

INSTALATION OF 250 kva & 20 kva D.G SET
FOR OFFICE OF NATIONAL
HORTICULTURE BOARD, PLOT NO.-85,
SECTOR-18, INSTITUTIONAL AREA,
GURGAON

TENDER DOCUMENT

With bill of quantities

Architects :-

Prof. Mandeep Singh
School of Planning and Architecture

Studio Address;
305/4, Preet Vihar Comm.Centre,
New Delhi-110 092

Owner:-

National Horticulture Board
Plot No.-85, SECTOR-18,
Institutional Area,
Gurgaon.

N.B.

The work shall be carried out under the Supervision of ELECTRICAL CONSULTANT of the Architect as his representative and the Electrical consultant's views and instructions shall be taken as those from the ARCHITECT.

- 1**
 - (a) Notice inviting tender**
 - (b) Terms for bidding tender**
 - (c) Form of tender and annexure**

NOTICE INVITING TENDER

The Item rate tender is for complete work including all materials, installation etc for the 250 kva & 20 kva DG SET.

1. Sealed item rate tenders in the prescribed forms are hereby invited from the competent contractors by and on behalf of **National Horticulture Board, Plot no.-85, SECTOR-18, Institutional Area, Gurgaon** for proposed **Installation of 250 kva & 20 kva D.G set at National Horticulture Board, Plot no.-85, SECTOR-18, Institutional Area, Gurgaon** Time allowed for completion is as mentioned in the Appendix to conditions of the contract is **1month**
2. Prescribed tender documents consisting of specifications, the Schedule of quantities of various classes of work to be done and set of conditions of contract to be complied with by the person whose tender may be accepted, can be purchased from the office of the owner **National Horticulture Board, Plot no.-85, SECTOR-18, Institutional Area, Gurgaon** on any working day between 11.00 A.M. 4.00 P.M. by **2011** against the non refundable cash payment of Rs 500/-.
3. Tenders should be submitted in person/by hand, in sealed cover with the name of work written on the self addressed envelope to the Employer **National Horticulture Board, Plot no.-85, SECTOR-18, Institutional Area, Gurgaon** latest by 3.00 P.M., on **2011**, and will be opened on the same day by 5.00 P.M. in the presence of the tenderers or their authorized representatives.
4. Tenderers must get acquainted with proposed the work and study the drawings, designs, specifications, scope of works, conditions of contract and other conditions carefully before tendering. No request for any change in rates or conditions for want of information on any particular point shall be entertained after receipt of tenders.
5. The tenderers should quote rates for every item and write rates very clearly to avoid discrepancies. The bill of quantities is approximate only and liable to vary.
6. Tenderers must submit with their tender, a crossed demand draft **Rs. 10,000/-** (Rs. Ten thousand only) in favor of the Owner **National Horticulture Board, Plot no.-85, SECTOR-18, Institutional Area, Gurgaon** against Earnest Money. Tenders, which are not accompanied with Earnest Money, shall not be considered.

OTHER TERMS AND CONDITIONS FOR BIDDING THIS TENDER ARE ANNEXED.
THIS NOTICE INVITING TENDER FORMS PART OF THE CONTRACT DOCUMENT.

M/s. Prof. Mandeep Singh (SPA)
305, Sincere Tower, 4, Preet Vihar,
Comm. Centre, New Delhi – 110 0092.

(Architect)

National Horticulture Board
Plot No-85, SECTOR-18,
Institutional Area, Gurgaon.

(Employer)

- NOTES: 1 Incomplete and conditional tenders are liable to be rejected.
- 2 Employer is not bound to accept the lowest tender and reserves the right to accept or reject any tender without assigning any reason.
 - 3 Tenders shall remain open for acceptance for a period of 30 days from the date of opening of tender
 - 4 SFAC stands as abbreviated for Small Farmers' Agri-business Consortium
 5. See also the terms of bidding tender as follow:-

TERMS FOR BIDDING TENDER

1. CONTRACTOR TO SUBMIT INFORMATION

The contractor must be well experienced in the concerned field and capable to handle the work in all respects. The contractor shall submit the following information.

