Total Quantity =			1.00	Nos
137	Providing and fixing double action hydraulic floor spring of approved brand manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge: With stainless steel cover plate minimum 1.25 mm thickness including cost of materials, labour, usage charges of machinery complete as per specifications.								
	D1	1	x	1	3.00			3.00	
	D2	1	x	1	4.00			4.00	
					Total Quantity =			7.00	Nos
138	Providing and fixing Structural Steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete including cost of materials, labour, usage charges of machinery complete as per specifications and as per directions of the Engineer-in-Charge.								
					Total Length	Unit	Unit Weight	Total Weight	
							Kg/Sqm		
	Truss Area								
	Roof Area	1	x	1	30.69		25.000	767.13	
	Sides	1	x	1	20.83		20.000	416.50	
					Total Quantity =			1183.63	Kg
139	Painting wood work with Deluxe Multi Surface Paint of required shade. Two coat applied @ 0.90 ltr/10 m <sup>2</sup> over an under coat of primer applied @0.75 ltr/10 m <sup>2</sup> of approved brand and manufacture to give an even shade including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, sand papering and knotting, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.								
	D1	1	x	3	0.90		2.10	5.67	
					Total Quantity =			5.67	Sqm
140	Applying priming coat: With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.								
	Ground floor								
	Hand Rail							100.00	
	Window W-1	2	x	5	1.50		1.20	18.00	
	Ventilator	2	x	1	0.60		0.60	0.72	
					Total Quantity =			118.72	Sqm
141	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :Two coats on new work after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.								
					Total Length	Unit	Unit Area	Total Area	
	Hand Rail							100.00	
	Ground floor								
	Window W-1	2	x	5	1.50		1.20	18.00	
	Ventilator	2	x	1	0.60		0.60	0.72	
					Total Quantity =			118.72	Sqm

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
142	Providing & fixing corrugated G.S. sheet roofing including vertical /curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete as per design drawings (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required as per the direction of Engineer in charge.								
	Roof Area	1	x	1	7.22	4.25		30.69	
	Front Side	1	x	1		4.25	1.50	6.38	
	Sides	1	x	2	4.25		1.70	14.45	
					Total Quantity =			51.51	Sqm
143	Providing and fixing 15 cm wide, 45 cm overall semi-circular plain G.S. sheet gutter with iron brackets 40x3mm size, bolts, nuts and washers etc., including making necessary connections with rain water pipes complete. (0.63 mm thick with zinc coating not less than 275 g/m <sup>2</sup> )								
	Gutter side	1	x	1	4.25			4.25	
					Total Quantity =			4.25	RM
144	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes 100 mm diameter								
	Rain Water Pipe	1	x	10	5.00			50.00	
					Total Quantity =			50.00	RM
145	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes of 150mm dia conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes								
	Rain Water Pipe	1	x	20	5.00			100.00	
					Total Quantity =			100.00	RM
	<b>WATER SUPPLY AND SANITORY INSTALLATIONS WORK:-</b>								
146	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 600 g								
	Toilet	1	x	3				3.00	
					Total Quantity =			3.00	nos
147	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931								
	Toilet & Kitchen	1	x	4				4.00	
					Total Quantity =			4.00	Nos
148	Providing and fixing gun metal non- return valve of approved quality (screwed end) : 32 mm nominal bore - Vertical								
		1	x	1	1.000			1.00	
					Total Quantity =			1.00	Nos
149	Providing and fixing gun metal non- return valve of approved quality (screwed end) : 40 mm nominal bore - Horizontal	1	x	1	1.00			1.00	
					Total Quantity =			1.00	Nos
	<b>PVC pipes</b>								
150	Supplying PVC ring tite pipes conforming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour with all lead & lift including encasing the pipe around to a depth of not less than 15 cms. with soft gravel or selected earth available from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing) etc.	1	x	1	10.000			10.00	
					Total Quantity =			10.00	Rm
151	Supplying PVC ring tite pipes conforming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour with all lead & lift including encasing the pipe around to a depth of not less than 15 cms. with soft gravel or selected earth available from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing) etc.	1	x	1	10.000			10.00	
					Total Quantity =			10.00	Rm

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
152	Supplying PVC ring tite pipes conforming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour with all lead & lift including encasing the pipe around to a depth of not less than 15 cms. with soft gravel or selected earth available from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing) etc.	1	x	1	6.000			6.00	
					Total Quantity =			6.00	Rm
153	Supplying PVC ring tite pipes conforming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour with all lead & lift including encasing the pipe around to a depth of not less than 15 cms. with soft gravel or selected earth available from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing) etc.	1	x	1	6.000			6.00	
					Total Quantity =			6.00	Rm
154	Supplying of special moulded variety PVC couplers as per IS 7834/ 1987 and fabricated as per IG124/ 1984 with ISI mark and with its latest amendments to walk site etc. <b>complete. 25mm dia PVC couplers</b>	1	x	1	4.000			4.00	Nos
155	Supplying of special moulded variety PVC couplers as per IS 7834/ 1987 and fabricated as per IG124/ 1984 with ISI mark and with its latest amendments to walk site etc. <b>complete. 32mm dia PVC couplers</b>	1	x	1	4.000			4.00	Nos
156	Supply and delivery at site special moulded variety PVC elbows as per IS 7834/ 1987 and fabricated as per IG124/ 1984 with ISI mark with its latest amendments <b>25mm dia PVC Elbows</b>	1	x	1	4.000			4.00	Nos
157	Supply and delivery at site special moulded variety PVC elbows as per IS 7834/ 1987 and fabricated as per IG124/ 1984 with ISI mark with its latest amendments <b>32mm dia PVC Elbows</b>	1	x	1	4.000			4.00	Nos
158	Supply and delivery at site special moulded variety PVC bend as per IS 7834/ 1987 and fabricated as per IG124/ 1984 with ISI mark with its latest amendments <b>25mm dia PVC Bend</b>	1	x	1	3.000			3.00	Nos
159	Supply and delivery at site special moulded variety PVC bend as per IS 7834/ 1987 and fabricated as per IG124/ 1984 with ISI mark with its latest amendments <b>32mm dia PVC Bend</b>	1	x	1	3.000			3.00	Nos
160	Supply and delivery at site special moulded variety PVC tee as per IS 7834/ 1987 and fabricated as per IG124/ 1984 with ISI mark with its latest amendments <b>25mm dia PVC Tee</b>	1	x	1	2.000			2.00	Nos
161	Supply and delivery at site special moulded variety PVC tee as per IS 7834/ 1987 and fabricated as per IG124/ 1984 with ISI mark with its latest amendments <b>32mm dia PVC Tee</b>	1	x	1	2.000			2.00	Nos
162	Supply and delivery at site special moulded variety PVC tee as per IS 7834/ 1987 and fabricated as per IG124/ 1984 with ISI mark with its latest amendments <b>110mm dia PVC Tee</b>	1	x	1	2.000			2.00	Nos
163	Supply and delivery at site special moulded variety PVC tee as per IS 7834/ 1987 and fabricated as per IG124/ 1984 with ISI mark with its latest amendments <b>75mm dia PVC Tee</b>	1	x	1	2.000			2.00	Nos
164	Providing and installing at site of work P.V.C. pipes including cost of pipes and specials and labour, including lowering into trenches, laying true to line, level and perfect linking at joints leak proof including jointing of approved type with all labour charges and all lift charges, handling charges including encasing the pipe around to a depth not less than 15 cms with gravel or selected earth available from the excavation etc. complete. <b>110mm Dia PVC Pipe</b>	1	x	1	10.000			10.00	
					Total Quantity =			10.00	Rm
165	Providing and installing at site of work P.V.C. pipes including cost of pipes and specials and labour, including lowering into trenches, laying true to line, level and perfect linking at joints leak proof including jointing of approved type with all labour charges and all lift charges, handling charges including encasing the pipe around to a depth not less than 15 cms with gravel or selected earth available from the excavation etc. complete. <b>75mm Dia PVC Pipe</b>	1	x	1	10.000			10.00	
					Total Quantity =			10.00	Rm

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
166		Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required : <b>W.C. pan with ISI marked white solid plastic seat and lid</b>							
		Toilet	1	x	3				3.00
						Total Quantity =			3.00 Nos
167		White Vitreous China Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar tap							
		Toilet - Wash Basin	1	x	2				2.00
						Total Quantity =			2.00 Nos
168		Providing and fixing wash basin with C.I. brackets, 15 mm dia CP Brass single hole basin mixer of approved quality and make, including painting of fittings and brackets, cutting and making good the walls wherever required: using White Vitreous China Wash basin size 550x400 mm with a 15 mm CP Brass single hole basin mixer							
		Toilet - Wash Basin	1	x	1				1.00
						Total Quantity =			1.00 Nos
169		Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.							
		Toilet	1	x	2				2.00
						Total Quantity =			2.00 Nos
170		Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour, weighing not less than 105 gms.							
		Toilet - Wash Basin	1	x	2				2.00
						Total Quantity =			2.00 Nos
171		450 mm long towel rail with total length of 495 mm, 78 mm wide and effective height of 88 mm, weighing not less than 170 g.							
		Toilet	1	x	1	3.000			3.00
						Total Quantity =			3.00 nos
172		Providing and fixing 100 mm sand cast iron grating for gully covers							
		Toilet	1	x	2				2.00
						Total Quantity =			2.00 Nos
173		Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 fine sand : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design: Inside dimensions 455x610 mm and 45 cm deep for single pipe line : With common burnt clay (non modular) bricks of class designation 3.5							
		Toilet	1	x	2				2.00
						Total Quantity =			2.00 Nos
DETAIL ESTIMATE - SECURITY BLOCK									
SI No.		Description	Nos			L	B	D	Quantity Unit
174	1.14.1	_Earth work excavation for Foundation by mechanical means for all works & depth upto 3 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenaces required to complete the work. (Excavation Payable for Footing Area Only) <b>In all kinds of soils Depth upto 3 m</b>							
		Footing	1	x	4	1.15	1.15	1.00	5.29
						Total Quantity =			5.29 Cum
175	1.15	Earth work excavation for Foundation by mechanical means for all works & depth upto 1.5 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenaces required to complete the work <b>In ordinary/soft rock without blasting upto 1.5 m depth\</b>							



2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
		Footing	1	x	4	1.15	1.15	0.50	2.65
		<b>Plinth Beam</b>							
		Grid A1-A2, Grid B1-B2	1	x	2	2.08	0.43	0.43	0.77
		Grid 1A-2A, Grid 1B-2B	1	x	2	2.08	0.43	0.43	0.77
						Total Quantity =			4.18 Cum
176	1.15.2	Earth work excavation for Foundation by mechanical means for all works & depth upto 1.5 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work <b>Depth exceeding 1.5 m, but not exceeding 3 m</b>							
		Footing	1	x	4	1.15	1.15	0.70	3.70
						Total Quantity =			3.70 Cum
177	1.16.1	Earth work excavation for FOUNDATION by Mechanical means depth upto 1.50m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including cost of explosives, dressing of excavated surfaces, disposing off or levelling the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, blasting materials, tools, usage of Machinery & all other appurtenances required to complete the work. (Excavation Payable for Footing Area Only) <b>In Hard Rock (requiring blasting) Depth upto 1.50m</b>							
									10.00
						Total Quantity =			10.00 Cum
178	1.16.2	Earth work excavation for FOUNDATION by Mechanical means depth upto 1.50m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including cost of explosives, dressing of excavated surfaces, disposing off or levelling the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, blasting materials, tools, usage of Machinery & all other appurtenances required to complete the work. (Excavation Payable for Footing Area Only) <b>Depth exceeding 1.5 m but not exceeding 3 m</b>							
									10.00
						Total Quantity =			10.00 Cum
179	1.9	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations and other similar works etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering lead upto 50 m and lift upto 1.5 m							
		Earthwork Excavation (Item No:1+2a+2b)	1	x	1	13.18			13.18
		<b>Deductions</b>							
		Sand Filling (Item No:5)	-1	x	1	1.05			-1.05
		P.C.C 1:4:8 (Item No:6)	-1	x	1	1.05			-1.05
		Footing Concrete (Item No:13)	-1	x	1	0.85			-0.85
						Total Quantity =			10.24 Cum
180	4.1	Providing and injecting chemical emulsion for Pre-constructional Anti-Termite Treatment, creating continuous chemical barrier under and around the column pits, walls, trenches, basement excavation, top surface of the plinth filling, junction of wall and floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surrounding of pipes and conduits with Chlorpyrifos 20% E.C. / Lindane 20% E.C. @ 3.19 l/m <sup>2</sup> including cost of chemical, diluting in water to one percent concentration, labour, usage charges of machinery, complete as per specifications.							
		<b>Plinth Area</b>							
		Area 1	1	x	1	3.46	3.46		11.97
						Total Quantity =			11.97 Sqm
181	1.23	Providing and Filling in foundation with granite / trap broken metal 100mm. And down size & with approved sand including hand packing, ramming, watering, including cost of all materials and labour with all lead and lift complete as per specifications.							
		<b>Footing</b>							
		Footing	1	x	4	1.15	1.15	0.10	0.53
		<b>Plinth Beam</b>							
		Grid A1-A2, Grid B1-B2	1	x	2	3.00	0.43	0.10	0.26
		Grid 1A-2A, Grid 1B-2B	1	x	2	3.00	0.43	0.10	0.26
									1.05
		<b>Ground floor -Flooring P.C.C</b>							
		Security	1	x	1	3.00	3.00	0.10	0.90
						Total Quantity =			1.95 Cum

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
182	2.1.1	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Mix 1:5:10 Using 40 mm nominal size graded crushed coarse aggregates</b>							
									10.00
						Total Quantity =			10.00 Cum
183	2.1.2	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Mix 1:4:8( M5) Using 40 mm nominal size graded crushed coarse aggregates</b>							
		<b>Footing</b>							
		Footing	1	x	4	1.15	1.15	0.10	0.53
		<b>Plinth Beam</b>							
		Grid A1-A2, Grid B1-B2	1	x	2	3.00	0.43	0.10	0.26
		Grid 1A-2A, Grid 1B-2B	1	x	2	3.00	0.43	0.10	0.26
									1.05
		<b>Ground floor -Flooring P.C.C</b>							
		Security	1	x	1	3.00	3.00	0.10	0.90
						Total Quantity =			1.95 Cum
184	2.1.4	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications.(The cost including Centering and shuttering but excluding steel reinforcement) <b>Mix 1:3:6 (M10) Using 20 mm nominal size graded crushed coarse aggregates</b>							
									10.00
						Total Quantity =			10.00 Cum
185	2.3.3	Providing and laying in Reinforced cement concrete for all Basement & surface level works, return walls, retaining walls, sunken floors etc. The granite/trap/ basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necessary, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates</b>							
									10.00
						Total Quantity =			10.00 Cum
186	2.4.4	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement, dowel bars & formwork to be paid separately) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Footing</b>							
		<b>All works upto plinth level</b>							
		<b>Footing</b>							
		Footing 1	1	x	4	0.95	0.95	0.15	0.54
		"	1	x	4	1.32		0.06	0.31
						Total Quantity =			0.85

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
187	2.4.4	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement, dowel bars & formwork to be paid separately) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Column/Pedestals</b>							
		Column Pedestal	1	x	4	0.23	0.23	1.45	0.31
						Total Quantity =			0.31
188	2.4.4	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement, dowel bars & formwork to be paid separately) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Plinth Beam</b>							
		Grid A1-A2, Grid B1-B2	1	x	2	3.46	0.23	0.23	0.37
		Grid 1A-2A, Grid 1B-2B	1	x	2	3.00	0.23	0.23	0.32
						Total Quantity =			0.68
189	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Ground Floor Column</b>							
		<b>Column</b>							
		Column 1	1	x	4	0.23	0.23	3.22	0.68
									0.68
						Total Quantity =			0.68 Cum
190	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Ground Floor Roof Beam &amp; Lintel Beam</b>							
		Window w1	1	x	2	3.46	0.23	0.15	0.24
		Door D'	1	x	2	3.00	0.23	0.15	0.21
									0.45
		<b>Roof Beam</b>							
		Grid A1-A2, Grid B1-B2	1	x	2	3.46	0.23	0.11	0.17
		Grid 1A-2A, Grid 1B-2B	1	x	2	3.00	0.23	0.11	0.14
									0.31
						Total Quantity =			0.76 Cum
191	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Ground Floor Roof Slab and Staircase</b>							

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
		Roof Area 1	1	x	1	4.75	3.46	0.13	2.05
		Roof Slab Projection	1	x	2	3.46	0.30	0.20	0.42
									2.47
						Total Quantity =			2.47 Cum
192	2.5	Providing and laying in position Reinforced cement concrete for all Super structures of building, Road works, Water works, Super structure works of bridges upto 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost including Centering and shuttering but excluding steel reinforcement) <b>Ground Floor Sunshade</b>							
		<b>Sunshade</b>							
		Window w1 & Door	1	x	1	16.24	0.60	0.10	0.97
						Total Quantity =			0.97 cum
193	11.32	Providing Thermo-Mechanically Treated bars of grade Fe-550 Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position, binding and anchoring to adjacent members wherever necessary complete as per Design including cost of material, labour, usage charges complete as per specifications. (The laps and wastages shall not be measured separately)							
		<b>Foundation</b>							
		Footing	1	x	1	0.85	90	Kg/ Cum	76.56
		Column Pedestal	1	x	1	0.31	250	Kg/ Cum	76.44
		Plinth Beam	1	x	1	0.68	150	Kg/ Cum	102.52
		<b>Ground Floor</b>							
		Column	1	x	1	0.68	250	Kg/ Cum	170.34
		Beam @ 6.5m LVL	1	x	1	0.31	250	Kg/ Cum	78.00
		Slab	1	x	1	2.47	100	Kg/ Cum	246.79
		Lintel & Sunshade	1	x	1	1.42	120.7	Kg/ Cum	171.41
						Total Quantity =			922.06 Kg
194	6.2	Providing Brick work with common burnt clay modular bricks of class designation 3.5 in foundation and plinth in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work.							
		<b>Basement To GF</b>							
		Grid A1-A2, Grid B1-B2	1	x	2	3.00	0.23	0.30	0.41
		Grid 1A-2A, Grid 1B-2B	1	x	2	3.00	0.23	0.30	0.41
						Total Quantity =			0.83 Cum
195	6.8	Providing Brick work with common burnt clay Non Modular bricks of class designation 3.5 in superstructure above plinth level in all shapes and sizes in Cement mortar 1:6 (1 cement : 6 coarse sand) including cost of all materials, labour, scaffolding and usage charges of machinery & other incidental charges complete as per the direction of engineer incharge of work							
		<b>Ground floor</b>							
		Grid A1-A2, Grid B1-B2	1	x	2	3.00	0.23	2.70	3.73
		Grid 1A-2A, Grid 1B-2B	1	x	2	3.00	0.23	2.70	3.73
		Roof Beam 1A - 1B and 2A - 2B Triangular	1	x	2	3.00	0.23	0.23	0.31
		<b>Deduction</b>							
		Window w1	-1	x	7	1.50	0.23	1.20	-2.90
		Door D'	-1	x	1	0.90	0.23	2.10	-0.43
		Steps 1	1	x	1	0.90	1.20	0.15	0.16
		Steps 2	1	x	1	0.60	1.20	0.15	0.11
						Total Quantity =			4.70 Cum
196	8.4.1	Providing 12 mm cement plaster finished with a floating coat of neat cement of mix :1:3 (1 cement: 3 fine sand) to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.							
		<b>Ceiling Plastering</b>							
		Security cabin	1	x	1	4.75	3.46		16.44
		Sunshade	1	x	2	16.24	0.60		19.49
						Total Quantity =			35.92 Sqm
197	8.4.2	Providing 12 mm cement plaster with cement mortar 1:4 (1 cement: 4 fine sand) to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge.							

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
		Inner Plastering							
		Security cabin							
		Grid A1-A2, Grid B1-B2	1	x	2	3.00		3.15	18.90
		Grid 1A-2A, Grid 1B-2B	1	x	2	3.00		3.15	18.90
		Roof Beam 1A - 1B and 2A - 2B Triangular	1	x	2	3.46		0.23	1.56
		Deduction							
		Window w1	-1	x	7	1.50		1.20	-12.60
		Door D'	-1	x	1	0.90		2.10	-1.89
						Total Quantity =			24.87 Sqm
198	8.3.1	Providing 20 mm cement plaster of mix :1:4 (1 cement: 4 fine sand) to brick/stone masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications and as per directions of Engineer-in-charge							
		Outer Plastering							
		Security cabin							
		Grid A1-A2, Grid B1-B2	1	x	2	3.46		3.45	23.87
		Grid 1A-2A, Grid 1B-2B	1	x	2	3.46		3.45	23.87
		Roof Beam 1A - 1B and 2A - 2B Triangular	1	x	2	3.00		0.23	1.35
		Deduction							
		Window w1	-1	x	7	1.50		1.20	-12.60
		Door D'	-1	x	1	0.90		2.10	-1.89
						Total Quantity =			34.61 Sqm
199	8.16.2	Providing and fixing suitable plaster mesh 150mm wide manufactured out of hot dipped galvanised iron of nominal thickness 0.35mm with a zinc coating of 120g/m2 width, along route of walls chipped for services, junction between RCC and brick walls including cost of materials, labour for fixing complete as per specifications. ( length of mesh only be measured for payment							
		Mesh							100.00
						Total Quantity =			100.00 Rmt
200	8.79	Forming groove of uniform size in the top layer of plaster as per approved pattern including repair to the edges of panels and finishing the groove complete as per specifications and direction of the Engineer-in-charge: 10mm to 15 mm wide and 8 mm deep groove.							
		Goove Line							250.00
						Total Quantity =			50.00 Rmt
201	9.1	Providing and laying Cement concrete flooring 40 mm thick with 20 mm nominal size stone aggregate using 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry complete.							
									1.00
						Total Quantity =			1.00 Sqm
202	8.21	Providing White washing with lime to give an even shade :New work (three coats) with lime of approved quality, including cost of materials, labour complete as per specifications and as per directions of Engineer- in-charge.							
		Ceiling Plastering							
		As per Item No: 14	1	x	1	35.92			35.92
						Total Quantity =			35.92 Sqm
203	8.30	Finishing walls with Acrylic Smooth exterior paint of required shade :New work (Two coat applied @ 1.67 ltr/10 m <sup>2</sup> over and including priming coat of exterior primer applied @ 2.20 kg/10 m <sup>2</sup> ) with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per							
		Outer Plastering							
		As per Item No: 20	1	x	1	34.61			34.61
						Total Quantity =			34.61 Sqm
204	8.33.1	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications: Two coats applied on walls @ 1.25 L/10 m <sup>2</sup> over and including one coat of Special primer applied @ 0.75 L/10 m <sup>2</sup> with paint of approved quality to give an even shade, after thoroughly brooming the surface to remove all dirt, dust, mortar drops and foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge. (The gloss should be 50% @ 60 degree angle with 10 years life)	m2	-	158.00	-			
		Inner Plastering							
		As per Item No: 19	1	x	1	24.87			24.87
						Total Quantity =			24.87 Sqm

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
205	9.12	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ m2 including grouting the joints with white cement and matching pigments etc., complete <b>Size of Tile 600x600 mm.</b>							
		Security cabin	1	x	1	3.00	3.00		9.00
						Total Quantity =			9.00 Sqm
206	7.16	Providing & fixing and laying pressed clay tiles (as per approved pattern 20 mm nominal thickness of approved size) on roofs jointed with cement mortar 1:4 (1 cement: 4 coarse sand) mixed with 2% integral water proofing compound, laid over a bed of 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) and finished neat complete.							
		Security cabin	1	x	1	4.75	3.46		16.44
						Total Quantity =			16.44 Sqm
207	7.18	Providing and laying cinder concrete in cement 1:15 ( 1 cement : 15 cinder of 12.5mm nominal gauge) on terraced roof or sunken slabs, laid to slope compacting, including cost of materials, labour, curing complete as per specifications.							
		Security cabin	1	x	1	4.75	3.46	0.100	1.64
						Total Quantity =			1.64 cum
208	8.33.2	Painting wood work with Deluxe Multi Surface Paint of required shade. Two coat applied @ 0.90 ltr/10 m <sup>2</sup> over an under coat of primer applied @0.75 ltr/10 m <sup>2</sup> of approved brand and manufacture to give an even shade including preparing the surface after thoroughly cleaning oil, grease, dirt and foreign matter, sand papering and knotting , cost of materials, labour complete as per specifications and as per directions of Engineer-in-charge.							
		D1	1	x	2	0.90		2.10	3.78
						Total Quantity =			3.78 Sqm
209	9.28	Providing and laying flooring and steps machine cut granite slabs 40 mm thick on cement mortar bed 1:6, 25 mm thick, and pointed with ce- ment mortar 1:3 over existing cement concrete bed , including cost of materials, mortar labour, curing complete as per specifications.							
		<b>Flooring</b>							
		<b>Entrance Step</b>							
		Tread	1	x	2	1.20	0.30		0.72
		Riser	1	x	2	1.20	0.15		0.36
						Total Quantity =			1.08 Sqm
210	12.88	Providing & fixing of 2-track x 2-panel sliding windows made out of multi chambered UPVC(Matching to RAL-9016) sections and with minimum TiO2(Titanium Dioxide) at 6PHR with TPE(Thermo Plastic Elastomer) and lead free, gaskets -grey colour having isolated drainage and reinforced with Galvanized Iron profile through-out the window frame. The outer frame having a overall size of 60mm width x 45mmheight with reinforcement of 1mm thickness and Sash with overall size of 39mm X 58mm with GI reinforcement of 1mm for the frame and 1.5 mm for the sash. Coextruded Glazing bead for fixing of glass shall be of size 20mm x 24mm. Windows shall be provided with 5mm plain float glass, standard hardware& single point locking							
		<b>Security Cabin</b>							
		W 1	1	x	3	3.00		1.20	10.80
						Total Quantity =			10.80 Sqm
211	12.57.4	Providing and fixing flush door shutter made out of solid core block board type, well seasoned , chemically treated hard wood battens and internal frame with minimum 45 mm wide wooden frame alround door shutters covered with cross bonded wooden sheets (core veneer) hot pressed and fastened on both sides of the door using liquid phenol formaldehyde resin as per IS specifications 2202 (part-I) 1991. from manufacturer complete as per spcification. <b>-do- 35 mm thick both side Teak</b>							
		D1	1	x	1	0.90		2.10	1.89
						Total Quantity =			1.89 Sqm
212	12.10	Providing Teak wood frames of doors, windows, clerestory windows, ventilators and other frames, wrought, framed or assembled including making plaster groves (excluding cost of cement concrete and side clamps ), but including cost of materials, labour, usage charges complete as per specifications.							
		D1	1	x	1	5.10	0.10	0.15	0.08
						Total Quantity =			0.08 Cum