- 1.1 Certification of his registration and classification.
- 1.2 List of equipment owned by the company, which shall be employed in the works under this contract.
- 1.3 References of works done over the past 3 years.
- 1.4 Declaration and undertaking on prescribed Performa.

2. CONTRACTOR'S ACQUAINTANCE

The submission of this bidding document by the contractor will be conclusive evidence to the fact that:

- 2.1 The Contractor is fully satisfied to the nature and scope of works to be done.
- 2.2 The Contractor is fully acquainted with the site conditions, and the scope and design of civil interior works with which the execution of electrical works is to be co-ordinated
- 2.3 The contractor fully understood and accepted the conditions set forth in these documents and all other factors affecting his performance in case awarded the contract.

3. SIGNING OF BIDDING DOCUMENT

These bidding documents must be signed by the principle of the Contractor's firm who is registered as such or else by his representative identified by a letter of authority signed by him and attested by another executive of the Contractor's firm.

4. CONTRACT PRICE

The contract price at the time of signing this contract is assumed to be the Bidding Price (or as negotiated) but eventually the Contract Price shall be the amount computed on the basis of the rates quoted in the Bill/Schedule of Quantities multiplied by the respective quantities of works executed at the completion of the works, however subject to the note hereunder.

Note: - The Employer reserves the right to make changes in the Bill of Quantities by addition and omission of items listed in the Bill of Quantities and to introduce new items at rates to be negotiated or to be decided as per the terms of the contract. The bidding rates shall be firm for the duration of the contract.

5. SALES TAX/OTHER DUTIES & TAXES

The rates shall include Sales Tax etc., and or any other taxes levied on materials/services in respect of this contract shall be payable by the contractor and employer National Horticulture Board will not entertain any claim, whatsoever, in these respect.

6. SCOPE OF WORK

The Employer shall have the right to increase or decrease the scope of work. No claim or compensation shall be admissible due to such variation.

7. CONDITIONAL TENDER BY CONTRACTOR

Conditional tenders will not be accepted.

- 8 VALIDITY OF TENDER BID
Tenders shall remain open for acceptance for a period of 30 days from the date of opening of the tenders. If any tenderer withdraws his tender before the said period or makes any modifications in the terms and conditions of the tender which are not acceptable to employer National Horticulture Board, Plot no.-85, SECTOR-18, Institutional Area, Gurgaon then the employer National Horticulture Board, Plot no.-85, SECTOR-18, Institutional Area, Gurgaon shall without prejudice to any, other right or remedy be at liberty to forfeit the entire amount of the earnest money amount of earnest money absolutely and the decision of the employer National Horticulture Board, Plot no.-85, SECTOR-18, Institutional Area, Gurgaon in this behalf shall be final and binding on the tenderer.
- 9 ACCEPTANCE OF TENDER
The acceptance of a tender will rest with employer National Horticulture Board, Plot no.-85, SECTOR-18, Institutional Area, Gurgaon who do not bind themselves to accept lowest tender and reserve to themselves the authority to reject any or all the tenders received without assigning any reasons. They also reserve the right accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rates quoted. All tenders in which any of the prescribed conditions are not fulfilled or are incomplete in any respect or there is any correction not duly initialed by the tenderer are liable to be rejected.
- 10 CONTRACTOR'S LOCAL CONTACT
On acceptance of the tender, the name of the accredited representatives of the contractor, who would be responsible for taking instructions from the Architect and/or his representative shall be communicated to the Architect, and the employer. If the Head Quarter of the successful tenderer is at the place other than, Gurgaon he shall have a duly authorized agent in Gurgaon from the date of commencement of the work until the work is virtually completed. Such agent shall be authorized to act on behalf of the successful tenderer. Any notice under the contract shall be deemed to have been served on the successful tenderer if served upon such agent or sent by registered letter at his address in Gurgaon. Such agent shall not be changed and shall not leave Gurgaon during the period of the contract without the prior approval of the Architects, if the Architect shall require the successful tenderer to carry out the rectifications of defects under the terms of the contract during "defect liability period", the successful tenderer shall have same or another duly authorized agent in Gurgaon while such rectifications are being carried out.
- 11 SIGNING OF AGREEMENT
The successful tenderer shall sign the necessary contract documents within Six days or the time specified in the letter communicating the acceptance of the tender. In case of delay the earnest money may be forfeited and the tender cancelled or the contract enforced as per terms of tender and the invitation to tender, and the tenderer shall thus be bound by the conditions of contract even though the formal agreement has not been executed and signed within the specified time by tenderer.
- 12 COMMENCEMENT & COMPLETION OF WORK
The time allowed for completion of work will be one month The successful tenderer will start the construction within Six days of communicating the acceptance of tender. If the contractor selected for the work fails to sign the formal agreement within Six days from the date of intimation or fails to start work within Six days from the date of work order, then the employer National Horticulture Board, Plot No.-85, SECTOR-18, Institutional Area, Gurgaon shall, without prejudice to any other right or remedy, be at liberty to forfeit the entire amount of earnest money absolutely. The decision of employer National Horticulture Board, Plot No.-85, SECTOR-18, Institutional Area, Gurgaon in this behalf shall be final and binding on the tenderer.

13 **EXTENSION OF TIME**

Extension of time beyond the stipulated date of completion of works shall be granted only on account of following occurrences affecting the project area and/or any delay in completion of basic civil works, with which the electrical work is to be coordinated

-
- 1. Manifested civil disturbances.
- 2. Manifested dislocation of economic nature.
- 3. Natural calamities
- 4. Instruction to suspend works issued in writing by the Employer/Architect for any reason.

The extension of time to be granted on account of the above shall have the sole discretion of the Employer.

14 **SECURITY DEPOSIT**

From the Contractor bills whose tender is accepted, a deduction of **10 % of gross value of executed work** against security deposit will be made from each running bill. The earnest money after the award of work will be treated as security deposit of the successful tenderer, and the said amount would be adjusted towards security deposit in the running bills. This security deposit will be limited to **Rs. 5,000/-** maximum fund.

15 **UNDERTAKING/DECLARATION**

The contractor should give the undertaking and declaration on the prescribed performa, regarding his well conversance with the best construction practice.

16 **OTHER IMPORTANT CONDITIONS OF CONTRACT**

16.1 **TIME OF COMPLETION** The contractor shall furnish to the Employer the Schedule as C.P.M. and/or Bar Chart, for the complete project (considering the progresses of connected civil works) before the commencement of work. Maximum time allowed for completion of the work is one month.

16.2 **FACILITIES TO THE CONTRACTOR** Facilities to be given by the employer to the contractor are Electricity and water connection etc., at any one point at site, free of cost.

16.3 **DEFECTS LIABILITY** Any defects developed/noticed within 'Defects Liability Period' of 12 months after the completion of work, due to the bad workmanship, negligence of the workers, (but not due to the material used as supplied by the owner, being under-specification) or otherwise where responsibility comes on the rate-rate contractor as per Indian Contract Act, the Contractor is liable to bear the expenses to repair or replace the defects. The cost of materials used in rectifying the defects shall also be borne by the contractor.

16.4 **CLEARING OF SITE ON COMPLETION** Contractor shall remove all the unnecessary materials from the vicinity of the project and dump the same at the location decided by the Employer in consultation with the Architect. He shall clean the site, shrubs, and debris and shall make all the area good to the satisfaction of the Employer, and shall keep the site clean during the construction period as well.

16.5 **COMPENSATION AND ACTION IN CASE OF BAD WORKMANSHIP** If it shall appear to the Architect/Employer, that any work has been executed with unsound or unskillful workmanship, the contractor at his own cost shall rectify or remove and reconstruct the work so specified in whole or in part as the case may require, within the period intimated by the Architect, failing to do so within the above period, the contractor shall be liable to pay compensation @ 1% on the estimated amount put to tender for every date exceeding 10 days. Details shall be referred as per CPWD norms.

16.6 **SECURITY DEPOSIT** of the successful tenderer will be forfeited if he fails to comply with any of the condition of contract.

16.7 **DAMAGE TO WORK** The contractor shall be responsible for all damages except damages caused by riots, civil war, earth quake, thunder storms, design failure and by aircraft, till the work is handed over.