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
213	11.34A	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete. Fixed to steel windows by welding.							
		W 1	1	x	3			20.00	60.00
						Total Quantity =			60.00 Kg
WATER SUPPLY AND SANITORY INSTALLATIONS WORK:-									
214	10.1.7	Supplying PVC ringite pipes conforming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour with all lead & lift including encasing the pipe alround to a depth of not less than 15 cms. with soft gravel or selected earth available from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing) etc. for:PVC pipes 110mm dia., 6 kg/sqcm & class 3							
		Rain Water pipe	1	x	2	4.000			8.00
						Total Quantity =			8.00 Rm
DETAILED ESTIMATE - ROAD WORK									
SI No.		Description	Nos			L	B	D	Quantity Unit
215		Loosening, leveling and Compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150 mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density as given in Table 300-2 for embankment construction							
		Road	1	x	1	416.00		0.15	62.40
						Total Quantity			62.40 Cum
216		Construction of Granular Sub-Base of required grading as per design mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401- Grading -I Material							
		Road	1	x	1	416.00		0.15	62.40
						Total Quantity			62.40 Cum
217		Wet Mix Macadam (Plant Mix Method) Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver/ grader in sub-base / base course onwell prepared surface and compacting with vibratory roller to achieve the desired density							
		Road	1	x	1	416.00		0.13	54.08
						Total Quantity			54.08 Cum
218		Prime Coat over WMM/WBM: Providing and applying primer coat with SS1 grade Bitumen Emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.70 kg per m2 using mechanical means							
		Road	1	x	1	416.00			416.00
						Total Quantity			416.00 Cum
219		Tack coat on Bituminous surface: Providing and applying tack coat with RS1 Bituminous Emulsion using emulsion pressure distributor at the rate of 0.20 kg/m2 on the prepared bituminous surface cleaned with mechanical broom							
		Road	1	x	1	416.00			416.00
						Total Quantity			416.00 Cum
220		Dense Graded Bituminous macadam Grading - i for traffic <20 mSa Providing and laying Dense Graded Bituminous Macadam with 40/60 TPH capacity hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder VG-30, @ 4.0 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No.							
		Road	1	x	1	416.00		0.07	29.12
						Total Quantity			29.12 Cum
221		Providing Thermo-Mechanically Treated bars of grade Fe-550 Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position, binding and anchoring to adjacent members wherever necessary complete as per Design including cost of material, labour, usage charges complete as per specifications. (The laps and wastages shall not be measured separately)							
		Road	1	x	1	416.00		0.03	12.48
						Total Quantity			12.48 Cum

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT										
DETAIL ESTIMATE - COLD STORAGE										
SI No.		Description	Nos			L	B	D	Quantity	Unit
CHAVVENAHALLI HORTICULTURE FARM, MALUR TALUK, KOLAR DISTRICT (COLD STORAGE - 2000MT)										
DETAILED ESTIMATE- PAVER BLOCK										
SI No.		Description	Nos			L	B	D	Quantity	Unit
222		Construction of Granular Sub-Base of required grading as per design mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401- <b>Grading -I Material</b>								
		Paver Block	1	x	1	55.00		0.15	8.25	
						Total Quantity			8.25	Cum
223		<b>Precast Cement Concrete interlocking Blocks</b> Providing and laying 60mm thick factory made precast M -30 grade Cement Concrete Paver Block as per IRC SP 63:2018 & IS 15658 for Cycle Tracks & Pedestrian Footpaths of approved shape and colour, laid in required pattern and including over 30mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge. (WMM/WBM Base to be paid separately if necessary as per relevant technical specification)								
		Paver Block	1	x	1	55.00			55.00	
						Total Quantity			55.00	Sqm
DETAIL ESTIMATE - STORM WATER DRAIN										
SI No.		Description	Nos			L	B	D	Quantity	Unit
224		<b>COLD STORAGE</b> - Earth work excavation for Foundation by mechanical means for all works & depth upto 3 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances								
		In all kinds of soils Depth upto 3 m								
									10.00	
						Total Quantity =			10.00	Cum
225		Earth work excavation for Foundation by mechanical means for all works & depth upto 1.5 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work <b>In ordinary/soft rock without blasting upto 1.5 m depth</b>								
		Earth work	1	x	1	55.00	1.15	1.30	82.23	
						Total Quantity =			82.23	Cum
226		Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations and other similar works etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering lead up to 50 m and lift upto 1.5 m.								
		Earthwork Excavation (Item No:1)	1	x	1		82.23		82.23	
		<b>Deductions</b>								
		P.C.C 1:4:8 (Item No:3)	-1	x	1		6.05		-6.05	
		Concrete Qty	-1	x	1	51.98			-51.98	
						Total Quantity =			24.20	Cum
227		Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & including Centering and shuttering) <b>Mix 1:4:8( M5) Using 40 mm nominal size graded crushed coarse aggregates</b>								
		Mix 1:4:8( M5) Using 40 mm nominal size graded crushed coarse aggregates								
		PCC	1	x	1	55.00	1.10	0.10	6.05	
						Total Quantity =			6.05	Cum



2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT										
DETAIL ESTIMATE - COLD STORAGE										
SI No.		Description	Nos			L	B	D	Quantity	Unit
228		Providing and laying in position Reinforced cement concrete for all <b>Sub structures</b> of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement, dowel bars & including Centering and shuttering) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Slab</b>								
		Drain Base	1	x	1	55.00	0.90	0.15	7.43	
						Total Quantity =			7.43	Cum
229		Providing and laying in position Reinforced cement concrete for all <b>Sub structures</b> of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality confirming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement, dowel bars & including Centering and shuttering) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Wall</b>								
		Drain wall	1	x	1	55.00	0.90	0.15	7.43	
						Total Quantity =			7.43	Cum
230		Providing Thermo-Mechanically Treated bars of grade Fe-550 Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position, binding and anchoring to adjacent members wherever necessary complete as per Design including cost of material, labour, usage charges complete as per specifications. (The laps and wastages shall not be measured separately)								
		<b>Foundation</b>								
		Slab	1	x	1	7.43	100	Kg/ Cum	742.50	
		RCC Wall	1	x	1	7.43	120	Kg/ Cum	891.00	
						Total Quantity =			1633.50	Kg
DETAIL ESTIMATE - SUMP										
SI No.		Description	Nos			L	B	D	Quantity	Unit
231		<b>COLD STORAGE</b> - Earth work excavation for Foundation by mechanical means for all works & depth upto 3 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work								
		In all kinds of soils Depth upto 3 m							10.00	
						Total Quantity =			10.00	Cum
232		Earth work excavation for Foundation by mechanical means for all works & depth upto 1.5 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work <b>In ordinary/soft rock without blasting upto 1.5 m depth</b>								
		Earth work	1	x	1	3.84	2.84	1.500	16.36	
						Total Quantity =			16.36	Cum
233		Earth work excavation for Foundation by mechanical means for all works & depth upto 1.5 m, as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work <b>Depth exceeding 1.5 m, but not exceeding 3 m</b>								
		Earth work	1	x	1	3.84	2.84	0.250	2.73	
						Total Quantity =			2.73	Cum

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**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
240	Providing and laying in position Reinforced cement concrete for all <b>Sub structures</b> of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/ trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers laid in layers, well compacted using needle vibrators. The cost includes all lead & lifts, cost of all materials, quality conforming to the requirements of relevant IS codes , labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement, dowel bars & including Centering and shuttering) <b>M30 Design Mix Using 20 mm nominal size graded crushed coarse aggregates Wall</b>								
	Short wall	1	x	1	2.2	0.2	1.350	0.59	
	Long wall	1	x	1	3.2	0.2	1.350	0.86	
	<b>Deductions</b>								
	Manhole cover	-1	x	1	0.75	0.75	0.150	-0.08	<b>1.37</b>
					<b>Total Quantity =</b>			<b>4.20</b>	<b>Cum</b>
241	Providing Thermo-Mechanically Treated bars of grade Fe-550 Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position, binding and anchoring to adjacent members wherever necessary complete as per Design including cost of material, labour, usage charges complete as per specifications. (The laps and wastages shall not be measured separately)								
	Slab	1	x	1	2.82	100	Kg/ Cum	282.19	
	RCC Wall	1	x	1	1.37	120	Kg/ Cum	164.84	
					<b>Total Quantity =</b>			<b>447.03</b>	<b>Kg</b>
242	Supplying and fixing SFRC frame and cover conforming to IS 12592 (part I)-1988 and IS 12592 (part-II)- 1991 with latest amendment, including cutting slabs to the required size for the opening and fixing the cover in C.C. 1:2:4 and C.M. 1:3 plastering 20 mm thick to all exposed faces, curing for 10 days with all lead and lift with appurtenances. <b>complete</b>								
	Manhole cover	1	x	1	1			1.00	
					<b>Total Quantity =</b>			<b>1.00</b>	<b>Nos</b>

**DETAILED ESTIMATE - ELECTRICAL**

	<b>PVC CONDUITS &amp; ACCESSORIES</b>								
	<b>Open Conduit System</b>								
243	Supplying heavy gauge PVC conduit pipe ..... dia ..... mm thick conforming to IS 2509 with suitable size bends, junction boxes, adhesive paste etc , and fixing using inverted wood plugs in case of RCC ceiling and RCC wall/ stone structure or rawl plugs in case of brick walls and cement plastering the damaged portion using heavy gauge saddles at an interval of 700mm using NF screws 19/20 mm dia 2 mm thick								
	Wherever Necessary	1	x	1	50.00			50.00	
					<b>Total Quantity</b>			<b>50.00</b>	<b>Meter</b>
244	Supplying heavy gauge PVC Conduit Pipe .... dia ..... mm thick with suitable size bends, metal junction boxes adhesive paste etc, by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering upto the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary <b>25 mm dia 2 mm thick</b>								
	<b>Ground Floor</b>								
	DB to Switch Board Line	1	x	8	3.00			24.00	
	Switch Board-1 to Light Point	1	x	5	3.00			15.00	
	Switch Board-2 to Light Point	1	x	5	3.00			15.00	
	Switch Board-3 to Light Point	1	x	10	3.00			30.00	
	Switch Board-4 to Light Point	1	x	10	3.00			30.00	
	Switch Board-5 to Light Point	1	x	4	3.00			12.00	
	Switch Board-6 to Light Point	1	x	10	3.00			30.00	
	Switch Board-7 to Light Point	1	x	10	3.00			30.00	
	Switch Board-8 to Light Point	1	x	5	3.00			15.00	
	<b>First Floor</b>								
	DB to Switch Board Line	1	x	8	3.00			24.00	
	Switch Board-1 to Light Point	1	x	5	3.00			15.00	
	Switch Board-2 to Light Point	1	x	5	3.00			15.00	
	Switch Board-3 to Light Point	1	x	10	3.00			30.00	
	Switch Board-4 to Light Point	1	x	10	3.00			30.00	
	Switch Board-5 to Light Point	1	x	4	3.00			12.00	
	Switch Board-6 to Light Point	1	x	10	3.00			30.00	
	Switch Board-7 to Light Point	1	x	10	3.00			30.00	
	Switch Board-8 to Light Point	1	x	5	3.00			15.00	
	<b>Second Floor</b>								
	DB to Switch Board Line	1	x	8	3.00			24.00	
	Switch Board-1 to Light Point	1	x	5	3.00			15.00	

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
	Switch Board-2 to Light Point	1	x	5	3.00			15.00	
	Switch Board-3 to Light Point	1	x	10	3.00			30.00	
	Switch Board-4 to Light Point	1	x	10	3.00			30.00	
	Switch Board-5 to Light Point	1	x	4	3.00			12.00	
	Switch Board-6 to Light Point	1	x	10	3.00			30.00	
	Switch Board-7 to Light Point	1	x	10	3.00			30.00	
	Switch Board-8 to Light Point	1	x	5	3.00			15.00	
					<b>Total Quantity</b>			<b>603.00</b>	<b>Meter</b>
245	Supplying heavy gauge PVC Conduit Pipe .... dia ..... mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering upto the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary <b>32 mm dia 2.5 mm thick</b>								
	<b>In Ceiling</b>								
	<b>Ground floor</b>								
	DB to Switch Board Line	1	x	1	93.54			93.54	
	Switch Board-1 to Light Point	1	x	1	19.33			19.33	
	Switch Board-2 to Light Point	1	x	1	18.29			18.29	
	Switch Board-3 to Light Point	1	x	1	78.64			78.64	
	Switch Board-4 to Light Point	1	x	1	78.64			78.64	
	Switch Board-5 to Light Point	1	x	1	18.57			18.57	
	Switch Board-6 to Light Point	1	x	1	78.64			78.64	
	Switch Board-7 to Light Point	1	x	1	78.64			78.64	
	Switch Board-8 to Light Point	1	x	1	34.70			34.70	
	<b>First floor</b>								
	DB to Switch Board Line	1	x	1	93.54			93.54	
	Switch Board-1 to Light Point	1	x	1	19.33			19.33	
	Switch Board-2 to Light Point	1	x	1	18.29			18.29	
	Switch Board-3 to Light Point	1	x	1	78.64			78.64	
	Switch Board-4 to Light Point	1	x	1	78.64			78.64	
	Switch Board-5 to Light Point	1	x	1	18.57			18.57	
	Switch Board-6 to Light Point	1	x	1	78.64			78.64	
	Switch Board-7 to Light Point	1	x	1	78.64			78.64	
	Switch Board-8 to Light Point	1	x	1	34.70			34.70	
	<b>Second floor</b>								
	DB to Switch Board Line	1	x	1	93.54			93.54	
	Switch Board-1 to Light Point	1	x	1	19.33			19.33	
	Switch Board-2 to Light Point	1	x	1	18.29			18.29	
	Switch Board-3 to Light Point	1	x	1	78.64			78.64	
	Switch Board-4 to Light Point	1	x	1	78.64			78.64	
	Switch Board-5 to Light Point	1	x	1	18.57			18.57	
	Switch Board-6 to Light Point	1	x	1	78.64			78.64	
	Switch Board-7 to Light Point	1	x	1	78.64			78.64	
	Switch Board-8 to Light Point	1	x	1	34.70			34.70	
					<b>Total Quantity</b>			<b>1496.97</b>	<b>Meter</b>
246	Supplying heavy gauge PVC Conduit Pipe .... dia ..... mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering upto the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary <b>40 mm dia 2.5 mm thick</b>								
	Wherever Necessary	1	x	1	50.00			50.00	
					<b>Total Quantity</b>			<b>50.00</b>	<b>Meter</b>
247	Supplying heavy gauge PVC Conduit Pipe .... dia ..... mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering upto the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary <b>25 mm dia 2 mm thick</b>								
	Wherever Necessary	1	x	1	25.00			25.00	
					<b>Total Quantity</b>			<b>25.00</b>	<b>Meter</b>
248	Supplying heavy gauge PVC Conduit Pipe .... dia ..... mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering upto the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary <b>32 mm dia 2.5 mm thick</b>								
	Wherever Necessary	1	x	1	25.00			25.00	
					<b>Total Quantity</b>			<b>25.00</b>	<b>Meter</b>

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
249		Supplying heavy gauge PVC Conduit Pipe .... dia ..... mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering upto the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary <b>40 mm dia 2.5 mm thick</b>							
		Wherever Necessary	1	x	1	25.00			25.00
						Total Quantity			25.00 Meter
250		Supplying and fixing PVC/metal conduit Deep junction box <b>25 mm deep junction box</b>							
		For Light Point	3	x	59				177.00
						Total Quantity			177.00 Nos
251		Supplying and fixing PVC/metal conduit Deep junction box <b>32 mm deep junction box</b>							
		Wherever Necessary	3	x	5				15.00
						Total Quantity			15.00 Nos
252		Extra for Groove cutting in brick wall/CC floor to the suitable depth for concealing of Conduit/GI pipe and plastering, finishing upto wall surface complete <b>upto 50 mm conduit in brick wall</b>							
		For DB Line	1	x	1	10.00			10.00
						Total Quantity			10.00 Meter
253		Extra for Groove cutting in brick wall/CC floor to the suitable depth for concealing of Conduit/GI pipe and plastering, finishing upto wall surface complete <b>upto 50 mm conduit CC Floor</b>							
		Wherever Necessary	1	x	1	5.00			5.00
						Total Quantity			5.00 Meter
		<b>WIRES &amp; CABLES</b>							
		<b>Point wiring using Copper wire without switch</b>							
254		Supplying and wiring adopting loop system in existing PVC Conduit /casing capping casing capping using 2x1.5mm2 (Phase & Neutral) & 1x1.0 mm2 (Earth wire) FRLS multi strand PVC insulated copper wire (confirming to IS-694: and latest amendments) without control switch shall be fixed on the existing plastic sheet/ gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet <b>Short point upto 3m from tapping point to out let via switch box</b>							
		Light Point	3	x	3				9.00
						Total Quantity			9.00 Point
255		Supplying and wiring adopting loop system in existing PVC Conduit /casing capping casing capping using 2x1.5mm2 (Phase & Neutral) & 1x1.0 mm2 (Earth wire) FRLS multi strand PVC insulated copper wire (confirming to IS-694: and latest amendments) without control switch shall be fixed on the existing plastic sheet/ gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet <b>Medium point above 3m upto 6m from tapping point to out let via switch box</b>							
		Light Point	3	x	5				15.00
						Total Quantity			15.00 Point
256		Supplying and wiring adopting loop system in existing PVC Conduit /casing capping casing capping using 2x1.5mm2 (Phase & Neutral) & 1x1.0 mm2 (Earth wire) FRLS multi strand PVC insulated copper wire (confirming to IS-694: and latest amendments) without control switch shall be fixed on the existing plastic sheet/ gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet <b>Long point above 6m upto 10m from tapping point to out let via switch box</b>							
		Light Point	3	x	51				153.00
						Total Quantity			153.00 Point
257		Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified IS-694:2010 <b>1 mm2</b>							
		Wherever Necessary	1	x	1	50.00			50.00
						Total Quantity			50.00 Meter
258		Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified IS-694:2010 <b>1.5 mm2</b>							
		<b>Ground Floor</b>							
		DB to Swith Board - For Earthing							
		Ceiling	1	x	1	93.54			93.54
		Wall	1	x	8	3.00			24.00
		DB to Swith Board- Plug Point							
		Ceiling	1	x	1	93.54			93.54
		Wall	1	x	8	3.00			24.00
		<b>First Floor</b>							
		DB to Swith Board - For Earthing							
		Ceiling	1	x	1	93.54			93.54

**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
	Wall	1	x	8	3.00			24.00	
	DB to Swith Board- Plug Point								
	Ceiling	1	x	1	93.54			93.54	
	Wall	1	x	8	3.00			24.00	
	<b>Second Floor</b>								
	DB to Swith Board - For Earthing								
	Ceiling	1	x	1	93.54			93.54	
	Wall	1	x	8	3.00			24.00	
	DB to Swith Board- Plug Point								
	Ceiling	1	x	1	93.54			93.54	
	Wall	1	x	8	3.00			24.00	
					<b>Total Quantity</b>			<b>705.24</b>	<b>Meter</b>
259	Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified IS-694:2010 <b>2.5 mm<sup>2</sup></b>								
	<b>Ground Floor</b>								
	DB to Swith Board								
	Ceiling	2	x	1	93.54			187.08	
	Wall	2	x	8	3.00			48.00	
	<b>Fisrt Floor</b>								
	DB to Swith Board								
	Ceiling	2	x	1	93.54			187.08	
	Wall	2	x	8	3.00			48.00	
	<b>Second Floor</b>								
	DB to Swith Board								
	Ceiling	2	x	1	93.54			187.08	
	Wall	2	x	8	3.00			48.00	
					<b>Total Quantity</b>			<b>705.24</b>	<b>Meter</b>
260	Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified IS-694:2010 <b>4 mm<sup>2</sup></b>								
	<b>Ground Floor</b>								
	DB to Swith Board- Plug Point								
	Ceiling	2	x	1	93.54			187.08	
	Wall	2	x	8	3.00			48.00	
	<b>Fisrt Floor</b>								
	DB to Swith Board- Plug Point								
	Ceiling	2	x	1	93.54			187.08	
	Wall	2	x	8	3.00			48.00	
	<b>Second Floor</b>								
	DB to Swith Board- Plug Point								
	Ceiling	2	x	1	93.54			187.08	
	Wall	2	x	8	3.00			48.00	
					<b>Total Quantity</b>			<b>705.24</b>	<b>Meter</b>
	<b>SWITCHES, SOCKETS &amp; ACCESSORIES</b>								
261	Supplying and fixing surface/flush mounting unbreakable PVC modular box suitable for mounting modular switch plates with due groove cutting in Brick/C.C wall, including necessary rawl plugs, Machine/NF screws etc., complete <b>10-12 Way</b>								
	Ground Floor	2	x	8				16.00	
	First Floor	2	x	8				16.00	
	Second Floor	2	x	8				16.00	
					<b>Total Quantity</b>			<b>48.00</b>	<b>Nos</b>
262	Supplying and fixing surface/flush mounting unbreakable PVC modular box suitable for mounting modular switch plates with due groove cutting in Brick/C.C wall, including necessary rawl plugs, Machine/NF screws etc., complete <b>16-18 Way</b>								
	Ground Floor	1	x	1				1.00	
	First Floor	1	x	1				1.00	
	Second Floor	1	x	1				1.00	
					<b>Total Quantity</b>			<b>3.00</b>	<b>Nos</b>
263	Supplying and fixing superior quality modular switch mounting polycarbonate plate with necessary supporting back plate with required nos. of machine screws, bolts nuts etc., complete on the existing metal/PVC box <b>10-12 Module</b>								
	Ground Floor	2	x	8				16.00	
	First Floor	2	x	8				16.00	
	Second Floor	2	x	8				16.00	
					<b>Total Quantity</b>			<b>48.00</b>	<b>Nos</b>
264	Supplying and fixing superior quality modular switch mounting polycarbonate plate with necessary supporting back plate with required nos. of machine screws, bolts nuts etc., complete on the existing metal/PVC box <b>16-18 Module</b>								
	Ground Floor	1	x	1				1.00	

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.	Description	Nos			L	B	D	Quantity	Unit
	First Floor	1	x	1				1.00	
	Second Floor	1	x	1				1.00	
					Total Quantity			3.00	Nos
265	Supplying and fixing of modular switch & connected accessories on existing modular switch plate as per IS 3854 and IS 1293 <b>6A One Way Switch</b>								
	<b>Ground Floor</b>								
	Light Point Switch	1	x	59				59.00	
	6A Socket Switch	3	x	8				24.00	
	<b>First Floor</b>								
	Light Point Switch	1	x	59				59.00	
	6A Socket Switch	3	x	8				24.00	
	<b>Second Floor</b>								
	Light Point Switch	1	x	59				59.00	
	6A Socket Switch	3	x	8				24.00	
					Total Quantity			249.00	Nos
266	Supplying and fixing of modular switch & connected accessories on existing modular switch plate as per IS 3854 and IS 1293 <b>6A Two Way Switch</b>								
	Light Point	1	x	1				1.00	
					Total Quantity			1.00	Nos
267	Supplying and fixing of modular switch & connected accessories on existing modular switch plate as per IS 3854 and IS 1293 <b>6A Three Way socket</b>								
	<b>Ground Floor</b>	3	x	8				24.00	
	<b>First Floor</b>	3	x	8				24.00	
	<b>Second Floor</b>	3	x	8				24.00	
					Total Quantity			72.00	Nos
268	Supplying and fixing of modular switch & connected accessories on existing modular switch plate as per IS 3854 and IS 1293 <b>16A One Way Switch</b>								
	<b>Ground Floor</b>	1	x	8				8.00	
	<b>First Floor</b>	1	x	8				8.00	
	<b>Second Floor</b>	1	x	8				8.00	
					Total Quantity			24.00	Nos
269	Supplying and fixing of modular switch & connected accessories on existing modular switch plate as per IS 3854 and IS 1293 <b>6/16A Universal Socket</b>								
	<b>Ground Floor</b>	1	x	8				8.00	
	<b>First Floor</b>	1	x	8				8.00	
	<b>Second Floor</b>	1	x	8				8.00	
					Total Quantity			24.00	Nos
270	Supplying and fixing of metal clad industrial plugs and sockets <b>2pole+earth 250V PLUG 10A</b>	1	x	12				12.00	Nos
271	Supplying and fixing of metal clad industrial plugs and sockets <b>2pole+earth 250V PLUG 20A</b>	1	x	12				12.00	Nos
272	Supplying and fixing of metal clad industrial plugs and sockets <b>3pole+earth 440V PLUG 20A</b>	1	x	12				12.00	Nos
273	Supplying and fixing of metal clad industrial plugs and sockets <b>3pole+earth 440V PLUG 30A</b>	1	x	12				12.00	Nos
274	Supplying and fixing of metal clad industrial plugs and sockets <b>2pole+earth 250V SOCKET 10A</b>	1	x	12				12.00	Nos
275	Supplying and fixing of metal clad industrial plugs and sockets <b>2pole+earth 250V SOCKET 20A</b>	1	x	12				12.00	Nos
276	Supplying and fixing of metal clad industrial plugs and sockets <b>3pole+earth 440V SOCKET 20A</b>	1	x	12				12.00	Nos
277	Supplying and fixing of metal clad industrial plugs and sockets <b>3pole+earth 440V SOCKET 30A</b>	1	x	12				12.00	Nos
	<b>POLES &amp; HIGH MAST</b>								
278	Fabricating, supplying and erection of ... ms long hot dip Galvanized Octagonal hot dip Pole with BSEN 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangements, including suitable boards, Bakelite sheet and MCBs as per IS specifications suitable to withstand the wind speed of 47 m/s for .....m Pole in single section and single joint welded as per IS 9595/IS10178AWS having dimensions bottom .... mm , top.... mm with 3 mm thick, suitable base plate and 4Nos of .... long J bolts along with template and the Pole shall be hot dip galvanized in single dipping with not less than 65micron as per ASTM-A123 and 153 etc., (excluding foundation) as per drawing appended <b>8 m - Top 70 mm and Bottom 135 mm dia</b>								
	Street Light	1	x	9				9.00	
					Total Quantity			9.00	Nos
279	Supplying, and fixing of Hot dip Galvanized M.S.Bracketsuitable for out door luminaries and mounted on Octagonal pole using necessary bolts, nuts etc., complete <b>Single Arm Bracket with 1500 mm Standard 40/50 mm dia</b>								
	Street Light	1	x	9				9.00	
					Total Quantity			9.00	Nos
	<b>LUMINAIRS / LIGHT FIXTURES &amp; ACCESSORIES</b>								
	<b>LED Street light</b>								