16.8 **QUALIFIED ENGINEER FOR SUPERVISION OF WORK** Where the contractor is not a qualified engineer, he shall at his own expenses, employ a degree holder engineer, qualified from Government recognized institution or a Diploma holder in engineering from a Government Recognized institution with five to six years experience of work throughout the duration of contract and ensure his all time availability at site.

16.9 **PAYMENT OF INTERIM CERTIFICATE TO CONTRACTOR** All such payments made on Interim certificates shall be regarded as payment by way of an advance against the final payment only and not as a payment for work actually done and completed and shall not include the repairing of bad, unsound, imperfect, or unskilled work to be removed and taken away and reconstructed or erected, or be considered as an admission of the due performance of the contract or any part thereof in any respect of the accruing of any adjustment or the accounts or otherwise or in any other vary or effect the contract.

Part payment (stage wise to be made to the contractor) shall be settled between the contractor and the employer as mentioned in the payment schedule.

16.10 **ACCIDENT WITH LABOUR AT SITE** In case of any accident at site due to negligence of the contractor, he shall pay all the damages etc., and bear all the responsibility details as per CPWD norms). To affect this the contractor shall get the group insurance of labor engaged in the constructions work etc., at the site.

16.11 **NO DIRECT PAYMENT TO THE LABOUR** In case of any dispute between contractor and the owner, the owner shall not be liable to make any payment to the laborers and the Owner has got all the right to ensure that the payment to the laborers being made regularly (details as per CPWD norms).

16.12 **ESCLATION** No labor Escalation will be given under any circumstances.

16.13 **TAX DEDUCTIONS T.D.S.** will be deducted as per the Income Tax rules as applicable.

16.14 **CANCELATION OF CONTRACT FOR SUBLETTING, INSOLVENCY ETC.,**

The Employer, in consultation with the Architects may without prejudice, cancel the contract in any of the following cases: -

If the Contractor being an individual or if a firm, any partner thereof shall at any time be adjudged insolvent or have received order or orders for administration of his estates made against him or shall take any insolvency Act., for the time being in force or make any conveyance or assignment of his effects or composition or arrangements for the benefit of his creditors or purport to do so, or if any applications be made any insolvency Act for the time being in force the sequestration of his estate or if a trust deed be granted by him on behalf of his creditors: -

Assigns, transfers, subjects or attempt to assign, transfer or subject, any portion of the work without the written permission of Architect/Employer. Whenever the Architect/Employer exercises his authority to cancel the contract under the conditions, he may complete the work by any means at the Contractor's risk and cost. The security deposits and other contract money will be at the absolute disposal of the Architect/Employer.

16 GENERAL

This tender document must be filled in English and all entries to be filled must be made by hand written ink

The important APENDIX referred to in the 'General Conditions of Contract' is reproduced below: -

1. Date of commencement: :Within **Six** days from the date of letter of Intent.

- | | | | |
|-----|---|---|---|
| 2. | Period of Completion | : | One month |
| 3. | Defects liability period | : | 12 months from the date of virtual completion |
| 4. | Liquidated damages: | : | Rs. 1,000/- per day subject to max. of Rs. 20,000/- |
| 5. | Minimum value of work for interim certificate | : | Rs. 50, 000/- (Rs Fifty Thousand) or 15 days whichever is later. |
| 6. | Security deposit | : | 10 % subject to. Maximum of Rs. 50000/- |
| 7. | Period of Honoring Certificate | : | 20 days. |
| 8. | Installment after virtual completion: | : | 50% of total security deposit. |
| 9. | Rate of interest for delayed payment. | : | Nil |
| 10. | Period of final measurement | : | 1 ½ months from the date of virtual completion of work |
| 11 | Earnest Money | : | Rs. 10,000/- (Rupees Two thousand). |

17 PROJECT

The project is for complete installing of **250 kva & 20 kva silent D.G set** with accessories and civil works as per specification B.O.Q and instruction. (subject to amendments and modifications as required) with the tender documents as prepared by the Architect Prof. Mandeep Singh (SPA), 4/305, Community Centre, Preet Vihar New Delhi , and his electrical specialist.