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT											
DETAIL ESTIMATE - COLD STORAGE											
SI No.		Description	Nos			L	B	D	Quantity	Unit	
280		Supply of LED Streetlight luminaire with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate material, delivering superior light output Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, maximum light intensity should be between 60 degrees to 70 degrees. CCT > 5500K, IP66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/ Overload, short circuit/ miss-wiring protection. Compatible for pole mounting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB. Top access street light with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED Light fixture with .....W System Power consumption. LED Efficiency>130lm/w, nominal CRI >75. Luminaire manufacturer should have in-house facility accredited by NABL/CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008. Housing with supplier word mark /name shall be Engraved / Embossing on the die cast housing/ Body part. Warranty of 2 Years against any manufacturing defect working under standard electrical conditions as									
		Street Light	1	x	7				7.00		
						Total Quantity			7.00	Nos	
281		Supplying and Fixing of 80W Industrial Range Light with following specifications. System lumen output - 9400 lm, System efficacy of 110 lm/W, Housing : Pressure Die Cast Aluminium with PC lens as Optics with toughened glass, Rated system life of 50,000BH, CCT - 5700K and CRI>70, Protection: IP66, IK 07 &THD<10% , PF>0.95, Opr Temp : - 10 °C to +45 °C, Opr Voltage range: 140 V - 270 V etc., complete									
		a) LUMINAIRE MAKE : Phillips / GE-Venture / Crompton / 80W Light	3	x	49				147.00		
						Total Quantity			147.00	Nos	
282		Supplying & fixing of Surface mounting type retrofit type - LED tube ..... W comprising of LED linear source with CCT 6500 degree K, CRI> 70%. efficacy >80 lumen per W, life> 25000 burning hours and Compliance to IS 10322/IEC 60598, LM 79 & LM 80. The LED are driven by HF electronic driver integrated in the system, with PF > 0.95, power loss should < 5% of lamp Wage., short circuit & open circuit protection to be integrated in the circuit, THD less than 20%, Life as per LM 79. The operating input voltage should be between 130 to 275 V. BIS Approved and Tested by NABL/CPRI accredited laboratory with 2 years Warranty against any manufacturing defect working under standard electrical condition <b>18W-20W (T8)</b>									
		Light	3	x	10				30.00		
						Total Quantity			30.00	Nos	
		<b>FIXING CHARGES</b>									
283		Fixing all types and all capacities of fluorescent /false ceiling / spot light / CFL / LED fittings indoor on the wall/ ceiling / rafters / girders using 23/0.0076" twin twisted PVC insulated wires, required Nos of round blocks and c/a <b>On wall/ ceiling / Rafter / Girders</b>									
		80W Light	3	x	49				147.00		
						Total Quantity			147.00	Nos	
TECHNICIAN SHED											
DETAILED ESTIMATE - ELECTRICAL											
SI No		Description	Nos			L	B	D	Quantity	Unit	
		<b>PVC CONDUITS &amp; ACCESSORIES</b>									
		<b>Concealed Conduit System</b>									
284		Supplying heavy gauge PVC conduit pipe ..... mm dia.....mm thick conforming to IS 2509 with suitable size bends, metal/PVC Junction boxes, adhesive paste etc., and running before concreting the slab. The conduit should be tied to the reinforcement rods by using binding wires and unused ways of junction boxes and pipe ends should be covered using PVC end enclosures, run with 18SWG GI fish wire wherever necessary <b>25 mm dia 2 mm thick</b>									
		DB to Switch Board Line	1	x	7	3.00			21.00		
		Switch Board-1 to Light Point	1	x	1	3.00			3.00		
		Switch Board-2 to Light Point	1	x	3	3.00			9.00		
		Switch Board-3 to Light Point	1	x	3	3.00			9.00		
		Switch Board-4 to Light Point	1	x	4	3.00			12.00		
		Switch Board-5 to Light Point	1	x	5	3.00			15.00		
		Switch Board-6 to Light Point	1	x	4	3.00			12.00		
		Switch Board-7 to Light Point	1	x	4	3.00			12.00		
						Total Quantity			93.00	Meter	



**2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT**

**DETAIL ESTIMATE - COLD STORAGE**

SI No.	Description	Nos			L	B	D	Quantity	Unit
285	Supplying heavy gauge PVC conduit pipe ..... mm dia.....mm thick confirming to IS 2509 with suitable size bends, metal/PVC junction boxes, adhesive paste etc., and running before concreting the slab. The conduit should be tied to the reinforcement rods by using binding wires and unused ways of junction boxes and pipe ends should be covered using PVC end enclosures, run with 18SWG GI fish wire wherever necessary <b>32 mm dia 2.5 mm thick</b>								
	Switch Board to Light Point	1	x	1	32.69			32.69	
	Switch Board-1 to Light Point	1	x	1	0.93			0.93	
	Switch Board-2 to Light Point	1	x	1	13.06			13.06	
	Switch Board-3 to Light Point	1	x	1	9.60			9.60	
	Switch Board-4 to Light Point	1	x	1	5.36			5.36	
	Switch Board-5 to Light Point	1	x	1	16.42			16.42	
	Switch Board-6 to Light Point	1	x	1	12.31			12.31	
	Switch Board-7 to Light Point	1	x	1	11.49			11.49	
					<b>Total Quantity</b>			<b>101.86</b>	<b>Meter</b>
286	Supplying heavy gauge PVC Conduit Pipe .... dia ..... mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering upto the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary <b>25 mm dia 2 mm thick</b>								
	Wherever Necessary	1	x	1	5.00			5.00	
					<b>Total Quantity</b>			<b>5.00</b>	<b>Meter</b>
287	Supplying heavy gauge PVC Conduit Pipe .... dia ..... mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering upto the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary <b>32 mm dia 2.5 mm thick</b>								
	Switch Board to Light Point	1	x	2	4.00			8.00	
					<b>Total Quantity</b>			<b>8.00</b>	<b>Meter</b>
288	Supplying and fixing PVC/metal conduit Deep junction box <b>25 mm deep junction box</b>								
	For Light Point	1	x	13				13.00	
					<b>Total Quantity</b>			<b>13.00</b>	<b>Nos</b>
289	Supplying and fixing PVC/metal conduit Deep junction box <b>32 mm deep junction box</b>								
	Wherever Necessary	1	x	4				4.00	
					<b>Total Quantity</b>			<b>4.00</b>	<b>Nos</b>
290	Extra for Groove cutting in brick wall/CC floor to the suitable depth for concealing of Conduit/GI pipe and plastering, finishing upto wall surface complete <b>upto 50 mm conduit in brick wall</b>								
	DB to Switch Board Line	1	x	7	3.00			21.00	
	Switch Board-1 to Light Point	1	x	1	3.00			3.00	
	Switch Board-2 to Light Point	1	x	3	3.00			9.00	
	Switch Board-3 to Light Point	1	x	3	3.00			9.00	
	Switch Board-4 to Light Point	1	x	4	3.00			12.00	
	Switch Board-5 to Light Point	1	x	5	3.00			15.00	
	Switch Board-6 to Light Point	1	x	4	3.00			12.00	
	Switch Board-7 to Light Point	1	x	4	3.00			12.00	
					<b>Total Quantity</b>			<b>93.00</b>	<b>Meter</b>
291	Extra for Groove cutting in brick wall/CC floor to the suitable depth for concealing of Conduit/GI pipe and plastering, finishing upto wall surface complete <b>upto 50 mm conduit CC floor</b>								
	Wherever Necessary	1	x	1	5.00			5.00	
					<b>Total Quantity</b>			<b>5.00</b>	<b>Meter</b>
	<b>WIRES &amp; CABLES</b>								
	<b>Point wiring using Copper wire without switch</b>								
292	Supplying and wiring adopting loop system in existing PVC Conduit /casing capping casing capping using 2x1.5mm2 (Phase & Neutral) & 1x1.0 mm2 (Earth wire) FRLS multi strand PVC insulated copper wire (confirming to IS-694: and latest amendments) without control switch shall be fixed on the existing plastic sheet/ gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet <b>Short point upto 3m from tapping point to out let via switch box</b>								
	Light Point & Fan Point	1	x	3				3.00	
					<b>Total Quantity</b>			<b>3.00</b>	<b>Point</b>

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
293		Supplying and wiring adopting loop system in existing PVC Conduit /casing capping using 2x1.5mm <sup>2</sup> (Phase & Neutral) & 1x1.0 mm <sup>2</sup> (Earth wire) FRLS multi strand PVC insulated copper wire (confirming to IS-694: and latest amendments) without control switch shall be fixed on the existing plastic sheet/ gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet <b>Medium point above 3m upto 6m from tapping point to out let via switch box</b>							
		Light Point & Fan Point	1	x	3				3.00
						Total Quantity			3.00 Point
294		Supplying and wiring adopting loop system in existing PVC Conduit /casing capping using 2x1.5mm <sup>2</sup> (Phase & Neutral) & 1x1.0 mm <sup>2</sup> (Earth wire) FRLS multi strand PVC insulated copper wire (confirming to IS-694: and latest amendments) without control switch shall be fixed on the existing plastic sheet/ gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet <b>Long point above 6m upto 10m from tapping point to out let via switch box</b>							
		Light Point & Fan Point	1	x	16				16.00
						Total Quantity			16.00 Point
295		Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified IS-694:2010 <b>1 mm<sup>2</sup></b>							
		Wherever Necessary	1	x	1	5.00			5.00
						Total Quantity			5.00 Meter
296		Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified IS-694:2010 <b>1.5 mm<sup>2</sup></b>							
		DB to Swith Board - For Earthing							
		Ceiling	1	x	1	32.69			32.69
		Wall	1	x	7	3.00			21.00
		DB to Swith Board- Plug Point							
		Ceiling	1	x	1	32.69			32.69
		Wall	1	x	7	3.00			21.00
						Total Quantity			107.38 Meter
297		Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified IS-694:2010 <b>2.5 mm<sup>2</sup></b>							
		DB to Swith Board							
		Ceiling	2	x	1	32.69			65.38
		Wall	2	x	7	3.00			42.00
						Total Quantity			107.38 Meter
298		Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified IS-694:2010 <b>4 mm<sup>2</sup></b>							
		DB to Swith Board- Plug Point							
		Ceiling	2	x	1	32.69			65.38
		Wall	2	x	7	3.00			42.00
						Total Quantity			107.38 Meter
		<b>SWITCHES, SOCKETS &amp; ACCESSORIES</b>							
299		Supplying and fixing surface/flush mounting unbreakable PVC modular box suitable for mounting modular switch plates with due groove cutting in Brick/C.C wall, including necessary rawl plugs, Machine/NF screws etc. complete <b>10-12 Way</b>							
a		Swith Board	2	x	7				14.00
						Total Quantity			14.00 Nos
300		Supplying and fixing superior quality modular switch mounting polycarbonate plate with necessary supporting back plate with required nos. of machine screws, bolts nuts etc., complete on the existing metal/PVC box <b>10-12 Module</b>							
a		Swith Board	1	x	1				1.00
						Total Quantity			1.00 Nos
301		Supplying and fixing of modular switch & connected accessories on existing modular switch plate as per IS 3854 and IS 1293 <b>6A One Way Switch</b>							
		Light Point Switch	1	x	13				13.00
		Fan Point Switch	1	x	6				6.00
		6A Socket Switch	3	x	5				15.00
						Total Quantity			34.00 Nos
302		Supplying and fixing of modular switch & connected accessories on existing modular switch plate as per IS 3854 and IS 1293 <b>6A Two Way Switch</b>							
		Light Point	1	x	1				1.00
						Total Quantity			1.00 Nos

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
303		Supplying and fixing of modular switch & connected accessories on existing modular switch plate as per IS 3854 and IS 1293 <b>6A Three Way socket</b>							
		Socket	3	x	5				15.00
						Total Quantity			15.00 Nos
304		Supplying and fixing of modular switch & connected accessories on existing modular switch plate as per IS 3854 and IS 1293 <b>16A One Way Switch</b>							
		Switch	1	x	5				5.00
						Total Quantity			5.00 Nos
305		Supplying and fixing of modular switch & connected accessories on existing modular switch plate as per IS 3854 and IS 1293 <b>6/16A Universal Socket</b>							
		Socket	1	x	5				5.00
						Total Quantity			5.00 Nos
306		Supplying and fixing of metal clad industrial plugs and sockets <b>2pole+earth 250V PLUG 10A</b>	1	x	2				2.00
307		Supplying and fixing of metal clad industrial plugs and sockets <b>2pole+earth 250V PLUG 20A</b>	1	x	2				2.00
308		Supplying and fixing of metal clad industrial plugs and sockets <b>3pole+earth 440V PLUG 20A</b>	1	x	2				2.00
309		Supplying and fixing of metal clad industrial plugs and sockets <b>3pole+earth 440V PLUG 30A</b>	1	x	2				2.00
310		Supplying and fixing of metal clad industrial plugs and sockets <b>2pole+earth 250V SOCKET 10A</b>	1	x	2				2.00
311		Supplying and fixing of metal clad industrial plugs and sockets <b>2pole+earth 250V SOCKET 20A</b>	1	x	2				2.00
312		Supplying and fixing of metal clad industrial plugs and sockets <b>3pole+earth 440V SOCKET 20A</b>	1	x	2				2.00
313		Supplying and fixing of metal clad industrial plugs and sockets <b>3pole+earth 440V SOCKET 30A</b>	1	x	2				2.00
		<b>POLES &amp; HIGH MAST</b>							
314		Fabricating, supplying and erection of ... ms long hot dip Galvanized Octagonal hot dip Pole with BSEN 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangements, including suitable boards, Bakelite sheet and MCBs as per IS specifications suitable to withstand the wind speed of 47 m/s for .....m Pole in single section and single joint welded as per IS 9595/IS10178AWS having dimensions bottom .... mm , top.... mm with 3 mm thick, suitable base plate and 4Nos of .... long J bolts along with template and the Pole shall be hot dip galvanized in single dipping with not less than 65micron as per ASTM-A123 and 153 etc., (excluding foundation) as per drawing appended <b>8 m - Top 70 mm and Bottom 135 mm dia</b>							
		Street Light	1	x	1				1.00
						Total Quantity			1.00 Nos
315		Supplying, and fixing of Hot dip Galvanized M.S.Bracketsuitable for out door luminaries and mounted on Octagonal pole using necessary bolts, nuts etc., complete <b>Single Arm Bracket with 1500 mm Standard 40/50 mm dia</b>							
		Street Light	1	x	1				1.00
						Total Quantity			1.00 Nos
		<b>FANS &amp; AIR CONDITIONERS</b>							
316		Supplying of Ceiling Fan with Capacitor rating As per guideline of BEE 5 star rating and IS:374/79 and also comply with IS: 1709/1984 with latest amendment, Rated voltage 220 V/50 Hz, Rated power input 48 W +/- 10 %, Rated current As per IS:374/79, Rated power factor 0.9 lagging(min), Rated speed 350 +/- 10% RPM, Rated air delivery 210 +/- 10% Cubic Meter Minimum, Rated service value 4.2 CMM / W, Three Blades of blade leaf 1.05 mm thick Aluminium Alloy sheet, Class B motor insulation, Bearing Two ball bearings, Top 6202, Bottom 6201, as per IS specification, Motor winding. Temp rise Shall not exceed 75 deg C over and ambient of 40 0C by resistance method at 245 V, Insulation resistance Shall not be less than Two Mega Ohms (2M Ohms), Leakage current Should not exceed 210 Micro Amp, Power input, W& current, Air Delivery & Fan Speed as per IS:374/1979 with latest amendment, 2 year manufacturer Warranty <b>48" Sweep 5 Star (1200 mm)</b>							
		Ceiling Fan	1	x	4				4.00
						Total Quantity			4.00 Nos
317		Supplying wall mounting fan suitable to operate at single phase 230v AC. supply <b>400 mm Sweep</b>							
		Ceiling Fan	1	x	3				3.00
						Total Quantity			3.00 Nos
318		Supplying of 1440rpm heavy duty exhaust fan with bracket blades suitable to operate on 230V 50Hz, AC Supply complete <b>12" Sweep (300 mm)</b>							
		Exhaust Fan	1	x	2				2.00
						Total Quantity			2.00 Nos
		<b>LUMINAIRS / LIGHT FIXTURES &amp; ACCESSORIES</b>							
		<b>LED Street light</b>							

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT											
DETAIL ESTIMATE - COLD STORAGE											
SI No.		Description	Nos			L	B	D	Quantity	Unit	
319		Supply of LED Streetlight luminaire with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate material, delivering superior light output Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, maximum light intensity should be between 60 degrees to 70 degrees. CCT > 5500K, IP66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/ Overload, short circuit/ miss-wiring protection. Compatible for pole mounting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB. Top access street light with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED Light fixture with .....W System Power consumption. LED Efficiency>130lm/w, nominal CRI >75. Luminaire manufacturer should have in-house facility accredited by NABL/CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008. Housing with supplier word mark /name shall be Engraved / Embossing on the die cast housing/ Body part. Warranty of 2 Years against any manufacturing defect working under standard electrical conditions as									
		Street Light	1	x	1				1.00		
						Total Quantity			1.00	Nos	
320		Supplying & fixing of Surface mounting type retrofit type - LED tube ..... W comprising of LED linear source with CCT 6500 degree K, CRI> 70%. efficacy >80 lumen per W, life> 25000 burning hours and Compliance to IS 10322/IEC 60598, LM 79 & LM 80. The LED are driven by HF electronic driver integrated in the system, with PF > 0.95, power loss should < 5% of lamp Wage., short circuit & open circuit protection to be integrated in the circuit, THD less than 20%, Life as per LM 79. The operating input voltage should be between 130 to 275 V. BIS Approved and Tested by NABL/CPRI accredited laboratory with 2 years Warranty against any manufacturing defect working under standard electrical condition <b>18W-20W (T8)</b>									
		20W Light	1	x	13				13.00		
						Total Quantity			13.00	Nos	
		<b>FIXING CHARGES</b>									
321		Fixing all types and all capacities of fluorescent /false ceiling / spot light / CFL /LED fittings indoor on the wall/ ceiling / rafters / girders using 23/0.0076" twin twisted PVC insulated wires, required Nos of round blocks and c/a <b>On wall/ ceiling / Rafter / Girders</b>									
		20W Light	1	x	13				13.00		
						Total Quantity			13.00	Nos	
DETAILED ESTIMATE - OUTER ELECTRICAL WORKS											
SI No.		Description	Nos			L	B	D	Quantity	Unit	
322		Supply, Transportation unloading, installation, testing and commissioning of <b>Main MV Panel</b> comprising of the followings and including all other accessories etc.,									
		<b>EB Incomer</b> : 1 No 250A 4 Pole Draw out type ACB with O/C, S/C, U/V and E/F Relays									
		<b>DG Incomer</b> : 1 No 250A 4 Pole Draw out type ACB with O/C, S/C, U/V and E/F Relays									
		<b>Busbar</b> : 250A TPN Aluminium Busbars 35KA per 1 Sec. All the neutral busbars shall have half the capacity of phase busbars									
		<b>Outgoing</b> :									
		3 Nos 100 A TPN MCCB with releases									
		2 No 160 A TPN MCCB with releases									
		1 No 200 A TPN MCCB with releases									
		1 No 250 A TPN MCCB with releases									
		<b>Interlocks</b> : Mechanical type iterlocking with 2 locks and 1 key provided in the both incomers only one supply source can be operated at a time									
		Wall mounting type fabricated with 16 SWG CRCA sheet enclosure. Door and partition 18 SWG CRCA Sheet. The Panel shall be complete with suitable interconnections and earthing etc. All doors should have proper locking/ sealing arrangements									
323		Supply, Transportation unloading, installation, testing and commissioning of <b>Refrigeration Panel-1</b> comprising of the followings and including all other accessories etc									
		<b>Incomer</b> : 1 No 250A TPN MCCB									
		<b>Outgoing</b> : 13 No 40A TPN MCCB									
		<b>Bus bars</b> : 250A TPN Aluminium Busbars 35KA per 1 Sec. All the neutral busbars shall have half the capacity of phase busbars									
		Wall mounting type fabricated with 16 SWG CRCA sheet enclosure, Door and partition 18 SWG CRCA sheet. The Panel shall be complete with iterconnections and earthing etc									
		All door should have proper locking/ sealing arnnements.									
324		Supply, Transportation unloading, installation, testing and commissioning of <b>Lift Panel</b> comprising of the followings and including all other accessories etc									
		<b>Incomer</b> : 1 No 160A TPN MCCB									

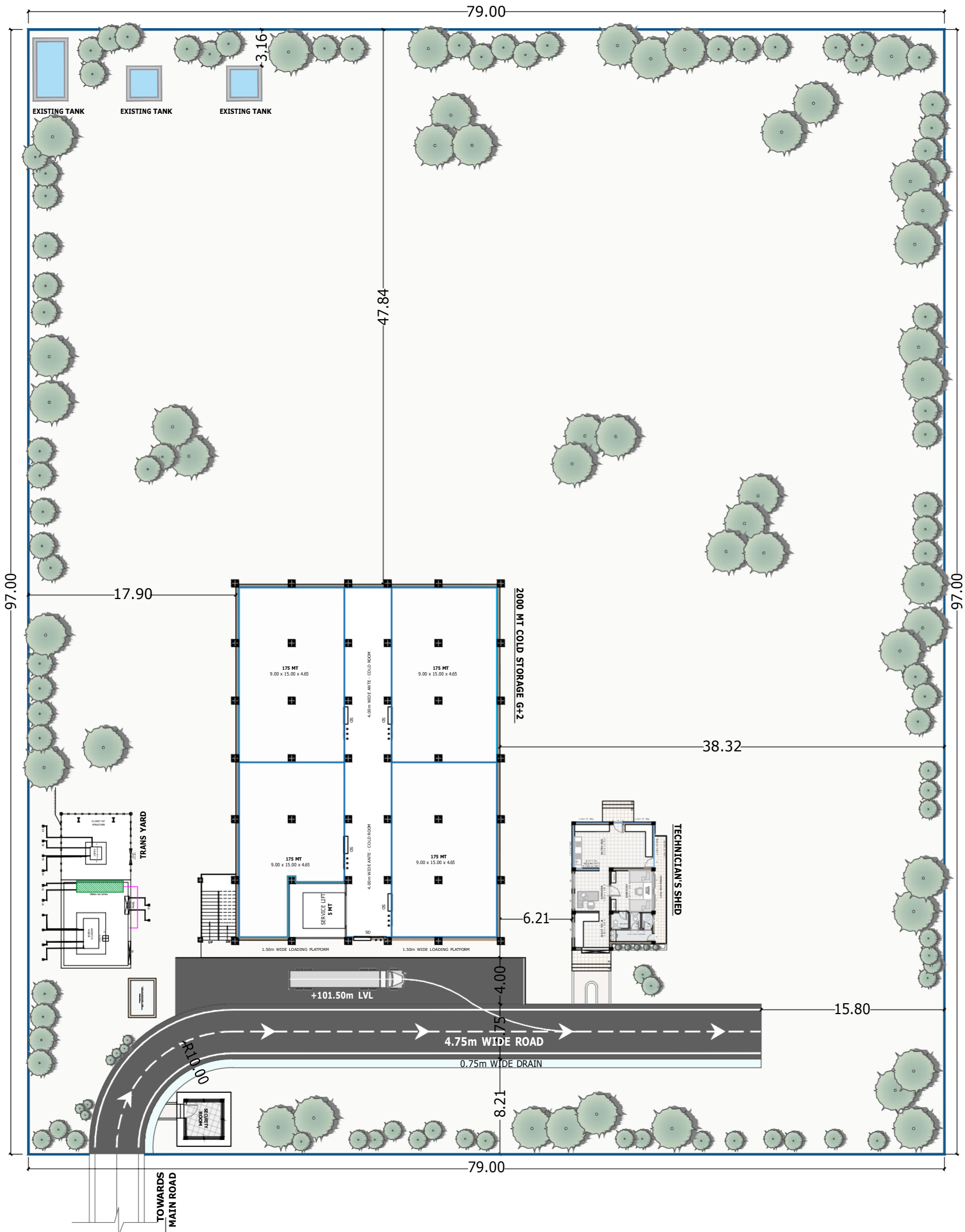
2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
		<b>Outgoing : 4 No 63A TPN MCCB</b>							
		<b>Bus bars:</b> 160A TPN Aluminium Busbars 35KA per 1 Sec. All the neutral busbars shall have half the capacity of phase busbars	1	x	1				1.00 Set
		Wall mounting type fabricated with 16 SWG CRCA sheet enclosure, Door and partition 18 SWG CRCA sheet. The Panel shall be complete with interconnections and earthing etc. All door should have proper locking/ sealing armements.							
325		Supply, Transportation unloading, installation, testing and commissioning of <b>Vertical DB 8 Way</b> comprising of the followings, and including all other accessories etc	1	x	1				1.00 Set
		<b>Incomer:</b> 1 No 63A TPN MCCB							
		<b>Outgoing:</b> 2 Nos 16/32A TPN MCB, 18 Nos 6/16A SP MCB							
		The Panel shall be complete with interconnections and earthing etc.							
326		<b>30 KVAR APFCR PANEL.</b> Supply, unloading, installation, testing and commissioning of floor mounting cubicle type APFC panel switch board fabricated out of 16 Swg CRCA and powder coated to Siemens gray shade. Make - Kabil Enterprises / CPRI Approved Panels / Equivalent approved by Engineer Incharge	1	x	1				1.00 Set
327		Supplying and Fixing of 63A MCCB Isolator in a Metal enclosure for isolation of Refrigerant unit near the HVAC Unit	1	x	12				12.00 Set
328		Earthing with G.I. earth pipe 4.5 meter long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal / coke and salt as required. (Electrical SOR: Item No:5.7)	1	x	8				8.00 Set
329		Earthing with G.I.earth plate 600 mm x 600 mm x 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc.but with charcoal / coke and salt as required. (Electrical SOR: Item No:5.4)	1	x	4				4.00 Set
330		Supplying and laying 25 mm x 5 mm copper strip at 0.50 meter below ground as strip earth electrode, including connection/ terminating with nut, bolt, spring, washer etc.as required. (Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced at 50mm) (Electrical DSR: Item No:5.9)	1	x	1	50.00			50.00 Meter
331		Providing and fixing 4.00 mm dia copper wire on surface or in recess for loop earthing as required (Electrical DSR: Item No:5.17)	1	x	1	200.00			200.00 Meter
332		Supply and transportation of following XLPE insulated, 1100V grade armoured aluminium cable as per specification conforming to IS:7098 (Part - I),/1554-I Makes: Torent / Universal / Unicab / Havells / KEI / Gloster / Polycab /RR Kabel <b>3.5 core 185Somm</b>	1	x	1	3.00			3.00
		DG Set to Main MV Panel	1	x	1	4.50			4.50
		Transformer to Main MV Panel							
									<b>Total Quantity</b> 7.50 Meter
333		Supply and transportation of following XLPE insulated, 1100V grade armoured aluminium cable as per specification conforming to IS:7098 (Part - I),/1554-I Makes: Torent / Universal / Unicab / Havells / KEI / Gloster / Polycab /RR Kabel <b>31/2 x 95 Somm</b>							
		Main MV Panel to Refrigeration Panel	1	x	1	89.00			89.00
									<b>Total Quantity</b> 89.00 Meter
334		Supply and transportation of following XLPE insulated, 1100V grade armoured aluminium cable as per specification conforming to IS:7098 (Part - I),/1554-I Makes: Torent / Universal / Unicab / Havells / KEI / Gloster / Polycab /RR Kabel <b>31/2 x 70 Somm</b>							
		Main MV Panel to Capacitor Panel	1	x	1	5.00			5.00
									<b>Total Quantity</b> 5.00 Meter
335		Supply and transportation of following XLPE insulated, 1100V grade armoured aluminium cable as per specification conforming to IS:7098 (Part - I),/1554-I Makes: Torent / Universal / Unicab / Havells / KEI / Gloster / Polycab /RR Kabel <b>31/2 x 35 Somm</b>							
		Main MV Panel to Lift Panel	1	x	1	2.50			2.50
									<b>Total Quantity</b> 2.50 Meter
336		Supply and transportation of following XLPE insulated, 1100V grade armoured aluminium cable as per specification conforming to IS:7098 (Part - I),/1554-I Makes: Torent / Universal / Unicab / Havells / KEI / Gloster / Polycab /RR Kabel <b>4 x 16 Somm</b>							
		Street Light	1	x	1	126.00			126.00
									<b>Total Quantity</b> 126.00 Meter
337		Supply and transportation of following XLPE insulated, 1100V grade armoured aluminium cable as per specification conforming to IS:7098 (Part - I),/1554-I Makes: Torent / Universal / Unicab / Havells / KEI / Gloster / Polycab /RR Kabel <b>4 x 10 Somm</b>							
		Main MV Panel to Lighting and Refrigerant Panel	1	x	1	470.00			470.00
									<b>Total Quantity</b> 470.00 Meter
338		Supply and transportation of following XLPE insulated, 1100V grade armoured aluminium cable as per specification conforming to IS:7098 (Part - I),/1554-I Makes: Torent / Universal / Unicab / Havells / KEI / Gloster / Polycab /RR Kabel <b>4 x 6 Somm</b>							
		Ground Floor Panel to DB	1	x	1	10.00			10.00
									<b>Total Quantity</b> 10.00 Meter
339		Supply and transportation of following XLPE insulated, 1100V grade armoured aluminium cable as per specification conforming to IS:7098 (Part - I),/1554-I Makes: Torent / Universal / Unicab / Havells / KEI / Gloster / Polycab /RR Kabel <b>2 x 10 Somm</b>							
		First Floor Panel to LSB	1	x	1	10.00			10.00
									<b>Total Quantity</b> 10.00 Meter