The employer/owner in consultation with the Architect reserves the right of awarding any part of the work to any other agency, if it prefers so. The employer also reserve the right to change the scope of work or omit or add or modify any work without any prejudice to the contract

Rates quoted in the tender are for finished work at site and shall include all charges for scaffoldings, centering, ., all tools and plants required, sheds for storage of materials etc., complete including payment of sales tax or other taxes and royalties

20. GENERAL

The site after completion of the work is to be handed over clean and the work include removal of unserviceable and disposal of Malba including cartage to the dumping ground.

The bidding contractor must make himself familiar and acquainted with the site as also the scope and design of civil interior works with which the electrical works are to be co-coordinated.

THIS NOTICE INVITING TENDER AND THESE TERMS AND CONDITIONS OF BIDDING TENDER SHALL FORM PART OF CONTRACTUAL AGGREMENT.

(Contractor)

(Employer)

From:

.....
.....
.....

Pan No.....

FORM OF TENDER

Dated: -

To,

**National Horticulture Board,
Plot no.-85, SECTOR-18,
Institutional Area,
Gurgaon.**

Gentlemen,

1. Having examined the all of tender documents, Form of Agreement, Conditions of Contract Specifications, Bill/Schedule of Quantities and Drawings for the installation **250 kva & 20 kva DG set National Horticulture Board, Plot no.-85, SECTOR-18, Institutional Area, Gurgaon** and having visited and examined the site of the Works or caused it to be visited on our behalf by a competent and reliable person and having acquired all requisite information relating thereto as affecting this Tender, We, the undersigned, hereby offer to construct, complete and maintain the proposed works in conformity with said Documents and Drawings at the rates or prices inserted in the Schedule/Bills of Quantities herewith for the sum of Rupees _____ (Rs. _____) or such other sums as may be ascertained with the said documents.
2. We have inserted in the Bill of Quantities attached to this Tender and other Contract Documents, all the required and relevant information and enclose herewith all the information requested in the Notice inviting Tender and other Documents.
3. We undertake if this Tender is accepted, to immediately make all necessary preparations and commence the Works within Six days of the instruction to commence and to be completed from the last day of the aforesaid period. This period stated allows for all Sundays and Public Holidays and other non-working, days including any occurring, due to inclement weather.
4. We agree to abide by the Tender for the period of 30 days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period without any additional cost.
5. As required in the Notice Inviting Tender we enclose a Demand Draft No. _____ drawn on _____ (Bank) at _____ (city/branch) of **Rs. 1,000/-** (Rs. One thousand only) with Tender against earnest money.
6. We undertake in the event of this Tender being accepted to execute and Agreement in the form annexed hereto Unless and until such an Agreement is executed, our Tender, together with your written acceptance thereof, shall constitute a binding Contract between us.
7. We understand that you are not bound to accept the lowest or any tender you may receive.
8. Required information, and declaration is attached herewith.

Date: _____

Signature & Stamp of CONTRACTOR
LIST OF WORKS EXECUTED/UNDER EXECUTION
OVER THE PAST THREE YEARS

Sr.	Name of work	Name of Owner	Amount of Work
(1)	(2)	(3)	(4)

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Signature & Stamp of Contractor

LIST OF EQUIPMENT OWNED BY THE CONTRACTOR, WHICH
MAY BE EXPLOIED ON THE WORK UNDER THIS CONTRACT.

Sr. No.	Type of Equipment	Details regarding numbers, make model capacity etc.
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

Signature & Stamp of CONTRACTOR.

Name of Contractor / Company: _____

Registered Address: _____

Present Address : _____

REGISTERED DETAILS

Sr. No.	Agency/Govt. Deptt. With Which registered	Classification of Registration	Date of Registration
(1)	(2)	(3)	(4)

Company details;

1. If individual ownership, give name, father's name Address and PAN No.
2. If partnership, give names and addresses of the Partners with percentage of share for each partner
2. If a limited company (private or public) give the Names and addresses of the directors. And copy of Memorandum & Article of Association.

Signature & Stamp of CONTRACTOR

DECLARATION BY CONTRACTOR

I, hereby solemnly declare that I have requisite construction experience, and am well conversant with the best construction practices. I understand that the information provided is for guidance only and is in no way comprehensive and conclusive. I affirm that intention of the contract is to execute work in the best engineering traditions and practices and I shall take the meaning implied in the spirit and not in letter. If cash compensation is not claimed it shall mean, no claim.

Following conditions, assumptions, conclusions are agreeable to me without reservations.

1. I have studied carefully Tender Document and understand the requirements.
2. I have visited the site and satisfied myself with site conditions of my nature and magnitude.
3. I have discussed with consultants about all possible construction problems sequences, requirement particularly that of coordinating with the Civil Works Contractor, and these are noted accordingly.
4. To the best of my knowledge rates are quoted are balanced rates, based on availability, losses and other requirements of labor resources etc. I agree that consultants have every right to ask for detailed analysis of any or all rates, before or after completion of works. Any item can be taken away at the consultants/ employer discretion.
5. I also agree that employer, on the advice of the consultants can take away work to give it to other contractors, specialized agencies or omit.
6. I certify that I am aware of all statutory, local Government/executive authorities, rules, and laws. Taxes, Sales taxes, Customs octroi or any other burden such as labor escalation during construction period and I have provided for these in my rates.
7. I certify that I am capable of imagining construction problem in execution, proper sequence of construction, restriction on working unavoidable delays holds up or stoppage or payment problems and assure my whole hearted co-operation to solve these problems.
8. I undertake to check the accuracy, correctness and workability of items to be executed and report in advance, to employer/consultants before commencing work and not only to make claim after completing the work. For this reason. I shall employ a thoroughly experienced qualified and competent staff.
9. The usual meaning of definitions, works, vocabulary used in tender documents is known to me and I shall not dispute them. I accept the authority and powers of Employers to act and decide in any manner so as to safeguard their interest.

(Contractor)

2.
 - (a) **Article of Agreement**
 - (b) **General conditions of Contract**
 - (c) **Appendix Schedule.**
 - (d) **Special conditions of Contract.**

CONTRACT AGREEMENT

ARTICLES OF AGREEMENT

Made at _____

On this _____ day of _____ 2011.

BETWEEN _____
(Hereinafter called the '**EMPLOYER**') on the one part

AND _____

Whose registered office is situated at _____

Hereinafter called the '**CONTRACTOR**' on the other part.

WHEREAS the Employer is desirous of constructing

(Hereinafter called the '**WORK**') at _____

and has caused Drawings, Specifications, Schedule of Quantities describing the work to be done, to be prepared by or under the directions of his Architects

PROF. MANDEEP SINGH (SPA) 305 Sincere Tower, 4 Preet Vihar,

Commercial Centre, New Delhi – 110 092.

AND WHEREAS the contractor has supplied the Employer with a priced copy of said Schedule / Bill of Quantities.

AND WHEREAS the said Drawings, Specifications, Priced Schedule/Bill of Quantities have been signed by or on behalf of the parties.

AND WHEREAS the Contractor has deposited an Earnest Money of Rs. _____

With the Employer for the due performance of this Agreement. This amount is to be adjusted in the Security Deposit in terms of the Conditions of Contract.

NOW IT IS HEREBY AGREED AS FOLLOWS: -

1. For the considerations hereinafter mentioned, the Contractor will, upon and subject to the Conditions annexed, carryout and complete the work shown upon the Contract Drawings, Specifications and described by or referred to in the Schedule of Quantities and in the said Conditions; provided that the Employer shall

have the right to revise, modify, alter, add or omit any part of work in accordance with the conditions of Contract.