2000 MT COLD STORAGE(G+2) AT CHAVVENAHALLI HOTRICULTURE FARM, MALUR TALUK, KOLAR DISTRICT									
DETAIL ESTIMATE - COLD STORAGE									
SI No.		Description	Nos			L	B	D	Quantity Unit
340		Supply and transportation of following XLPE insulated, 1100V grade armoured aluminium cable as per specification conforming to IS:7098 (Part - I)/1554-1 Makes: Torent / Universal / Unicab / Havells / KEI / Gloster / Polycab /RR Kabel <b>2 x 6 Smm</b>							
		First Floor Panel to LSB	1	x	1	10.00			10.00
						Total Quantity			10.00 Meter
341		Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 kV grade of following size direct in ground including excavation , sand cushioning, protective covering and refilling the trench etc.as required - <b>Upto 35 sq.mm.</b> (Electrical SOR- Item No:7.1.1)	1	x	1	126.00			126.00 Meter
342		Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 kV grade of following size direct in ground including excavation , sand cushioning, protective covering and refilling the trench etc.as required - <b>above 35 sq.mm and upto 95 sq.mm</b> (Electrical SOR- Item No:7.1.2)	1	x	1	7.50			7.50 Meter
343		Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 kV grade of following size direct in ground including excavation , sand cushioning, protective covering and refilling the trench etc.as required - <b>above 95 sq.mm and upto 185 sq.mm</b> (Electrical SOR- Item No:7.1.3)	1	x	1	96.50			96.50 Meter
344		Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 kV grade of following size on wall surface as required - <b>upto 35 sq.mm</b> (clamped with 1mm thick saddle) (Electrical SOR- Item No:7.7.1)	1	x	1	470.00			470.00 Meter
345		Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 kV grade of following size on wall surface as required - <b>above 35 sq.mm and upto 95 sq.mm</b> (clamped with 25 x3mm MS flat clamp) (Electrical SOR- Item No:7.7.2)	1	x	1	5.00			5.00 Meter
346		Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 kV grade of following size on wall surface as required - <b>above 95 sq.mm and upto 185 sq.mm</b> (clamped with 25 / 40 x 3mm MS flat clamp) (Electrical SOR- Item No:7.7.3)	1	x	1	25.00			25.00 Meter
347		Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 kV grade of following size on cable tray as required - <b>upto 35 sq.mm</b> (clamped with 1 mm thick saddle) (Electrical SOR- Item No:7.8.1)	1	x	1	25.00			25.00 Meter
348		Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 kV grade of following size on cable tray as required - <b>above 35 sq.mm and upto 95 sq.mm</b> (clamped with 1 mm thick saddle) (Electrical SOR- Item No:7.8.2)	1	x	1	25.00			25.00 Meter
349		Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 kV grade of following size on cable tray as required - <b>above 95 sq.mm and upto 185 sq.mm</b> (clamped with 25 / 40 x 3mm MS flat clamp) (Electrical SOR- Item No:7.8.3)	1	x	1	25.00			25.00 Meter
350		<b>Supplying and making cable route marker</b> with cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20 mm nominal size) of size 60 cm x 60 cm at the bottom and 50 cm x 50 cm at the top with a thickness of 10 cm including inscription duly engraved as required. (Electrical SOR- Item No:7.9)	1	x	1	5.00			5.00 Meter
351		<b>Supplying and making end termination</b> with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required - <b>2 X 6 sq.mm (19mm)</b> (Electrical SOR- Item No:9.1.1)	2	x	2				4.00 Nos
352		<b>Supplying and making end termination</b> with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required - <b>2 X 10 sq.mm (19mm)</b> (Electrical SOR- Item No:9.1.2)	2	x	2				4.00 Nos
353		<b>Supplying and making end termination</b> with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required - <b>4 X10 sq.mm (25 mm)</b> (Electrical SOR- Item No:9.1.32)	2	x	2				4.00 Nos
354		<b>Supplying and making end termination</b> with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required - <b>4 X16 sq.mm (28 mm)</b> (Electrical SOR- Item No:9.1.33)	2	x	9				18.00 Nos
355		<b>Supplying and making end termination</b> with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required - <b>31/2 X25 sq.mm (28 mm)</b> (Electrical SOR- Item No:9.1.20)	2	x	2				4.00 Nos
356		<b>Supplying and making end termination</b> with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required - <b>31/2 X50 sq.mm (28 mm)</b> (Electrical SOR- Item No:9.1.21)	2	x	2				4.00 Nos
357		<b>Supplying and making end termination</b> with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required - <b>31/2 X120 sq.mm (45 mm)</b> (Electrical SOR- Item No:9.1.25)	2	x	2				4.00 Nos

**TABLE OF CONTENTS**

SHEET NO.	TITLE	DWG. NO.	PAGE. NO
<b>2000 MT COLD STORAGE AT CHAWENAHALLI HORTICULTURE FARM, MALUR TALUK, KOLAR DISTRICT , KARNATAKA</b>			
1	MASTER PLAN	SIPL/KA/KLR/ARC/01	01
2	<b>2000 MT</b> COLD STORAGE - GROUND FLOOR PLAN	SIPL/KA/KLR/ARC/02	02
3	<b>2000 MT</b> COLD STORAGE - FIRST & SECOND FLOOR PLAN	SIPL/KA/KLR/ARC/03	03
3A	<b>2000 MT</b> COLD STORAGE - SECTION	SIPL/KA/KLR/ARC/3A	3A
4	<b>2000 MT</b> COLD STORAGE - STAIRCASE AND LIFT DETAILS	SIPL/KA/KLR/ARC/04	04
5	TECHNICIAN SHED - FLOOR PLAN & TERRACE PLAN	SIPL/KA/KLR/ARC/05	05
5A	TECHNICIAN SHED - SECTION	SIPL/KA/KLR/ARC/5A	5A
6	SECURITY BLOCK	SIPL/KA/KLR/ARC/06	06
<b>STRUCTURAL DRAWINGS</b>			
7	GENERAL ARRANGEMENT OF FLOOR PLANS & COLUMN LAYOUT	SIPL-CS-22-474-ST-07	07
8	FOOTING LAYOUT	SIPL-CS-22-474-ST-08	08
9	TECHNICIAN SHED- GA OF FLOOR PLAN & COLUMN LAYOUT	SIPL-PDY-22-473-ST-09	09
10	TECHNICIAN SHED- FOOTING LAYOUT	SIPL-PDY-22-473-ST-10	10

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**ORIENTATION:**

**LEGEND :**

	ROAD
	LANDSCAPE
	PAVEMENT
	DRAIN

**SITE DETAILS:**

TOTAL AREA OF SITE (Acres)	1.89 Acres
TOTAL AREA OF SITE	7,663 Sq.m

**AREA DETAILS:**

TOTAL ROAD AREA	416 Sq.m
TOTAL ROAD LENGTH	61 R.m
LANDSCAPE AREA	55 R.m
PAVEMENT AREA	6,245 Sq.m
COLD STORAGE 2000 MT (G +2)	2,015 Sq.m
COLD STORAGE (GF)	655 Sq.m
COLD STORAGE (FF)	675 Sq.m
COLD STORAGE (SF)	675 Sq.m
TECHNICIAN SHED	78 Sq.m
SECURITY OFFICE	12 Sq.m
TRANSFORMER YARD	160 Kv
DG SET (01No)	160 Kva
UG SUMP	6,000 Litres

**FOR TENDER PURPOSE ONLY**

- NOTES:**
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  - THE LEVELS ARE MENTIONED ON THE RESPECTIVE DRAWINGS.
  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH STRUCTURAL SERVICES DRAWING.

**CLIENT:**  
DEPARTMENT OF HORTICULTURE, KARNATAKA

**CONSULTANT:**  
 M/S. NABARD Consultancy Services (NABCONS)

**ASSOCIATE CONSULTANT:**  
 **SONNE INFRASTRUCTURE PVT. LTD**  
S-1, A 2nd FLOOR, AMAR SINDUR COMPLEX,  
43- PANTHEON ROAD, EGMORE,  
CHENNAI - 600008  
Contact : 044-28629445

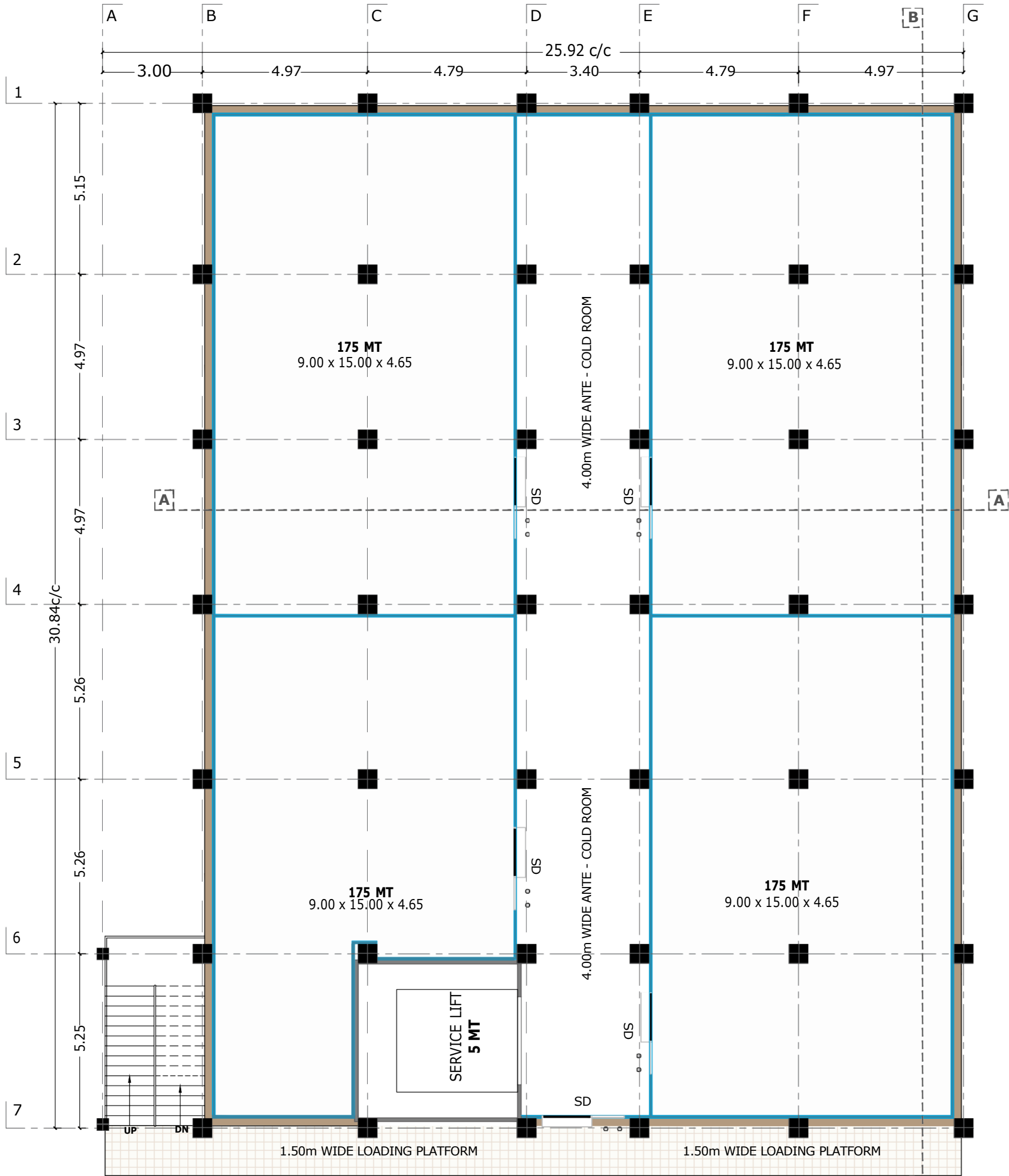
**PROJECT :** CONSTRUCTION OF 2000 MT COLD STORAGE AT CHAWENAHALLI FARM IN MALUR TALUK , KOLAR DISTRICT

**TITLE :** MASTER PLAN

Drawn by : PR	Approved by : MSLP	SHEET A3
Date : 27.02.2024	Designed by : BLESSY	
SCALE : 1:375	DWG NO : SIPL/KA/KLR/ARC/01	SHT NO 01



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GROUND FLOOR PLAN  
2144 MT COLD STORAGE (536 MT X4 Nos)

AREA STATEMENT:

S.NO	DESCRIPTION	SIZE
01	COLD CHAMBER	2144MT (4 CHAMBERS)
02	STORAGE - 2000 MT	(536 MT x 4Nos)
03	COLD STORAGE - G + 2	2015 Sq.m
04	COLD STORAGE - G + 2	655 Sq.m/Floor
05	MS LIFT CABIN	01 No

MECHANICAL SPECIFICATIONS: FREON REFRIGERATION

CDU DESIGNATION	TYPE & DETAILS
SIZE	9.00m x 15.00m x 4.65m(h)x 4Nos
REFRIGERANT	R- 404a
PRODUCT TO BE STORED	Red Chillies, Pulses, Tamarind
OPERATING CONDITIONS	11.5TR Cooling capacity @ -4°C SST & 50°C SDT.
STORAGE CAPACITY IN MT	2000 MT (536 MT x 4 Nos)
DESIGN AMBIENT TEMPERATURE	45°C
DESIGN INSIDE TEMPERATURE	+4°C
REFRIGERATION SYSTEM	
HIGH EFFICIENCY AIR COOLED REFRIGERATION SCROLL CONDENSING UNITS	Air cooled condensing units with refrigeration compressor for the above application with suction & discharge Isolation Valves,HP/LP Switch,Suction line accumulator, Liquid Receiver, and canopy.  Cooling Capacity of each Condensing Unit: 6 TR each -4°C SST/+50°C SDT With R404a Refrigerant. No. of Condensing unit : Eight Nos ( Two Nos for each Chamber)
EVAPORATORS	Evaporators High Efficiency Ceiling Suspended Evaporators Powder Coated casing, Cooper coil with Aluminum fins, High efficiency Axial flow fans and Drain pan with min 7mm fin spacing. No. of Evaporators : Eight Nos (Two nos for each Chamber)
REFRIGERATION CONTROLS	Refrigeration Controls for the above units comprising of Danfoss Thermostatic Expansion valves, Hand Shut off valves, etc.
REFRIGERANT PIPING	Refrigeration pipes and pipe fittings comprising of heavy duty seamless copper pipes, pipe fittings, nitrile rubber insulation for suction lines (considering 13 RNT distance between CDU and Evaporators) with first charge of R404A Refrigerant.
POWER CONSUMPTION	Power Consumption for each units will be 11.7 Kw each x 8 units.

JOINERY DETAILS : (G+2)

S.NO	DESCRIPTION	WIDTH	HEIGHT	NOS
01	SLIDING DOOR - SD	1.50	2.10	15

FOR TENDER PURPOSE ONLY

NOTES:

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- THE LEVELS ARE MENTIONED ON THE RESPECTIVE DRAWINGS.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH STRUCTURAL SERVICES DRAWING.

CLIENT:

DEPARTMENT OF HORTICULTURE, KARNATAKA

CONSULTANT:

M/S. NABARD Consultancy Services (NABCONS)

ASSOCIATE CONSULTANT:

SONNE INFRASTRUCTURE PVT. LTD  
S-1, A, 2nd FLOOR, AMAR SINDUR COMPLEX  
43- PANTHEON ROAD, EGMORE,  
CHENNAI - 600008  
Contact :044-29552445

PROJECT : CONSTRUCTION OF 2000 MT COLD STORAGE AT CHAWENAHALLI FARM IN MALUR TALUK , KOLAR DISTRICT

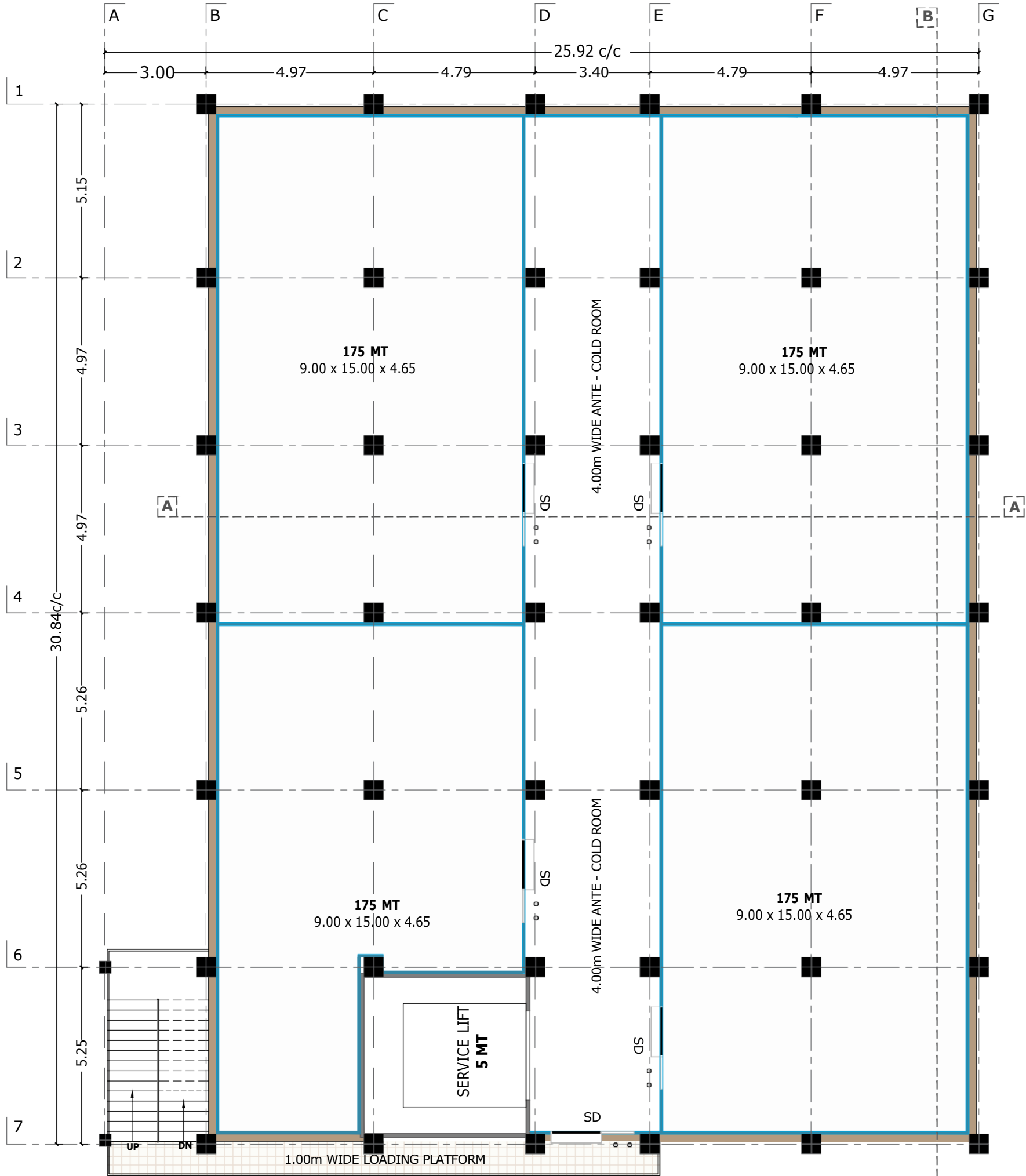
TITLE : 2000 MT COLD STORAGE - GROUND FLOOR PLAN

Drawn by : PUSHAKK Approved by : MSLP SHEET

Date : 26.02.2024 Designed by : BLESSY A3

SCALE : 1:130 DWG NO : SIPL/KA/KLR/ARC/02 SHT NO 02

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TYPICAL FLOOR PLAN (FIRST & SECOND)

AREA STATEMENT:

S.NO	DESCRIPTION	SIZE
01	COLD CHAMBER	2144MT (4 CHAMBERS)
02	STORAGE - 2000 MT	(536 MT x 4Nos)
03	COLD STORAGE - G + 2	2015 Sq.m
04	COLD STORAGE - G + 2	655 Sq.m/Floor
05	MS LIFT CABIN	01 No

MECHANICAL SPECIFICATIONS: FREON REFRIGERATION

CDU DESIGNATION	TYPE & DETAILS
SIZE	9.00m x 15.00m x 4.65m(h)x 4Nos
REFRIGERANT	R- 404a
PRODUCT TO BE STORED	Red Chillies, Pulses, Tamarind
OPERATING CONDITIONS	11.5TR Cooling capacity @ -4°C SST & 50°C SDT.
STORAGE CAPACITY IN MT	2000 MT (536 MT x 4 Nos)
DESIGN AMBIENT TEMPERATURE	45°C
DESIGN INSIDE TEMPERATURE	+4°C
REFRIGERATION SYSTEM	
HIGH EFFICIENCY AIR COOLED REFRIGERATION SCROLL CONDENSING UNITS	Air cooled condensing units with refrigeration compressor for the above application with suction & discharge Isolation Valves,HP/LP Switch,Suction line accumulator, Liquid Receiver, and canopy.  Cooling Capacity of each Condensing Unit: 6 TR each -4°C SST/+50°C SDT With R404a Refrigerant. No. of Condensing unit : Eight Nos ( Two Nos for each Chamber)
EVAPORATORS	Evaporators High Efficiency Ceiling Suspended Evaporators Powder Coated casing, Cooper coil with Aluminum fins, High efficiency Axial flow fans and Drain pan with min 7mm fin spacing. No. of Evaporators : Eight Nos (Two nos for each Chamber)
REFRIGERATION CONTROLS	Refrigeration Controls for the above units comprising of Danfoss Thermostatic Expansion valves, Hand Shut off valves, etc.
REFRIGERANT PIPING	Refrigeration pipes and pipe fittings comprising of heavy duty seamless copper pipes, pipe fittings, nitrile rubber insulation for suction lines (considering 13 RNT distance between CDU and Evaporators) with first charge of R404A Refrigerant.
POWER CONSUMPTION	Power Consumption for each units will be 11.7 Kw each x 8 units.