2. The Employer shall pay the Contractor the Contract Amount for the work done or such other sum as shall become payable at the times and in the manner hereinafter specified in the said conditions.
3. **The ARCHITECT** in the said conditions shall mean Prof. Mandeep Singh (SPA) and in the event of this death or ceasing to be the Architect for the purpose of this Contract, such other person as the Employer shall nominate for that purpose; provided always that no person subsequently appointed to be Architect under this Contract shall be entitled to disregard or over-rule any certificate, or opinion or decision or approval or instruction given or expressed by the Architect for the time being.
4. **'ENGINEER OR WORKS' or 'SITE ENGINEER'** shall mean a person or firm appointed and paid by the Owner Employer, and acting under the instructions of the Architect for supervision, inspection, checking and measuring the work at site, and keep the records of works, and progress and payments relating to this contract.
5. **AGREEMENT** shall comprise of and include conditions of Tender (NIT), the Contract, General Conditions and appendix thereto special conditions, Drawings (including subsequent details to be issued during execution) specifications, priced schedule of quantities and any other document, which the parties agree here-in-after, and all the aforesaid documents shall be read and construed as forming part of this agreement and the parties as hereto shall respectively abide by submit themselves to the conditions and perform the agreement on their part respectively in such conditions contained.
6. ANY DISPUTE arising out of or in any connection with this agreement shall deem to have arisen in **GURGAON** and only the courts in **GURGAON** shall have jurisdiction to determine the same.

WITNESS WHEREOF the parties here to have hereunder set there hands.

Signed by _____

For and on behalf of owner/employer M/s. _____

Signed by _____

For and on behalf of Contractor M/s. _____

In the presence of

1. Name and address _____

2. Name and address _____

GENERAL CONDITIONS OF CONTRACT

Definition & Interpretations

The conditions herein before referred to

1. In constructing these Conditions, and the Specification, Schedule of Quantities, and Contract Agreement, the following words shall have the meaning herein assigned to them, except where the subject or context otherwise requires.
 - (a) “Employer” shall mean _____ and shall include his (their) legal representative/representatives, assign/s or successor/s.
 - (b) “Contractor” shall mean _____ and include his (their) legal representative/s assign/s or successor/s.
 - (c) “Site” shall mean the site of the contract works including any building and creations thereon and any other land (inclusively) as aforesaid allotted by the Employer for the contractor’s use.
 - (d) “This contract” shall mean the Articles of Agreement, the General and special Conditions, the Appendix, the Schedule of Quantities and/or Specification, attached hereto and duly signed.
 - (e) “Notice in writing” or written notice shall mean a notice in written, typed or printed characters sent (unless delivered personally or otherwise proved to have been received) by registered post to the last known private or business addressee or registered office of the addresses or registered office of the addresses and shall be deemed to have been received when in the ordinary course of post it would have been delivered.
 - (f) “Act of Insolvency” shall mean any act of insolvency as defined by the country or state legislation in this respect.
 - (g) “Net Prices” If in arriving at the Contract Amount the contractor shall have added or deducted from the total of the items in the Tender any sum, either as a percentage or otherwise, then the net price of any item in the Tender shall be the sum arrived at by adding to or deducting from the actual figure appearing in the Tender as the price of that item a similar percentage or proportionate sum. Provided always that in determine the percentage or proportion of the sum so added or deducted by the Contract or the total amount of any Prime Cost items and provisional sums of money shall be deducted from the total amount of the Tender. The expression “net rates” or “net prices when used with reference to the Contract or accounts shall be held to rates or prices so arrived

Words importing persons include firms and corporation, words importing the singular only also include the plural and visa versa where the context requires.

**Architect's Contract/
Instructions**

2. The Contractor shall carry out and complete the said work in every respect in accordance with this contract and with the directions of and to the satisfaction of Architect. The architect may in his absolute discretion and from time to time issue further Drawings and/or written instructions, details, directions and explanations which are hereafter collectively referred to as "Architect's Instructions" in regard to :-
- (a) The variation or modification of the design, quality or quantity or works or the addition or omission or substitution of any work.
 - (b) Any discrepancy in the Drawings or between the Schedule of Quantities/s and/or Drawings and/or Specification
 - (c) The removal from the site of any materials brought thereon by the contractor and the substitution of any other material therefor.
 - (d) The remove and/or re-execution of any works executed by the contractor.
 - (e) The dismissal from the work of any persons employed thereupon.
 - (f) The opening up for inspection of any work covered up.
 - (g) The amending and making good of any defects under Clause 19.