JOINERY DETAILS : (G+2)

S.NO	DESCRIPTION	WIDTH	HEIGHT	NOS
01	SLIDING DOOR - SD	1.50	2.10	15

FOR TENDER PURPOSE ONLY

NOTES:

- ALL THE DIMENSIONS & LEVELS ARE IN METER.
- DRAWING SHALL NOT TO BE SCALED . ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- ANY ERROR OR DISCREPANCIES IN THE DRAWING ARE TO BE BROUGHT TO THE NOTICE OF ARCHITECT/ ENGINEER.
- THIS DRAWING SHALL NOT TO BE USED OTHER THAN THE PURPOSES MARKED/ISSUED.
- THE LEVELS ARE MENTIONED ON THE RESPECTIVE DRAWINGS.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH STRUCTURAL SERVICES DRAWING.

CLIENT:

DEPARTMENT OF HORTICULTURE KARNATAKA

CONSULTANT:

M/S. NABARD Consultancy Services (NABCONS)

ASSOCIATE CONSULTANT:

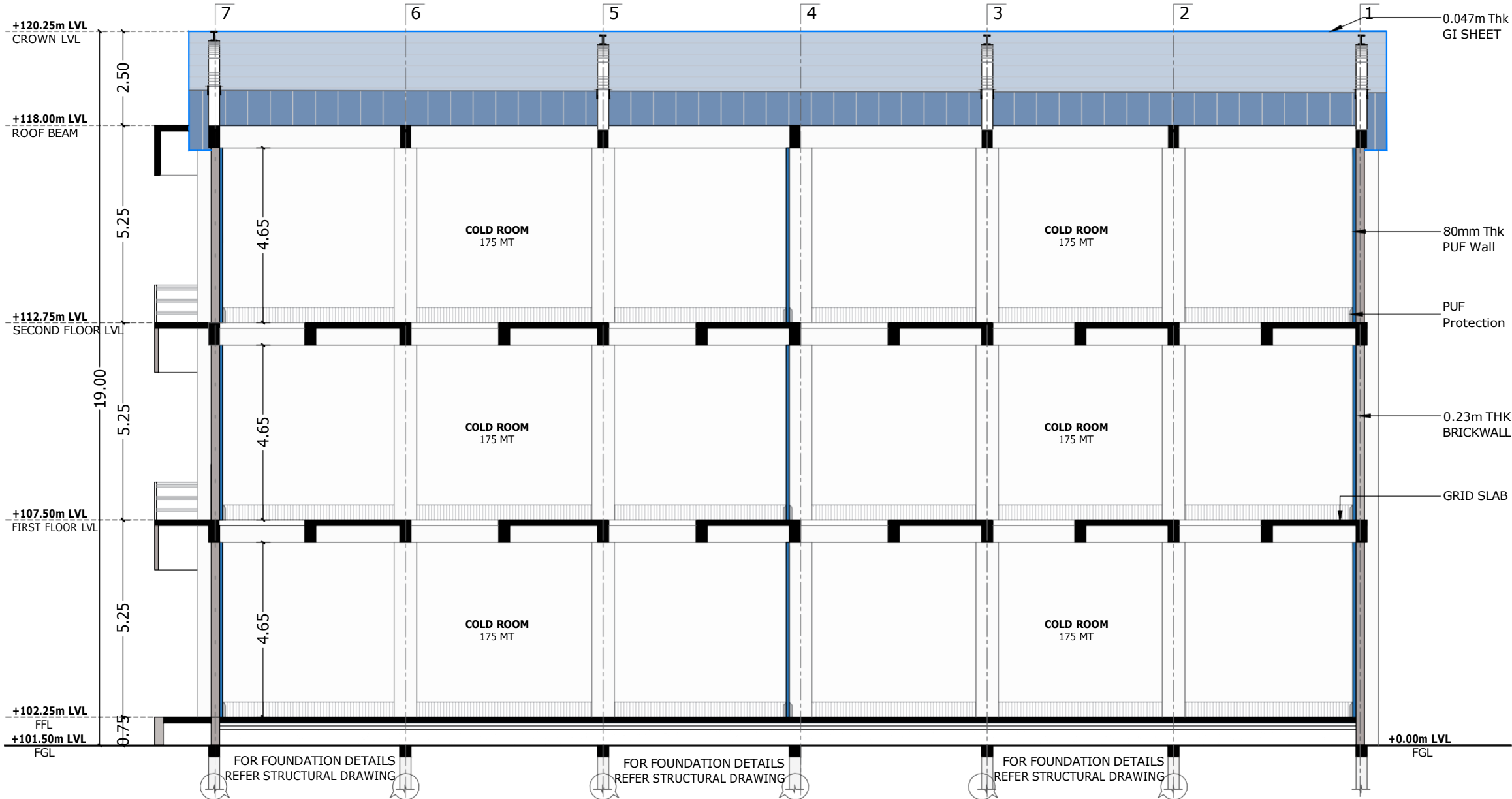
SONNE INFRASTRUCTURE PVT. LTD  
S-1, A, 2ND FLOOR, AMAR SINDUR COMPLEX  
43- PANTHEON ROAD, EGMORE,  
CHENNAI - 600008  
Contact :044-28552445

PROJECT : CONSTRUCTION OF 2000 MT COLD STORAGE AT CHAWENAHALLI FARM IN MALUR TALUK , KOLAR DISTRICT

TITLE : 2000 MT COLD STORAGE - FIRST & SECOND FLOOR PLAN

Drawn by : PUSHAKK	Approved by : MSLP	SHEET A3
Date : 27.02.2024	Designed by : BLESSY	
SCALE : 1:130	DWG NO : SIPL/KA/KLR/ARC/03	SHT NO 03

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SECTION B-B  
2000 MT CAPACITY

**GENERAL SPECIFICATIONS:**

FOUNDATION	Sand filling - 100mm PCC - 100mm (1:4:8) RCC - Column footing grade of concrete M30
RCC WORK	For Plinth Beam, Lintel Beams, Sunshade, Roof etc., with required thickness cement concrete used M30 grade.
SUPER STRUCTURE	0.23m Thk External Wall (B.W in C.M 1:8) 0.15m Thk Internal Wall (B.W in C.M 1:4) PEB Structure above +15.15 m Lvl 0.5mm Thk GI sheet above PEB Structure.
LIFT (S.S CABIN) 01 Nos	<b>ELEVATOR DETAILS:</b> 3915mm x 3950mm Well size (2000mm Depth Lift Pit) Capacity 5000 Kg. Speed 1.0 m/s. Stops & Openings 2 Stops & 2 Openings, Single Entrance car Travel Height 10.85m Elevator Grouping Simplex Full Collective Control Well Dimension 3915mm width & 3950mm depth Pit Height 2000mm MAP Floor position Topmost Floor (TOP) Car Dimensions 2800 (w) x 3300(D) x 2400mm (h) Door Dimensions 2400 (w) x 2200mm(h) Door Type [ TYP _ CDO _ A(5C) ] Panel 4 <b>FINISHES</b> Car Panel finish Walls: Stainless Steel Ceiling & Lighting Single Ceiling Tile (CT002) Stainless Steel 6mm ST - Checkered , Steel Car Skirting Material : Stainless Steel Hairline AISI441 Car Door Finish Stainless Steel Hairline AISI441 Car Operating Panel1 Partial Height Stainless Steel Face Plate Silver Brushed <b>FEATURES</b> Standard Existing Light Fireman Drive Automatic, Closed Door.


**JOINERY DETAILS : (G+2)**

S.NO	DESCRIPTION	WIDTH	HEIGHT	NOS
01	SLIDING DOOR - SD	1.50	2.10	15

**FOR TENDER PURPOSE ONLY**

- NOTES:**
- ALL THE DIMENSIONS & LEVELS ARE IN METER.
  - DRAWING SHALL NOT TO BE SCALED . ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
  - ANY ERROR OR DISCREPANCIES IN THE DRAWING ARE TO BE BROUGHT TO THE NOTICE OF ARCHITECT/ ENGINEER.
  - THIS DRAWING SHALL NOT TO BE USED OTHER THAN THE PURPOSES MARKED/ISSUED.
  - THE LEVELS ARE MENTIONED ON THE RESPECTIVE DRAWINGS.
  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH STRUCTURAL SERVICES DRAWING.

**CLIENT:**  
DEPARTMENT OF HORTICULTURE, KARNATAKA

**CONSULTANT:**  
 M/S. NABARD Consultancy Services (NABCONS)

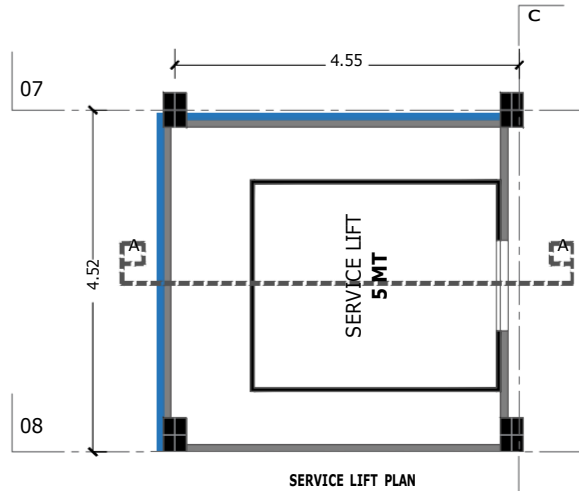
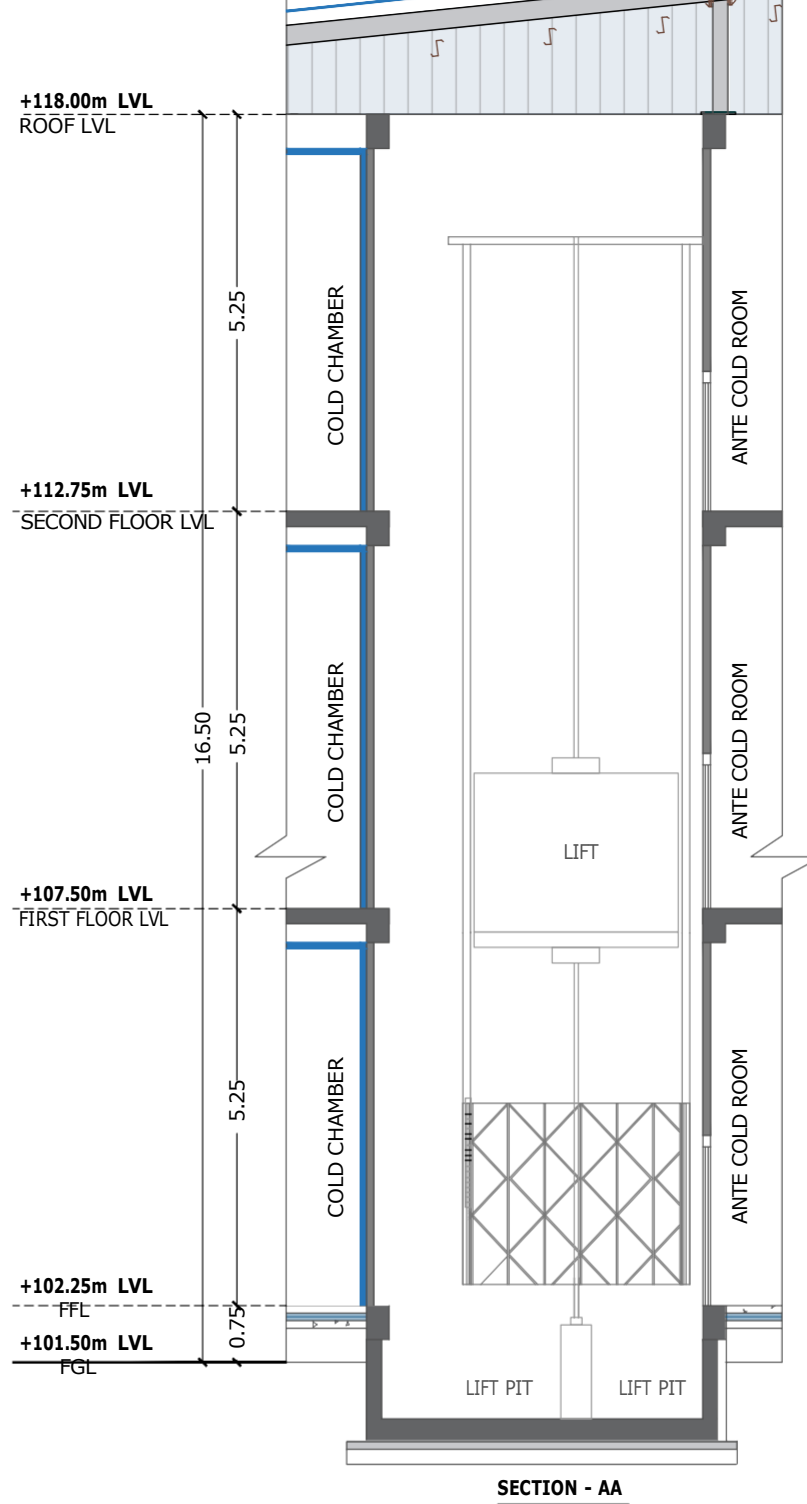
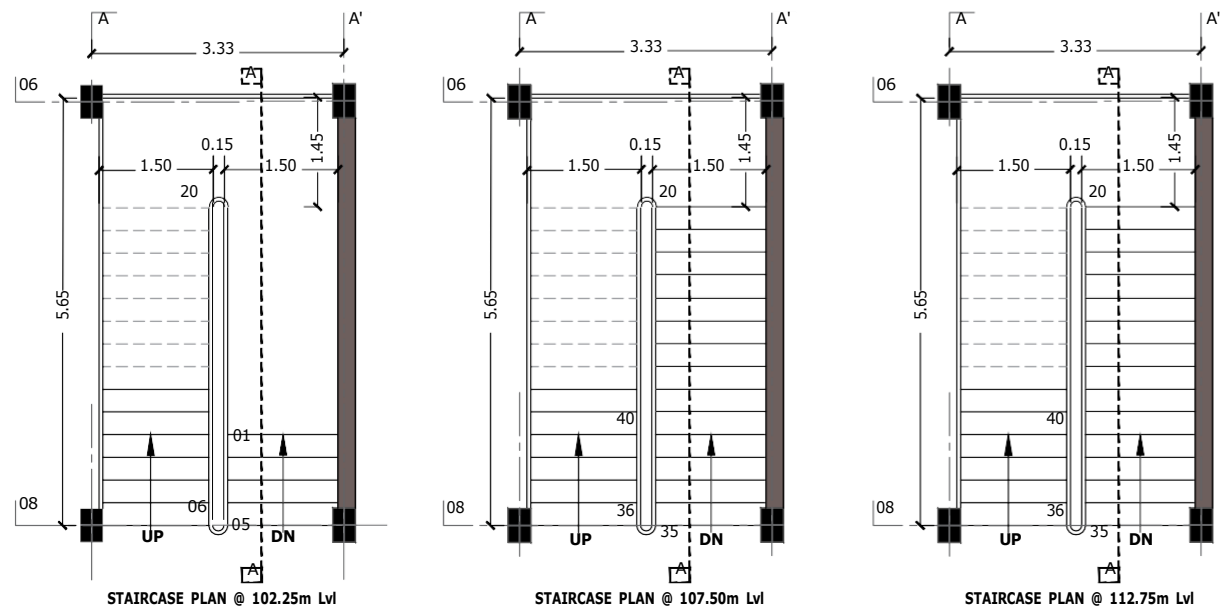
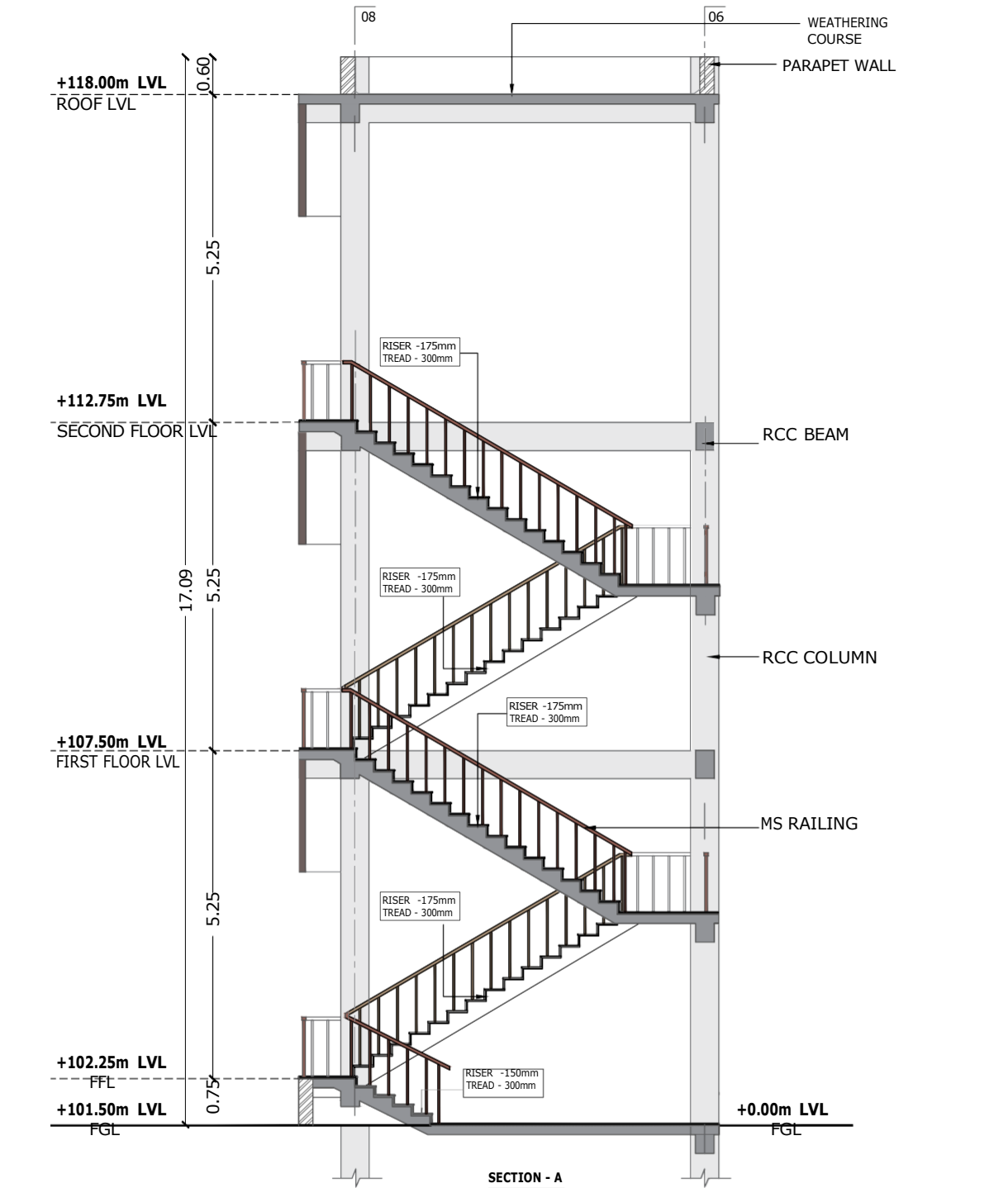
**ASSOCIATE CONSULTANT:**  
 **SONNE INFRASTRUCTURE PVT. LTD**  
S-1, A 2ND FLOOR, AMAR SINDUR COMPLEX,  
43-PANTHEON ROAD, EGMORE,  
CHENNAI - 600008  
Contact : 984-2852445

**PROJECT :** CONSTRUCTION OF 2000 MT COLD STORAGE AT CHAWENAHALLI FARM IN MALUR TALUK , KOLAR DISTRICT

**TITLE :** 2000 MT COLD STORAGE - SECTIONS (G+2)

Drawn by : PUSHAKK	Approved by : MSLP	SHEET A3
Date : 26.02.2024	Designed by : BLESSY	
SCALE : 1:150	DWG NO : SIPL/KA/HVR/ARC/3A	SHT NO 3A

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#### GENERAL SPECIFICATIONS:

FOUNDATION	Sand filling - 100mm PCC - 100mm (1:4:8) RCC - Column footing grade of concrete M30
RCC WORK	For Plinth Beam, Lintel Beams, Sunshade, Roof etc., with required thickness cement concrete used M30 grade.
SUPER STRUCTURE	0.23m Thk External Wall (B.W in C.M 1:8) 0.15m Thk Internal Wall (B.W in C.M 1:4) PEB Structure above +15.15 m Lvl 0.5mm Thk GI sheet above PEB Structure.
LIFT (S.S CABIN) 01 Nos	<b>ELEVATOR DETAILS:</b> 3915mm x 3950mm Well size (2000mm Depth Lift Pit) Capacity 5000 Kg. Speed 1.0 m/s. Stops & Openings 2 Stops & 2 Openings, Single Entrance car Travel Height 10.85m Elevator Grouping Simplex Full Collective Control Well Dimension 3915mm width & 3950mm depth Pit Height 2000mm MAP Floor position Topmost Floor (TOP) Car Dimensions 2800 (w) x 3300(D) x 2400mm (h) Door Dimensions 2400 (w) x 2200mm(h) Door Type [ TYP _ CDO _ A(5C) ] Panel 4 <b>FINISHES</b> Car Panel finish Walls: Stainless Steel Ceiling & Lighting Single Ceiling Tile (CT002) Stainless Steel Flooring 6mm ST - Checkered , Steel Car Skirting Material : Stainless Steel Hairline AISI441 Car Door Finish Stainless Steel Hairline AISI441 Car Operating Panel1 Partial Height Stainless Steel Face Plate Silver Brushed <b>FEATURES</b> Standard Existing Light Fireman Drive Automatic, Closed Door.

FOR TENDER PURPOSE ONLY

#### NOTES:

- ALL THE DIMENSIONS & LEVELS ARE IN METER.
- DRAWING SHALL NOT TO BE SCALED .  
ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
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- THE LEVELS ARE MENTIONED ON THE RESPECTIVE DRAWINGS.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH STRUCTURAL SERVICES DRAWING.

#### CLIENT:

DEPARTMENT OF HORTICULTURE, KARNATAKA

#### CONSULTANT:

M/S. NABARD Consultancy Services (NABCONS)

#### ASSOCIATE CONSULTANT:

SONNE INFRASTRUCTURE PVT. LTD.  
S-1, A, 2nd FLOOR, AMAR SINDHUR COMPLEX  
43, PANTHEON ROAD, EGMORE,  
CHENNAI - 600008  
Contact :044-28552445

**PROJECT :** 2000 MT COLD STORAGE AT CHAWENAHALLI HORTICULTURE FARM, MALUR TALUK, KOLAR DISTRICT , KARNATAKA

**TITLE :** 2000 MT COLD STORAGE - STAIRCASE & LIFT(G+2)

Drawn by : Ar. RUSHNI KS

Approved by : MSLP

Date : 26.02.2024

Designed by : BLESSY

SCALE : 1:100

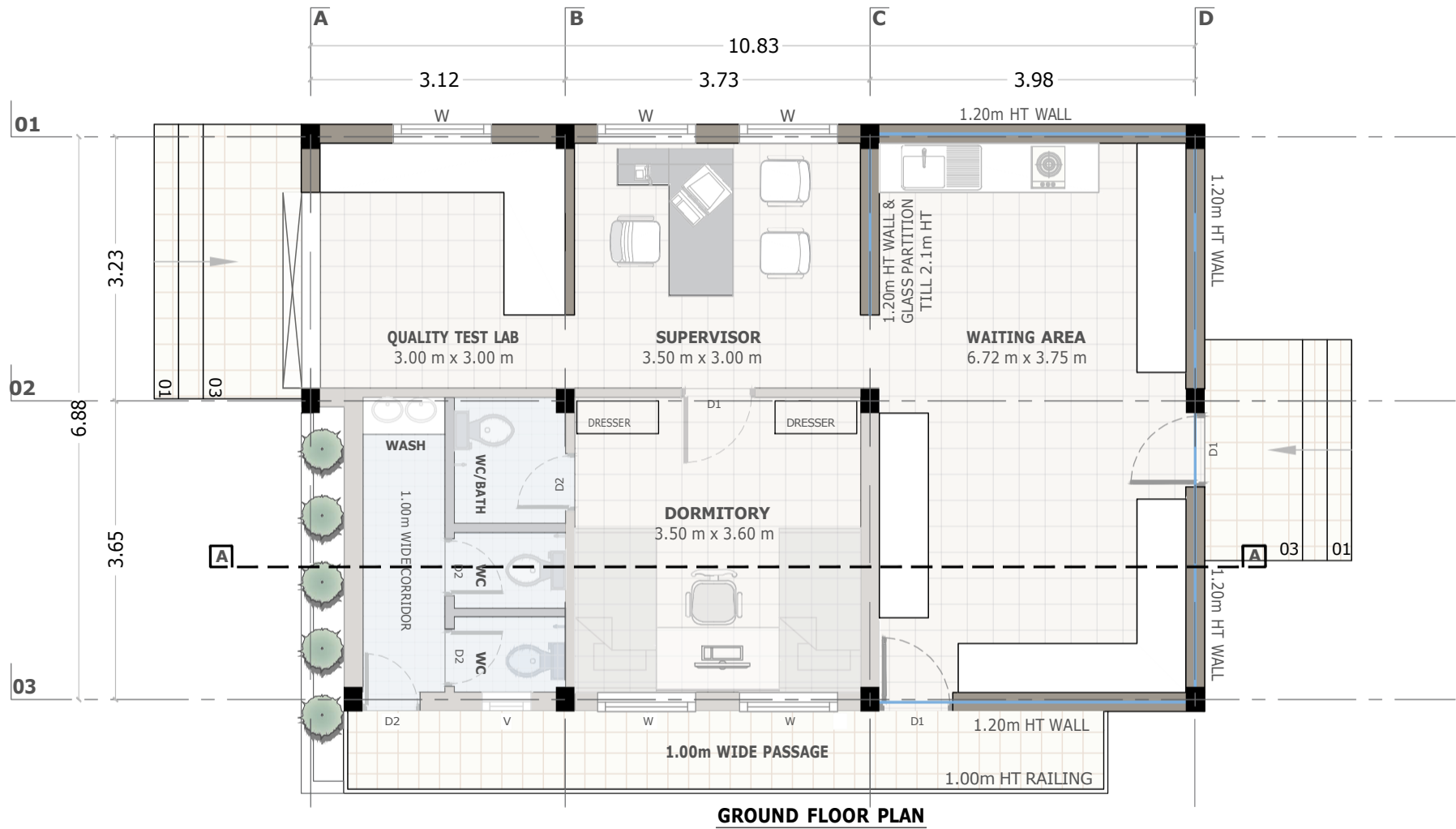
DWG NO : SIPL/KA/KLR/ARC/04

SHEET

A3

SHT NO

04



#### AREA STATEMENT:

S.NO	DESCRIPTION	SQ.M
01	TOTAL BUILT UP AREA	90.00 Sq.m
02	WAITING AREA	25.00 Sq.m
03	SUPERVISOR	10.50 Sq.m
04	QUALITY TEST LAB	9.00 Sq.m
05	DORMITORY	12.60 Sq.m
06	TOILET	9.00 Sq.m

#### SPECIFICATIONS:

FOUNDATION	Sand filling - 100mm PCC - 100mm RCC - Column footing grade of concrete M30
RCC WORK	For Plinth Beam, Lintel Beams, Sunshade, Roof etc., with required thickness cement concrete used M30 grade.
SUPER STRUCTURE	B.W in Cement Mortar External Wall - 230mm Thk with C.M 1:8 Internal Wall - 100mm Thk flyash brick partition wall with C.M 1:4 & GI Sheet above Kitchen area.
FLOORING	18mm Thk Granite flooring in Corridors and stone seaters in kitchen area. 10mm Thk Vitrified Tiles over P.C.C 1:4:8 for other areas. 8mm Thk Antiskid Ceramic tiles over P.C.C 1:4:8 for toilet. Daddoing in toilet wall till 2.10m Lvl from FFL with 300mm x 300mm Vitrified Tiles.
DOOR	2nd class teak wood frame work enamel painted flush dopr - Outside laminated & inside enamel painted. PVC Doors for Toilet .
WINDOW	Upvc glazed windows (Sliding) Grill - 10mm square MS rod
VENTILATOR	Upvc glazed ventilators
WALL FINISHES	Exterior & Interior painted with two coats of emulsion paint over one coat of primer
WEATHERING COURSE	Impervious coat RCC Roof with C.M 1:3 of 20mm thick

#### JOINERY DETAILS:

S.NO	DESCRIPTION	WIDTH	HEIGHT	NOS
01	ROLLING SHUTTER - RS	2.00	3.00	01
02	DOOR 1 - D1	0.90	2.10	03
03	DOOR 2 - D2	0.75	2.10	04
04	WINDOW - W	1.50	1.20	05
05	VENTILATOR - V	0.60	0.60	01

#### FOR TENDER PURPOSE ONLY

#### NOTES:

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- THE LEVELS ARE MENTIONED ON THE RESPECTIVE DRAWINGS.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH STRUCTURAL SERVICES DRAWING.

#### CONSULTANT:



M/S. NABARD Consultancy Services (NABCONS)

#### ASSOCIATE CONSULTANT:



SONNE INFRASTRUCTURE PVT. LTD  
SPL A 2ND FLOOR, AMAR SINDUR COMPLEX,  
43- PANTHEON ROAD, EGMORE,  
CHENNAI - 600008  
Contact : 944-2852445

#### CLIENT:

DEPARTMENT OF HORTICULTURE, KARNATAKA

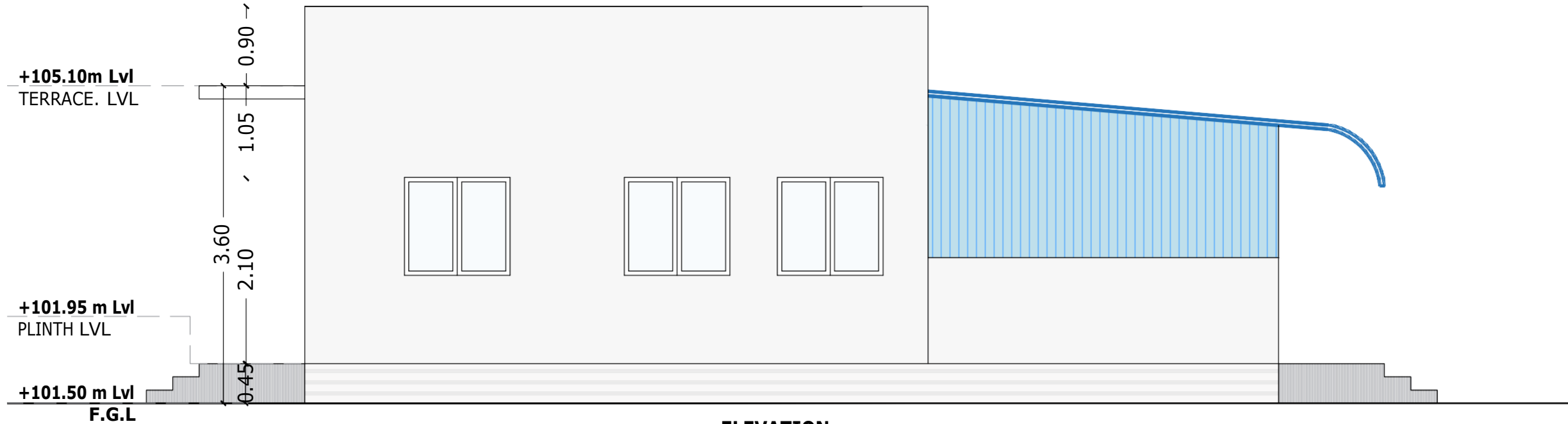
**PROJECT :** 2000 MT COLD STORAGE AT CHAWENAHALLI HORTICULTURE FARM, MALUR TALUK, KOLAR DISTRICT , KARNATAKA

**TITLE :** TECHNICIAN SHED - FLOOR PLAN

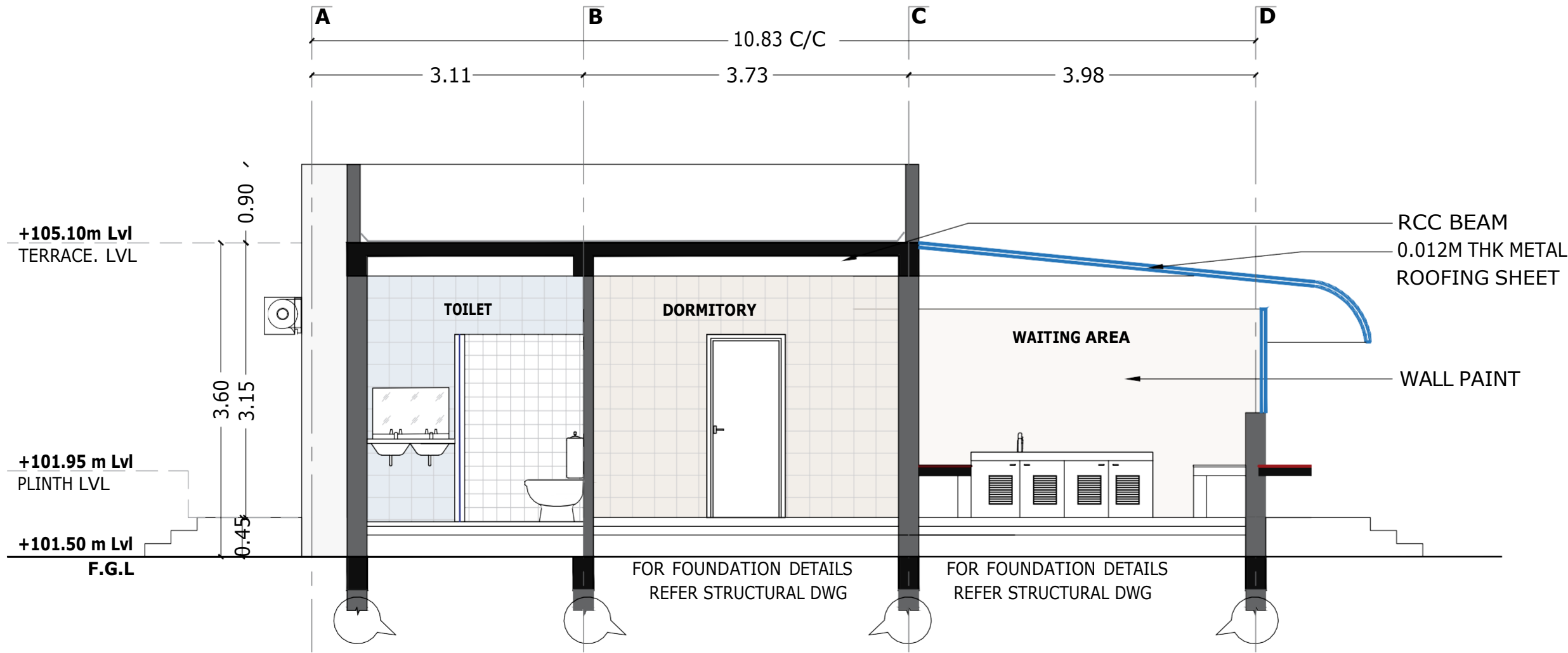
Drawn by : Ar.DS	Approved by : MSLP	SHEET A3
Date : 26.02.2024	Designed by : BLESSY	
SCALE : 1:60	DWG NO : SIPL/KA/KLR/ARC/05	SHT NO 05



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**ELEVATION**



**SECTION - AA'**

AREA STATEMENT:		
S.NO	DESCRIPTION	AREA
01	TOTAL BUILT UP AREA	90.00 Sq.m
02	WAITING AREA	25.00 Sq.m
03	SUPERVISOR	10.50 Sq.m
04	QUALITY TEST LAB	9.00 Sq.m
05	DORMITORY	12.60 Sq.m
06	TOILET	9.00 Sq.m

SPECIFICATIONS:	
FOUNDATION	Sand filling - 100mm PCC - 100mm RCC - Column footing grade of concrete M30
RCC WORK	For Plinth Beam, Lintel Beams, Sunshade, Roof etc., with required thickness cement concrete used M30 grade.
SUPER STRUCTURE	B.W in Cement Mortar External Wall - 230mm Thk with C.M 1:8 Internal Wall - 100mm Thk flyash brick partition wall with C.M 1:4 with GI Sheet above Kitchen area.
FLOORING	18mm Thk Granite flooring in Corridors and stone seaters in kitchen area .10mm Thk Vitrified Tiles over P.C.C 1:4:8 for other areas. 8mm Thk Antiskid Ceramic tiles over P.C.C 1:4:8 for toilet. Daddooing in toilet wall till 2.10m Lvl from FFL with 300mm x 300mm Vitrified Tiles.
DOOR	2nd class teak wood frame work enamel painted flush door - Outside laminated & inside enamel painted. PVC Doors for Toilet .
WINDOW	Upvc glazed windows (Sliding) Grill - 10mm square MS rod
VENTILATOR	Upvc glazed ventilators
WALL FINISHES	Exterior & Interior painted with two coats of emulsion paint over one coat of primer
WEATHERING COURSE	Impervious coat RCC Roof with C.M 1:3 of 20mm thick

FOR TENDER PURPOSE ONLY

- NOTES:**
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  - ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
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  - THE LEVELS ARE MENTIONED ON THE RESPECTIVE DRAWINGS.
  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH STRUCTURAL SERVICES DRAWING.

**CONSULTANT:**  
NABCONS M/S. NABARD Consultancy Services (NABCONS)

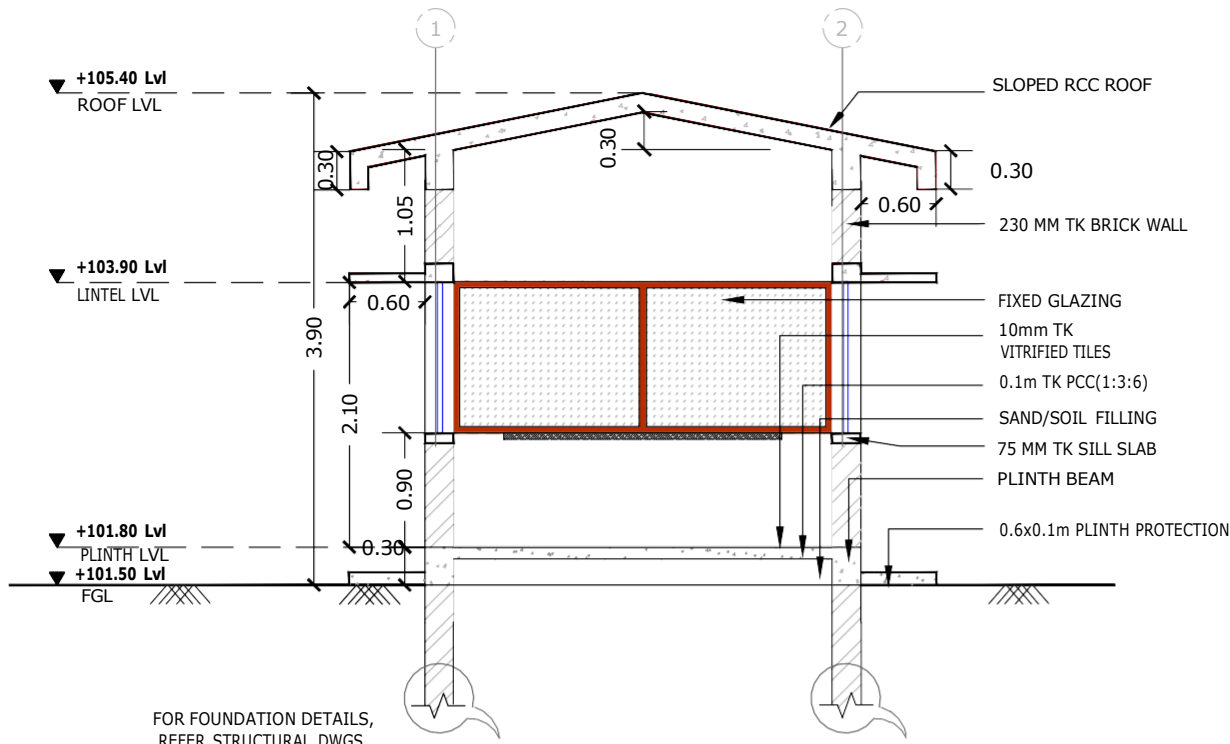
**ASSOCIATE CONSULTANT:**  
SIPL SONNE INFRASTRUCTURE PVT. LTD.  
B1, A 2ND FLOOR, NANNI SINGH COMPLEX,  
45- PANTHEON ROAD, EGMORE,  
CHERNNAI - 600008  
Contact: 944-28552445

**CLIENT:** DEPARTMENT OF HORTICULTURE, KARNATAKA

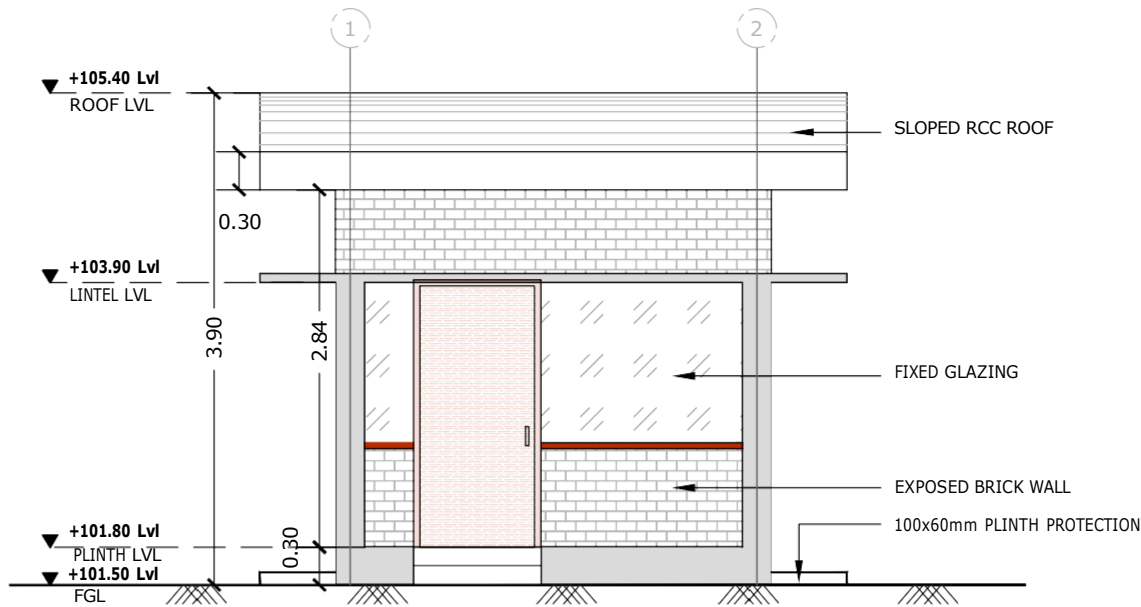
**PROJECT :** 2000 MT COLD STORAGE AT CHAWENAHALLI HORTICULTURE FARM, MALUR TALUK, KOLAR DISTRICT , KARNATAKA

**TITLE :** TECHNICIAN SHED - SECTION & ELEVATION

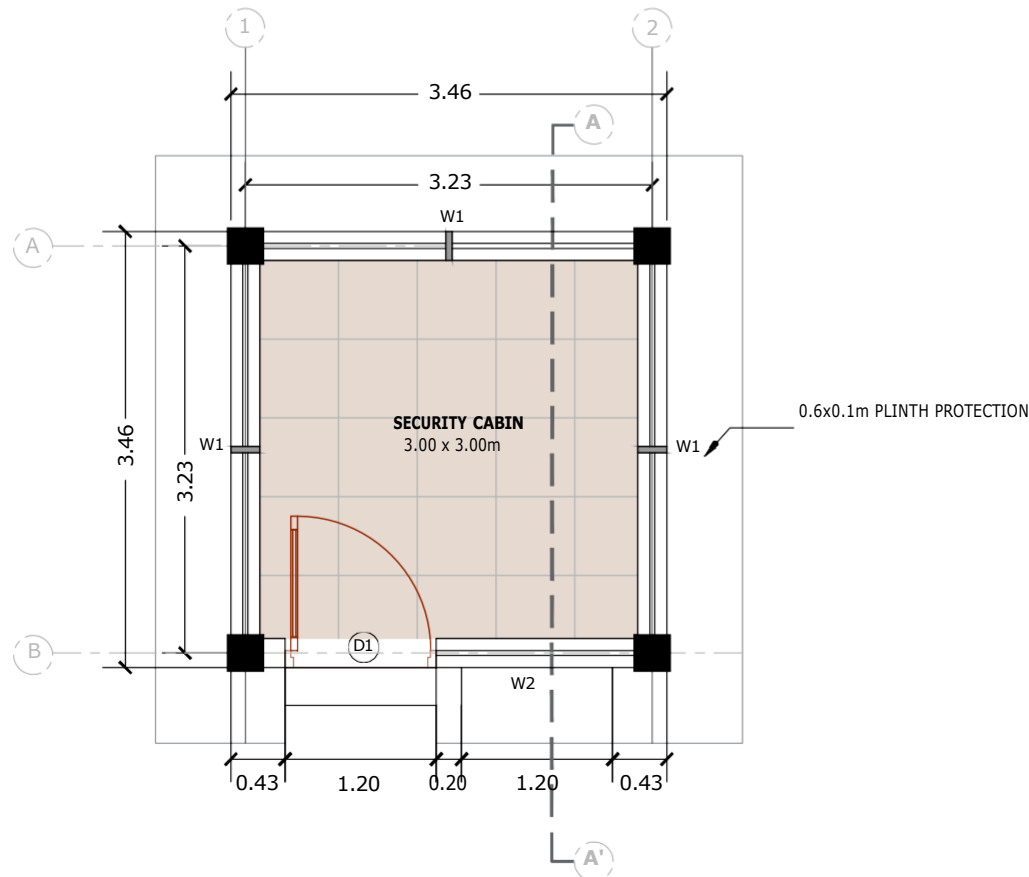
Drawn by : Ar.DS	Approved by : MSLP	SHEET A3
Date : 26.02.2024	Designed by : BLESSY	
SCALE : 1:60	DWG NO : SIPL/KA/KRL/ARC/5A	SHT NO 5A



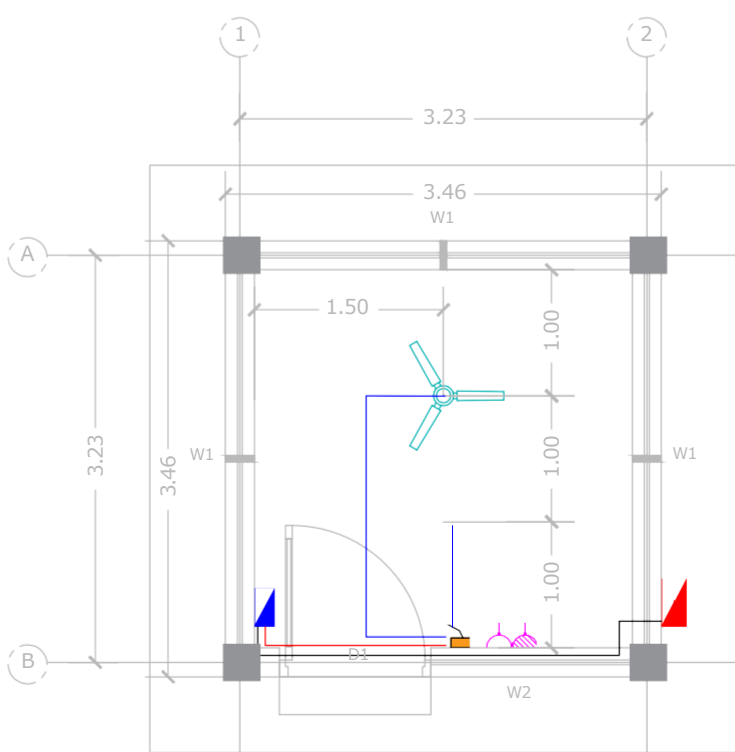
SECTION AT AA'



ELEVATION



SECURITY CABIN - PLAN



SECURITY CABIN  
ELECTRICAL PLAN

DESCRIPTION	LENGTH
GROUND FLOOR	
DB TO SB	1.48 R.m

DESCRIPTION	LENGTH
GROUND FLOOR	
DB TO TL	0.8 R.m
DB TO F1	1.9R.m
TOTAL LENGTH	2.7R.m

AREA STATEMENT :

TOTAL BUILT UP AREA (SECURITY)	12 Sq.m
--------------------------------	---------

JOINERY DETAILS :

S.NO	DESCRIPTION	WIDTH	HEIGHT	NOS
01.	DOOR - D1	1.20	2.10	01
02.	WINDOW - W1	3.00	1.20	03
03.	WINDOW - W2	1.60	1.20	01

SPECIFICATIONS :

FOUNDATION	Sand filling - 100m PCC - 100m (1:4:8) RCC - Raft footing grade of concrete M30
RCC WORK	For Plinth Beam, Lintel Beams, Sunshade, Roof etc., with required thickness cement concrete used M30 grade.
BRICK WORK	Basement : 230 mm Thk Common Burnt Clay brick designation 7.5 over CM 1:4 Super Structure : 230 mm Thk Common Burnt Clay brick (designation 7.5) over CM 1:6 Partition Wall : 115mm Thk Common Burnt Clay brick (designation 7.5) over CM 1:4
PLASTERING	Ceiling : 12mm Thk plaster of CM 1:4 Interior Wall : 12mm Thk plaster of CM 1:4 Exterior Wall : 18mm Thk 6mm Thk Outer layer of CM 1:3 over 12mm Thk layer of CM 1:5
WALL FINISHES	Ceiling : White Washing with Lime Interior Wall : Layer 1 : 2mm Thk Putty coat Layer 2 : One coat of Primer Layer 3 : Two coat of Plastic Emulsion Paint Exterior Wall : Two Coat of Textured Paint over One coat of Primer
FLOORING	Refer Flooring Layout
JOINERY	DOOR: Door Frame : Padak Wood Door Shutter : 35mm Thk Decorative type Flush Doors , Toilet Doors : PVC Doors Window : UPVC Glazed windows with Safety Grill Ventilator : UPVC Glazed Ventilator
WEATHERING COURSE	20mm Thk Pressed Clay tiles over 20mm Thk CM 1:4

FOR TENDER PURPOSE ONLY.

NOTES:

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ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- ANY ERROR OR DISCREPANCIES IN THE DRAWING ARE TO BE  
BROUGHT TO THE NOTICE OF ARCHITECT/ ENGINEER.
- THIS DRAWING SHALL NOT TO BE USED OTHER THAN THE  
PURPOSES MARKED/ISSUED.
- THE LEVELS ARE MENTIONED ON THE RESPECTIVE DRAWINGS.
- TBM +100.00 LVL IS TAKEN ON RTO OFFICE ROAD TOP.

CLIENT:

DEPARTMENT OF HORTICULTURE, KARNATAKA

CONSULTANT:

M/S. NABARD Consultancy Services (NABCONS)

ASSOCIATE CONSULTANT:

SONNE INFRASTRUCTURE PVT. LTD  
S-1, A, 2nd FLOOR, AMAR SINDUR COMPLEX,  
43- PANTHEON ROAD, EGMORE,  
CHENNAI - 600008  
Contact : 044-28552445

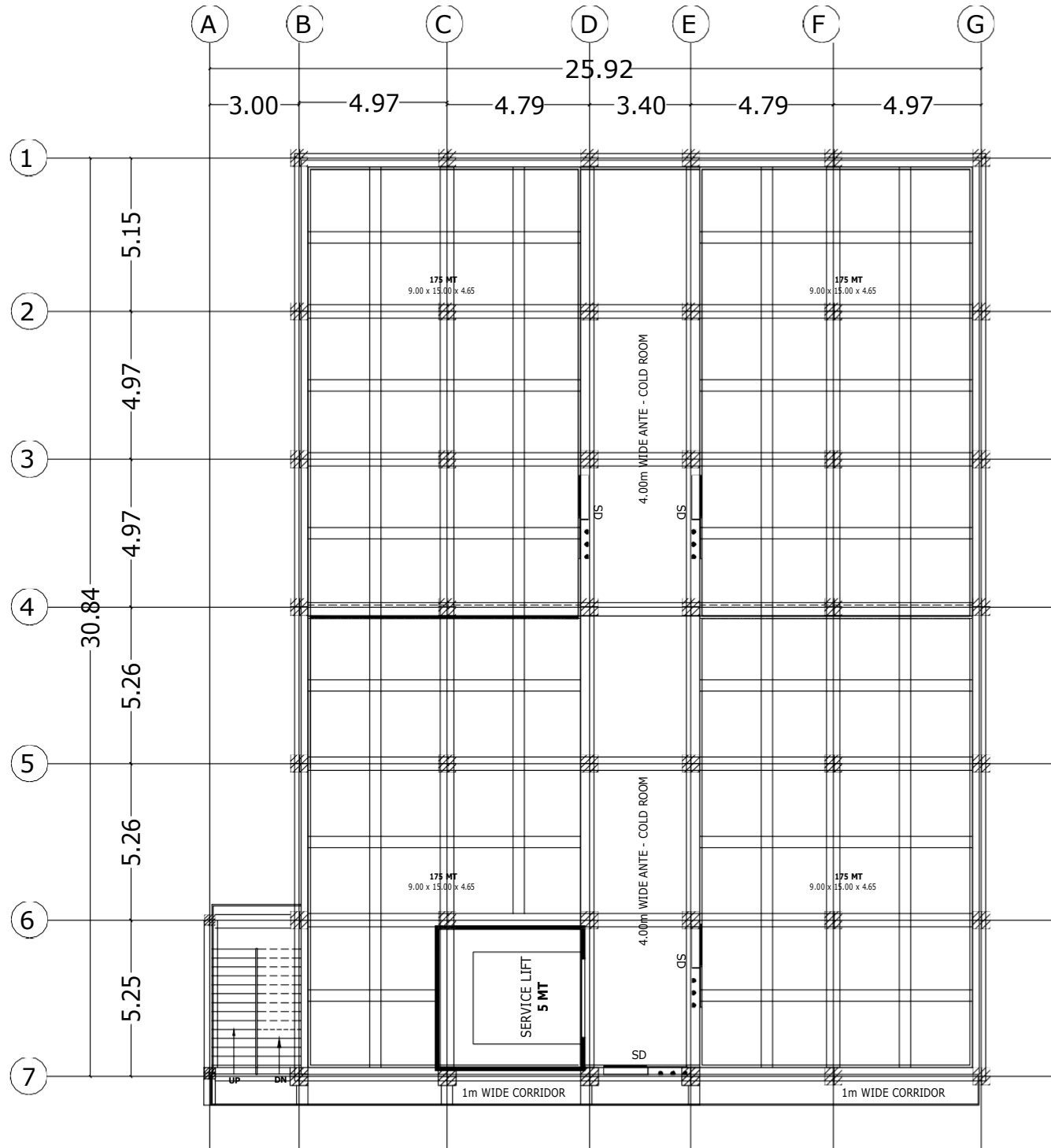
PROJECT : 2000 MT COLD STORAGE AT CHAWENAHALLI HORTICULTURE  
FARM, MALUR TALUK, KOLAR DISTRICT , KARNATAKA

TITLE : SECURITY BLOCK DETAILS

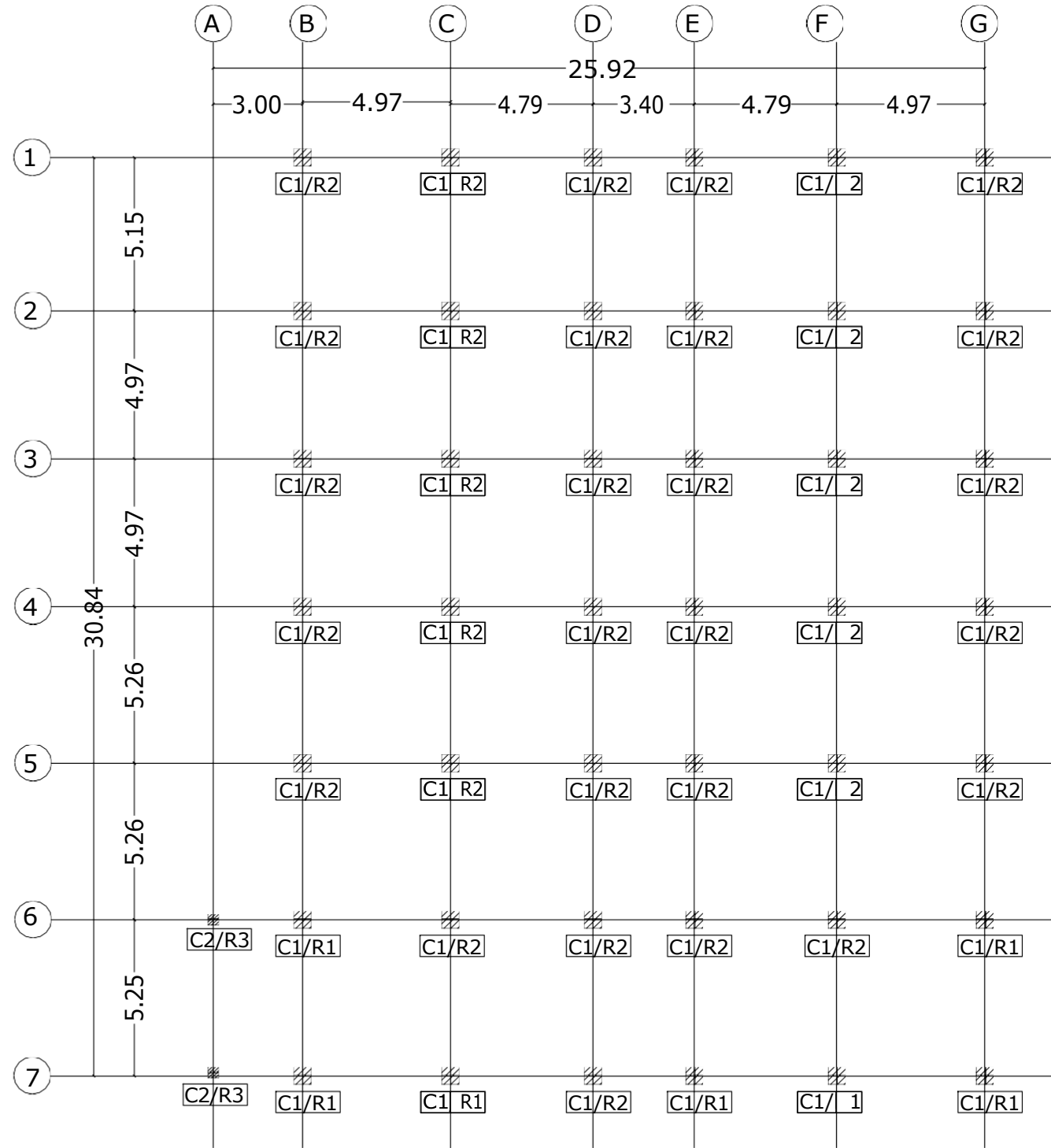
Drawn by : Shameem  
Date : 26.02.2024  
Approved by : MSLP  
Designed by : BLESSY

SCALE : 1:500  
DWG NO :SIPL/KA/KLR/ARC/06  
SHEET  
A3  
SHT NO  
06

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**G.A OF FLOOR PLAN**



**COLUMN LAYOUT**

**NOTES :**

1. ALL THE DIMENSIONS ARE PROVIDE IN METER (m) UNLESS OTHER WISE SPECIFIED.
2. DIMENSIONS SHALL NOT BE MEASURED FROM THE DRAWINGS, & ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. THIS DRAWING SHALL NOT BE USED THAN THE PURPOSE MARKED/ISSUED.
4. HIGH YIELD STRENGTH DEFORMED BARS Fe 500 CONFIRMING IS 1786-1985 TO BE USED WITH MINIMUM PERCENTAGE OF ELONGATION 14.5%.
5. THE GRADE OF CONCRETE M-30 (DESIGN MIX) CONFORMING FOR IS 456-2000 FOR ALL RCC WORK UNLESS OTHERWISE SPECIFIED.
6. MINIMUM CEMENT CONTENT SHALL NOT BE LESS THAN 320 kg/m<sup>3</sup> FOR M-30 CONCRETE.

7. ADMIXTURES SHALL BE ADDED WITH PERMISSION OF CLIENT.

8. CLEAR COVER TO THE REINFORCEMENT ARE AS FOLLOWS

FOUNDATION	-	50mm
COLUMN	-	40mm
BEAM	-	30mm
RCC WALL	-	25mm
SLAB	-	25mm

9. STRUCTURE IS DESIGNED FOR GROUND+TWO UPPER FLOOR+STEEL ROOF ONLY.

10. LAPPING OF COLUMN BARS SHALL BE MIDWAY BETWEEN SLABS OF STAGGERED WITH LAP LENGTH NOT LESS THAN 50Ø.

11. ALL PCC WORKS SHOULD BE CARNED OUT WITH PCC 1:4:8 CONFORMING TO IS 456-2000.

12. DESIGN MIX REPORT SHOULD BE GOT APPROVED BY ANNA UNIVERSITY/IIT/NIT/PWD.

13. DUCTILE DETAILING OF THE REINFORCED CONCRETE MEMBERS AS PROVIDED IN IS13920-2016 SHOULD BE FOLLOWED.

14. THE SBC OF THE SOIL IS 180 kN/m<sup>2</sup> AT 2.0 m (AS PER SOIL REPORT) FROM GROUND LEVEL (+0.00m). THE SBC OF THE SOIL SHALL BE CONFIRMED WITH SPT TEST BEFORE LAYING CONCRETE. IF THE SBC IS LESS THAN 180 kN/m<sup>2</sup>, THE FOUNDATION IS TO BE REDESIGNED

NOTATIONS:

- E.F - EACH FACE  
E.G.L - EXISTING GROUND LEVEL  
Ø - DIAMETER OF THE BAR  
C/C - CENTER TO CENTER DISTANCE  
G - GROUND LEVEL  
# - NUMBER BARS

CONSULTANT:

**SONNE INFRASTRUCTURE PVT. LTD.,**  
S-1, A, 2nd FLOOR, AMAR SINDUR COMPLEX,  
43- PANTHEON ROAD, EGMORE,  
CHENNAI - 600008  
Contact : 044-28552445  
E-mail: sonneinfra@gmail.com  
www.sonneinfra.com

CLIENT NAME:

DEPARTMENT OF HORTICULTURE, KARNATAKA

DRAWN BY :

GS

CHECKED BY:

AVM

DATE:

24.09.2022

DESIGNED BY:

MOHAN

APPROVED BY:

MSLP

SIZE:

A3

TENDER PURPOSE ONLY					
REV.	REVISIONS	DATE	DRAWN	DESIGNED	CHECKED

ISSUED FOR:	<input checked="" type="checkbox"/> DPR	<input type="checkbox"/> TENDER	<input type="checkbox"/> INFORMATION	<input type="checkbox"/> APPROVAL	<input type="checkbox"/> CONSTRUCTION
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PROJECT TITLE:	COLD STORAGE-CHAWENAHALLI (2000 MT)
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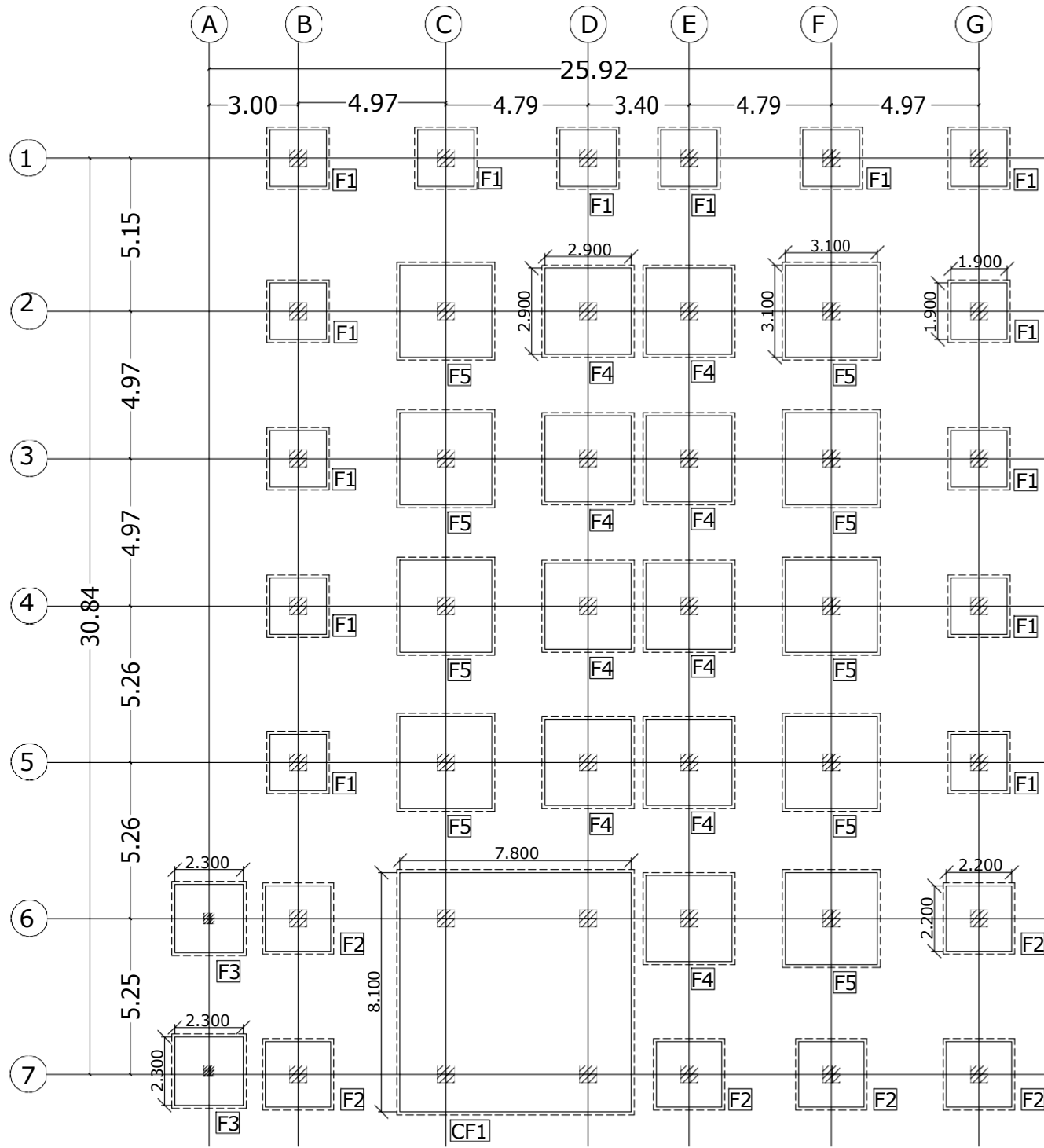
DRAWING TITLE:	GENERAL ARRANGEMENT OF FLOOR PLAN & COLUMN LAYOUT
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DRAWING NO:	SIPL-CS-22-474-ST- 07	SHEET NO:	07
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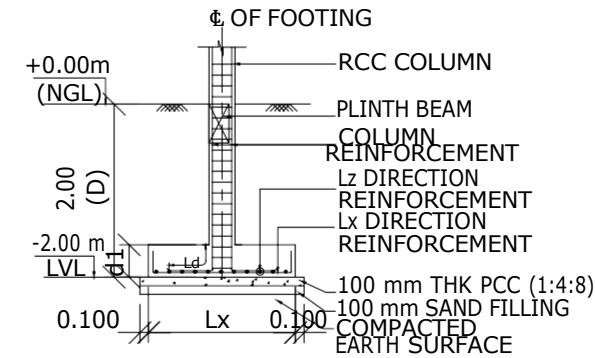
PROJECT CODE: 474



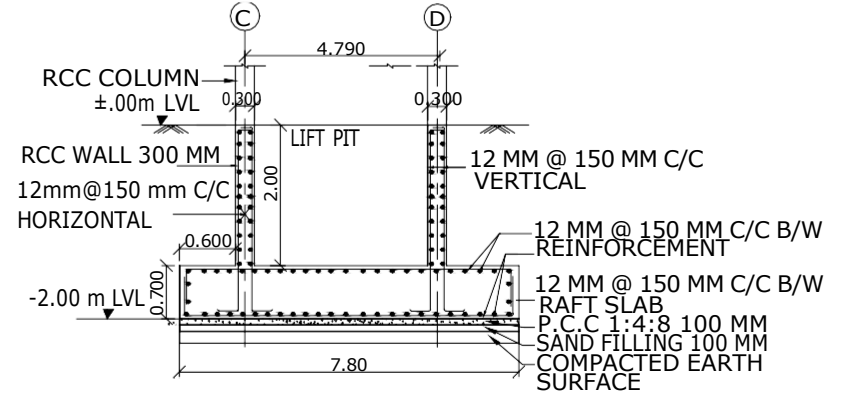
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**FOOTING LAYOUT**



**FOOTING SECTION**



**LIFT PIT SECTION DETAIL**

**SCHEDULE OF FOOTING**

FOOTING NAME	FOOTING SIZE Lx X Lz	D	d1	BOTTOM REINFORCEMENT		NOS
				Lx DIRECTION	Lz DIRECTION	
F1	1.90 X 1.90	2.00	0.400	12Ø@ 100 C/C	12Ø@ 100 C/C	14
F2	2.20 X 2.20	2.00	0.475	12Ø@ 100 C/C	12Ø@ 100 C/C	06
F3	2.30 X 2.30	2.00	0.550	12Ø@ 100 C/C	12Ø@ 100 C/C	02
F4	2.90 X 2.90	2.00	0.650	12Ø@ 100 C/C	12Ø@ 100 C/C	09
F5	3.10 X 3.10	2.00	0.700	12Ø@ 100 C/C	12Ø@ 100 C/C	09
CF1	7.80 X 8.10	2.00	0.700	12Ø@ 100 C/C	12Ø@ 100 C/C	01
TOTAL						41

- NOTES :**
- ALL THE DIMENSIONS ARE PROVIDE IN METER (m) UNLESS OTHER WISE SPECIFIED.
  - DIMENSIONS SHALL NOT BE MEASURED FROM THE DRAWINGS, & ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
  - THIS DRAWING SHALL NOT BE USED THAN THE PURPOSE MARKED/ISSUED.
  - HIGH YIELD STRENGTH DEFORMED BARS Fe 500 CONFIRMING IS 1786-1985 TO BE USED WITH MINIMUM PERCENTAGE OF ELONGATION 14.5%.
  - THE GRADE OF CONCRETE M-30 (DESIGN MIX) CONFORMING FOR IS 456-2000 FOR ALL RCC WORK UNLESS OTHERWISE SPECIFIED.
  - MINIMUM CEMENT CONTENT SHALL NOT BE LESS THAN 320 kg/m³ FOR M-30 CONCRETE.

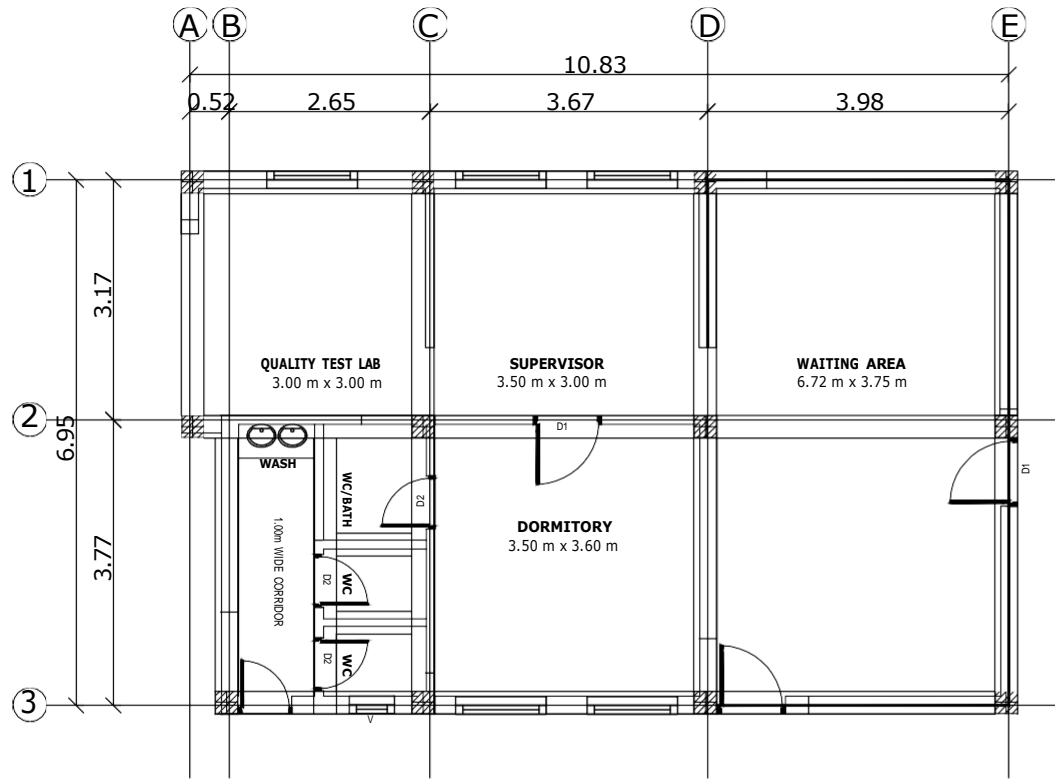
- ADMITURES SHALL BE ADDED WITH PERMISSION OF CLIENT.
- CLEAR COVER TO THE REINFORCEMENT ARE AS FOLLOWS  
FOUNDATION - 50mm  
COLUMN - 40mm  
BEAM - 30mm  
RCC WALL - 25mm  
SLAB - 25mm
- STRUCTURE IS DESIGNED FOR GROUND+TWO UPPER FLOOR+STEEL ROOF ONLY.
- LAPPING OF COLUMN BARS SHALL BE MIDWAY BETWEEN SLABS OF STAGGERED WITH LAP LENGTH NOT LESS THAN 50Ø.
- ALL PCC WORKS SHOULD BE CARNED OUT WITH PCC 1:4:8 CONFORMING TO IS 456-2000.
- DESIGN MIX REPORT SHOULD BE GOT APPROVED BY ANNA UNIVERSITY/IIT/NIT/PWD.
- DUCTILE DETAILING OF THE REINFORCED CONCRETE MEMBERS AS PROVIDED IN IS13920-2016 SHOULD BE FOLLOWED.

- THE SBC OF THE SOIL IS 180 kN/m² AT 2.0 m(AS PER SOIL REPORT) FROM GROUND LEVEL (+0.00m). THE SBC OF THE SOIL SHALL BE CONFIRMED WITH SPT TEST BEFORE LAYING CONCRETE. IF THE SBC IS LESS THAN 180 kN/m², THE FOUNDATION IS TO BE REDESIGNED
- NOTATIONS:
- E.F - EACH FACE  
E.G.L - EXISTING GROUND LEVEL  
Ø - DIAMETER OF THE BAR  
C/C - CENTER TO CENTER DISTANCE  
G - GROUND LEVEL  
# - NUMBER BARS

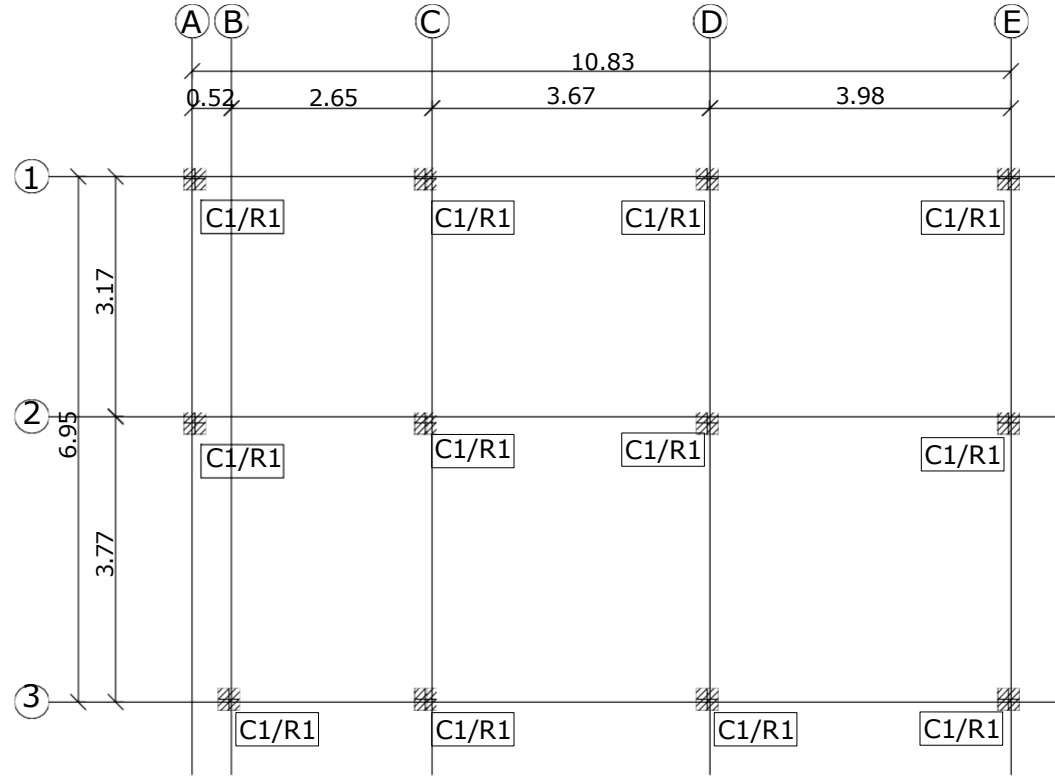
CONSULTANT: <b>SONNE INFRASTRUCTURE PVT. LTD.,</b> S-1, A, 2nd FLOOR, AMAR SINDUR COMPLEX, 43- PANTHEON ROAD, EGMORE, CHENNAI - 600008 Contact :044-28552445 E-mail: sonneinfra@gmail.com www.sonneinfra.com		ISSUED FOR: <input checked="" type="checkbox"/> DPR <input type="checkbox"/> TENDER <input type="checkbox"/> INFORMATION <input type="checkbox"/> APPROVAL <input type="checkbox"/> CONSTRUCTION	
CLIENT NAME: DEPARTMENT OF HORTICULTURE, KARNATAKA		PROJECT TITLE: COLD STORAGE-CHAWENAHALLI (2000 MT)	
DRAWN BY : GS		CHECKED BY: AVM	
DESIGNED BY: MOHAN		APPROVED BY: MSLP	
DATE: 24.09.2022		SIZE: A3	
DRAWING NO: SIPL-CS-22-474-ST-08		SHEET NO: 08	

TENDER PURPOSE ONLY				
REV.	REVISIONS	DATE	DRAWN	DESIGNED

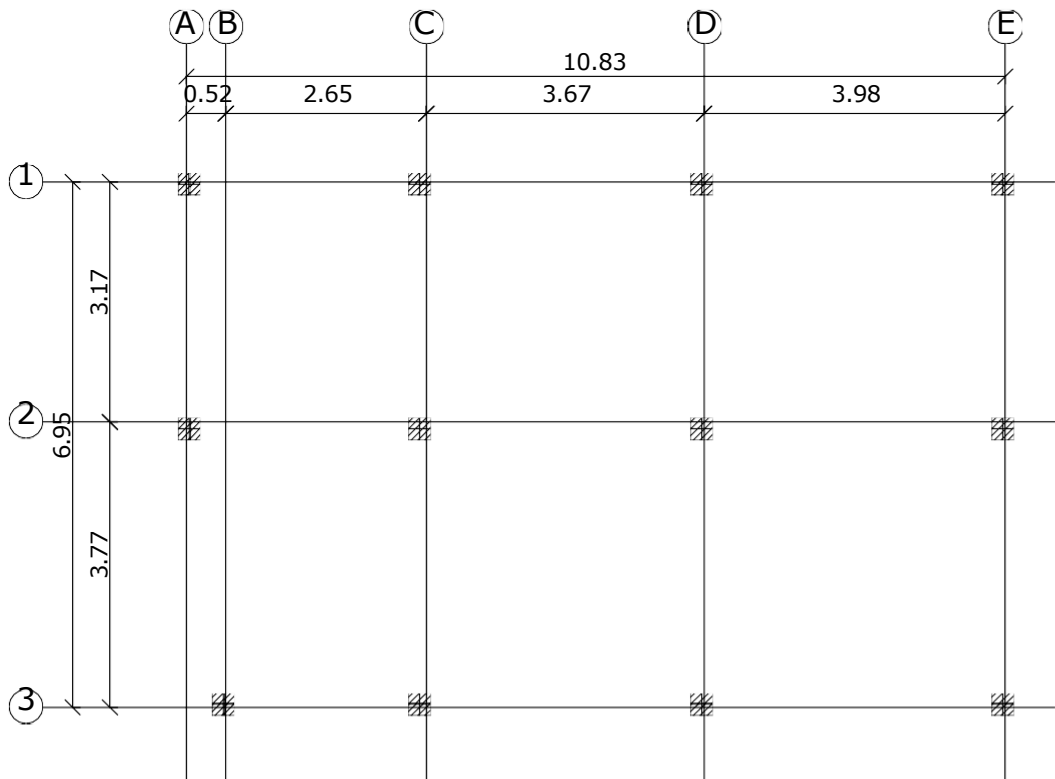
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G.A OF FLOOR PLAN



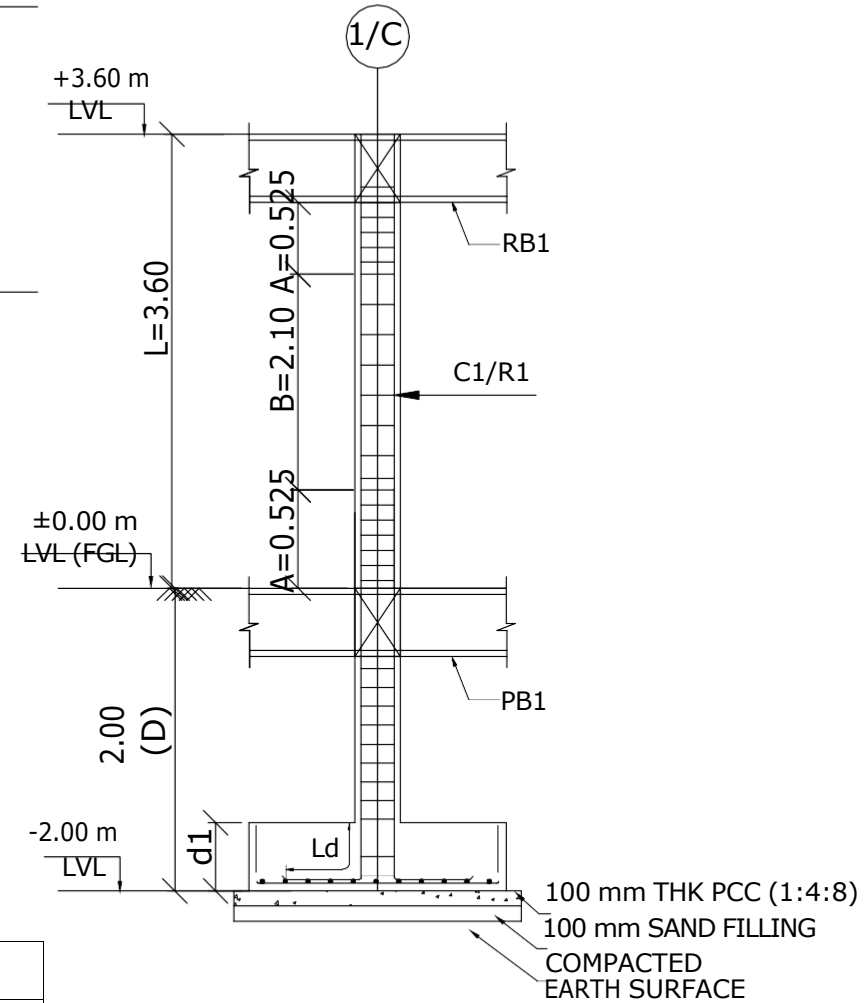
COLUMN LAYOUT



COLUMN MARKING LAYOUT

COLUMN REINF. DETAILS		
COLUMN SIZE	COLUMN C.S	SHAPE OF STIRRUPS
C1-R1 300 X 300 ● 4#-16Ø + ○ 4#-12Ø		

COLUMN REINFORCEMENT DETAILS					
COL TYPE	COLUMN SIZE(mm)	COL REIN.	NORMAL LINKS (B)	DUCTILE LINKS (A)	NO.OF COL
C1/R1	300 X 300	4#-16Ø+4#-12Ø	8Ø@150C/C	8Ø@100C/C	12



COLUMN SECTION

- NOTES :
- ALL THE DIMENSIONS ARE PROVIDED IN METER (m) UNLESS OTHERWISE SPECIFIED.
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  - THIS DRAWING SHALL NOT BE USED THAN THE PURPOSE MARKED/ISSUED.
  - HIGH YIELD STRENGTH DEFORMED BARS Fe 500 CONFORMING IS 1786-1985 TO BE USED WITH MINIMUM PERCENTAGE OF ELONGATION 14.5%.
  - THE GRADE OF CONCRETE M-30 (DESIGN MIX) CONFORMING FOR IS 456-2000 FOR ALL RCC WORK UNLESS OTHERWISE SPECIFIED.
  - MINIMUM CEMENT CONTENT SHALL NOT BE LESS THAN 320 kg/m<sup>3</sup> FOR M-30 CONCRETE.

- ADMITTURES SHALL BE ADDED WITH PERMISSION OF CLIENT.
- CLEAR COVER TO THE REINFORCEMENT ARE AS FOLLOWS
  - FOUNDATION - 50mm
  - COLUMN - 40mm
  - BEAM - 30mm
  - RCC WALL - 25mm
  - SLAB - 25mm
- STRUCTURE IS DESIGNED FOR GROUND FLOOR ONLY.
- LAPPING OF COLUMN BARS SHALL BE MIDWAY BETWEEN SLABS OF STAGGERED WITH LAP LENGTH NOT LESS THAN 50Ø.
- ALL PCC WORKS SHOULD BE CARRIED OUT WITH PCC 1:4:8 CONFORMING TO IS 456-2000.
- DESIGN MIX REPORT SHOULD BE GOT APPROVED BY ANNA UNIVERSITY/IIT MADRAS/PWD

13. THE 600M DIA PILE CARRYING CAPACITY IS 86 TONNES(31 M LENGTH PILE).
- NOTATIONS:
- SFR ——— SIDE FACE REINFORCEMENT
- E.F - EACH FACE
- E.G.L - EXISTING GROUND LEVEL
- Ø - DIAMETER OF THE BAR
- C/C - CENTER TO CENTER DISTANCE
- GL - GROUND LEVEL
- # - NUMBER BARS

CONSULTANT:

**SONNE INFRASTRUCTURE PVT. LTD.,**  
S-1, A, 2nd FLOOR, AMAR SINDUR COMPLEX,  
43- PANTHEON ROAD, EGMORE,  
CHENNAI - 600008  
Contact :044-28552445  
E-mail: sonneinfra@gmail.com  
www.sonneinfra.com

CLIENT NAME:

DEPARTMENT OF HORTICULTURE , KARNATAKA.

DRAWN BY : GS

CHECKED BY: AVM

DATE: 26.02.2024

DESIGNED BY: GS

APPROVED BY: MSLP

SIZE: A3

TENDER PURPOSE ONLY

REV.	REVISIONS	DATE	DRAWN	DESIGNED	CHECKED

ISSUED FOR:

☒ DPR ☐ TENDER ☐ INFORMATION ☐ APPROVAL ☐ CONSTRUCTION

PROJECT TITLE:

"RE - CONSTRUCTION OF BUS STAND UNDER PUDUCHERRY SMART CITY DEVELOPMENT LIMITED"

DRAWING TITLE:

MAINTENANCE SHED - COLUMN & PILE CAP LAYOUT & REINFORCEMENT DETAILS

DRAWING NO:

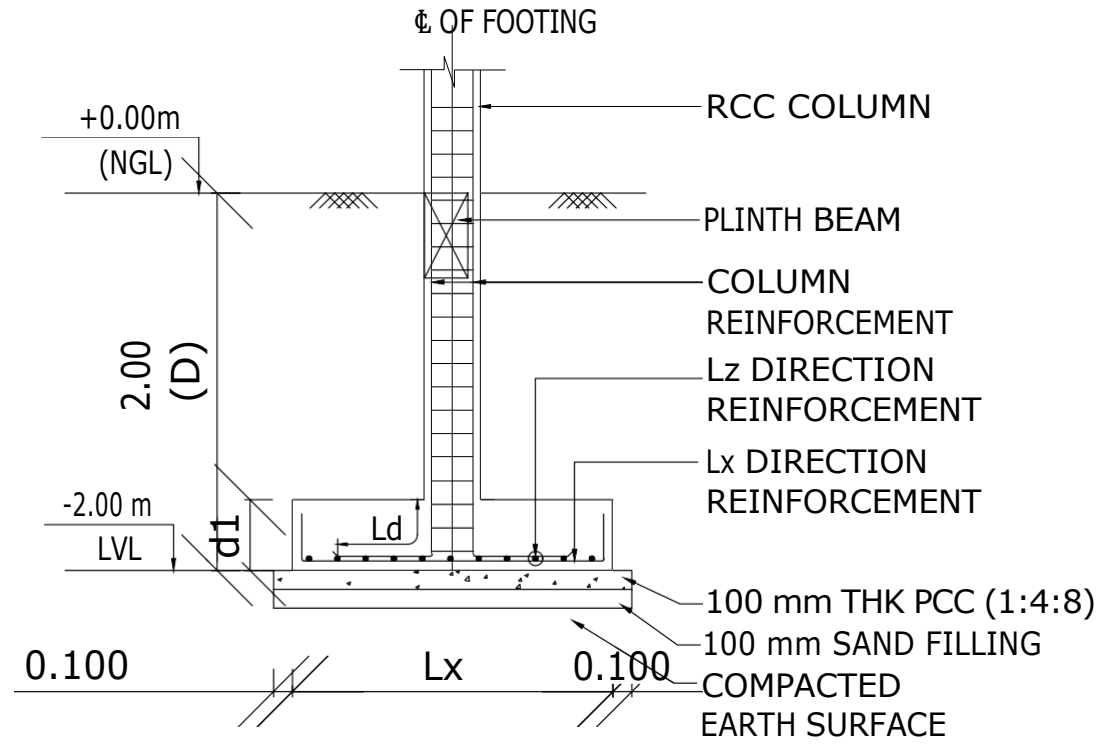
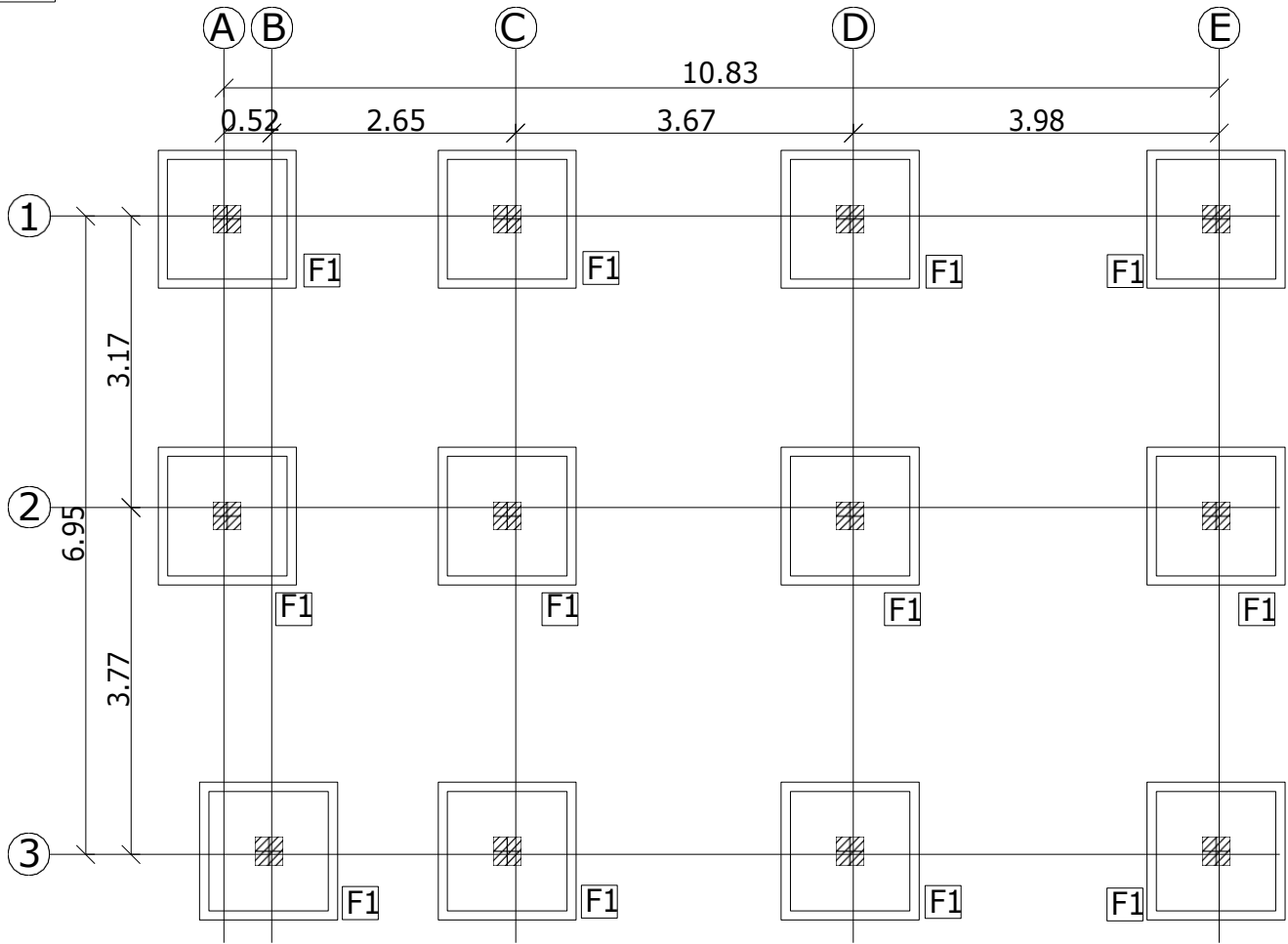
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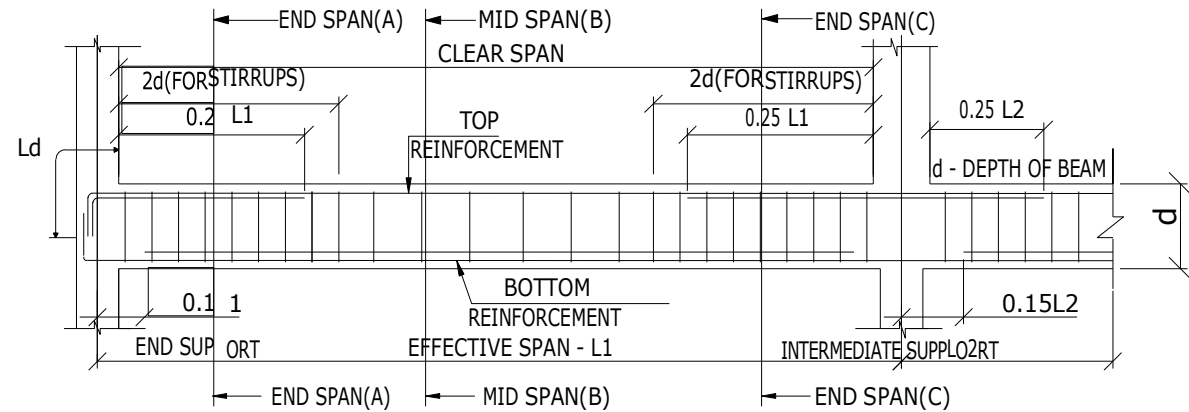
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PROJECT CODE: 473

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FOOTING SECTION



BEAM REINFORCEMENT

SCHEDULE OF FOOTING

FOOTING NAME	FOOTING SIZE Lx X Lz	D	d1	BOTTOM REINFORCEMENT		NOS
				Lx DIRECTION	Lz DIRECTION	
F1	1.30 X 1.30	2.00	0.350	10Ø@ 100 C/C	10Ø@ 100 C/C	12

NOTES :

- ALL THE DIMENSIONS ARE PROVIDE IN METER (m) UNLESS OTHER WISE SPECIFIED.
- DIMENSIONS SHALL NOT BE MEASURED FROM THE DRAWINGS, & ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
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- MINIMUM CEMENT CONTENT SHALL NOT BE LESS THAN 320 kg/m<sup>3</sup> FOR M-30 CONCRETE.

- ADMITURES SHALL BE ADDED WITH PERMISSION OF CLIENT.
- CLEAR COVER TO THE REINFORCEMENT ARE AS FOLLOWS

FOUNDATION	-	50mm
COLUMN	-	40mm
BEAM	-	30mm
RCC WALL	-	25mm
SLAB	-	25mm

- STRUCTURE IS DESIGNED FOR GROUND FLOOR ONLY.
- LAPPING OF COLUMN BARS SHALL BE MIDWAY BETWEEN SLABS OF STAGGERED WITH LAP LENGTH NOT LESS THAN 50Ø.
- ALL PCC WORKS SHOULD BE CARNED OUT WITH PCC 1:4:8 CONFORMING TO IS 456-2000.
- DESIGN MIX REPORT SHOULD BE GOT APPROVED BY ANNA UNIVERSITY/IIT MADRAS/PWD

- THE 600M DIA PILE CARRYING CAPACITY IS 86 TONNES(31 M LENGTH PILE).

NOTATIONS:

SFR	-	SIDE FACE REINFORCEMENT
E.F	-	EACH FACE
E.G.L	-	EXISTING GROUND LEVEL
Ø	-	DIAMETER OF THE BAR
C/C	-	CENTER TO CENTER DISTANCE
GL	-	GROUND LEVEL
#	-	NUMBER BARS

CONSULTANT:

**SONNE INFRASTRUCTURE PVT. LTD.,**  
S-1, A, 2nd FLOOR, AMAR SINDUR COMPLEX,  
43- PANTHEON ROAD, EGMORE,  
CHENNAI - 600008  
Contact : 044-28552445  
E-mail: sonneinfra@gmail.com  
www.sonneinfra.com

CLIENT NAME:

DEPARTMENT OF HORTICULTURE, KARNATAKA

DRAWN BY :

GS

CHECKED BY:

AVM

DATE:

26.02.2024

DESIGNED BY:

GS

APPROVED BY:

MSLP

SIZE:

A3

TENDER PURPOSE ONLY

REV.	REVISIONS	DATE	DRAWN	DESIGNED	CHECKED

ISSUED FOR:  
☒ DPR ☐ TENDER ☐ INFORMATION ☐ APPROVAL ☐ CONSTRUCTION

PROJECT TITLE:  
"RE - CONSTRUCTION OF BUS STAND  
UNDER PUDUCHERRY SMART CITY  
DEVELOPMENT LIMITED"

DRAWING TITLE:  
MAINTENANCE SHED- BEAM & SLAB  
LAYOUT & REINFORCEMENT DETAILS

DRAWING NO:  
SIPL-PDY-22-473-ST- 10

SHEET NO:  
10

PROJECT CODE:  
473

**DIESEL GENERATOR** - Supplying, installing, testing and commissioning of 160 kVA/120 kW Diesel Generator set with following specifications. Power rating as per standard reference condition as per-BS 5514/ISO 3046/ ISO 8528 & IS 1002/ISO 3046 Generator set specification.

Engine: Diesel generating set are rated at 1500RPM and conform to ISO 8528 specifications. The engines are radiator cooled, four stroke and multi cylinder, conforming to ISO 3046. The scope of supply includes: Electrical starter motor 12V DC Battery charging alternator, Bosch fuel system with mechanical governor, A1 Class. Spin-on lube oil filter, Spin-on dual fuel filter with water separator, Turbocharger, Charge air cooler, Silencer (Hospital grade), Dry type air cleaner, Shutoff coil, Flywheel and flywheel housing, First fill of lube oil and coolant, Safety for low lube oil pressure, Safety for high water temperature, Permissible overload of 10% for one hour in 12 hours of operation.

Capacity of Fuel Tank: Fuel tank suitable for 8 hours of operation.

Alternator: Alternator is suitable for operation at 1500 RPM, 415 V, 0.8 pf (lag) suitable for 50 Hz, 3 phase, 4 wire systems, conforming to IS/IEC 60034-1. The Alternator is brush less type, screen protected, revolving field, self excited, self regulated through an AVR. The alternator shall have  $\pm 1.0\%$  Voltage regulation (max) in static conditions- IP: 23 protections with insulation class F&H.

Mounting arrangement: Engine and alternator are mounted on a common MS fabricated base frame with AVM pads.

Control Panel: The control panel is manufactured with 14/16 gauge CRCA sheet and is powder coated for weather-proof and long lasting finish. The control panel consists of the following parts:- PS0500 Controller, Aluminium bus bars with suitable capacity within/outgoing terminals, Indicating IA for 'Load On' and 'Set Running', Instrument fuses duly wired and ferruled, MCCB of suitable rating with overload and short circuit protections.

Genset Controller: microprocessor based generator set monitoring and control system. The control provides a simple operator interface to the generator set, manual and remote start/ stop control, shutdown fault indication, and an LCD hour counter. The integration of all functions into a single control system provides enhanced reliability and performance compared to conventional generator set control systems. This control has been designed and tested to meet harsh environment in which gensets are typically applied. Features, Functions, protections 16 character x 2 line alphanumeric LCD display with LED Backlight.

Operator interface, Provide a record of most recent fault conditions. Fault history stored in the control non volatile memory, Provide Alternator Data. Voltage (1 ph or 3 ph line to line and line to neutral voltage, Current (1 ph or 3 ph), kVA (3 ph and total), Frequency, Provide Engine Data, Starting battery voltage, Engine running hours, Engine Temp, Engine oil pressure, Control includes provision for Service adjustment and calibration of DG control functions, Voltage, frequency selection, Configurable input and output set up, Meter calibration, Engine controls, Power Start operates on 12 VDC batteries, -Auto start mode accepts a ground signal from remote devices to automatically start the DG set The remote start will also wake up the control system from sleep mode.

Engine Starting -The control system supports automatic engine starting, Primary and back up start disconnects are achieved by battery charging alternator feedback or main alternator output frequency. Controller provide configurable time delay of 0-300 sees to start after remote start signal and time delay

of 0- 600secs prior to shut down after stop signal. Sleep mode increase battery life. Configurable current settings from low to minimize current draw when genset is not working. Engine Protective functions include, Configurable alarm output, Emergency stop: Annunciated whenever an emergency stop signal is received by the control. Low lube oil pressure warning and Shutdown, High engine water temp warning / Shutdown, Low coolant temp warning, Sensor failure indication, Low and high battery voltage warning, Weak battery warning, Fail to start shut down, Cracking lockout: Control will not allow the starter to engage or to crank the running engine Cyclic cranking: Configurable for the number of starting cycle, (1 to 7) and duration of crank and rest periods. Alternator Protective functions includes, - High and Low AC voltage shut down, Under and Over frequency shutdown / warning, Loss of sensing voltage input shut down.

Acoustic enclosure: The acoustic enclosure shall be made of 1.6 mm thick CRCA sheets in suitable approved shade and a structural/ sheet metal base frame painted in black. The walls of the enclosure are insulated with fire retardant foam so as to comply with the 75dBA at 1 m sound levels specified by Ministry of Environment & Forest The enclosure has the following features: Specially designed to meet stringent MOEF/CPCB norms of 75dBA @ 1 m at 75% load under free field conditions, Two point lifting for easy handling at customer site, Designed to have optimum serviceability, Air inlet louvers specially designed to operate at rated load made on special purpose CNC machines for consistency in quality and workmanship, Powder coated for long lasting service life and superior finish, With UV resistant powder coating, can withstand extreme environment.

Use of special hardware for longer life, Insulation material meets exacting IS 8183 specifications for better sound attenuation, Flush styling - no projections, Fluid drains for lube oil and fuel, Fuel filling point inside the enclosure. The complete set shall have sufficient safety and adhere to NEC, NBC 2016, IEC, CPWD specifications, PCB norms and KSGEI Acts and Rules.