The Contractor shall forthwith comply with and duly execute any work comprised in such Architects instructions provided always that verbal instructions directions and explanations given to the contractor or his representative upon the works by the Architect shall. If involving a variation, be if not dissented from in writing within further seven days by the Architect such shall be deemed to be Architect's instructions within the scope of the contract.

If compliance with the Architect's instructions as aforesaid involves work and/or expense and/or loss beyond that contemplated by the contract then unless the same were issued owing to some breach of this contract by the contractor, the Employer shall pay to the contractor on the Architect's Certificate the price of the said work (as an extra to be valued as hereinafter provided) and/or expenses and/or loss.

**Drawings and
Schedule of Quantities**

3. The contract shall remain in the custody of the Architect/his agent or the site engr. and shall be produced by him at his office as and when required by the Employer or the Contractor. The contractor on the signing hereof shall be furnished by the Architect free of cost with a copy of the priced Schedule of Quantities one copy of each of the said Drawings and of the specification, one copy of all further Drawings issued during the progress of the works. Any further copies of such Drawing required by Contractor shall be paid for by him. The contractor shall keep one copy of all Drawings on the final Certificate to the Contractors, he shall forthwith return to the Architects all Drawings and Specification.

**Contractor
to provide everything
necessary**

4. The contractor shall provide everything necessary for the proper execution of the works according to the intent and meaning of the Drawings, Schedule of Quantities and Specification taken together whether the same may or may not be particularly shown or described therein provided that the same can reasonably be inferred there from, and if the contractor finds any discrepancy in the

Drawings or between the Drawings, Schedule of Quantities and specification he shall immediately and in writing refer same to the Architect who shall decide which is to be followed.

Authorities Notices and Patents

5. The contractor shall conform to the provisions of any Act of the Legislature relating to the works, and to the Regulations and Bye-laws of any Authority and of any water, lighting and other companies and/or Authorities with whose system the structure is proposed to be connected, and shall before making any variations from the Drawings or Specification that may be necessitated by so conforming give to the Architect written notice, specifying the variation proposed to be made and the reason for making it, and apply for the instructions thereon. In case the Contractor, shall not within ten days receive such instructions, he shall proceed with the conforming to the provisions regulations of byelaw, in question, and any variation so necessitate shall be dealt with under clause No.13. The contractor shall bring to the attention of the Architect all notices required by the said Acts, Regulations or Bye-laws to be given to any Authority and pay to such Authority, or to any Public Office all fees that may be properly chargeable in respects of the works, and lodge the receipts with Architect.

The Contractor shall indemnify the Employer against all claims in respect of patent rights, and shall defend all actions arising from such claims, and shall himself pay all royalties, license fees, damage costs and charges of all and every sort that may be legally incurred in respect thereof.

Setting out works

6. The Contractor shall set out the works and shall be responsible for the true and perfect setting out of the same and for the correctness of the positions, levels, dimensions and alignment of all parts thereof. If at any time a any error in this respect shall appear during the progress of the works the Contractor shall at his own expense rectify such error if so required to the satisfaction of the Architect.

Materials and workmanship to conform to description

7. All materials and workmanship shall be far as procurable be of the respective kinds described in the Schedule of Quantities and/or Specification and in accordance with the Architect furnish him with all invoices, accounts, receipts, and other vouchers to prove that the materials comply therewith. The contractor shall at his own cost arrange for and/or carry out any test of any materials which the Architect may require, instructions, and the Contractor shall upon the request of the Architect.

Contractor's Superintendence and Representative on the the works

8. The Contractor shall give all necessary personal superintendence during the execution of the works, and as long thereafter as the Architect may consider necessary until the expiration of the "Defects Liability Period" stated in Appendix hereto. The Contractor shall also during the whole time the works are in progress employ a competent representative who shall be constantly in attendance at the building while the men are at work. Any directions, explanations instructions or notices given by the Architect to such representative shall be held to be given to the Contractor.

Dismissal of workmen

9. The Contractor shall on the request of the Architect immediately dismiss from the works any person employed thereon by him who may, in the opinion of the Architect, be incompetent or misconduct himself, and such person shall not be again employed on the works without there permission of the Architect.

Access for Architect to works

10. The Architect and his representative shall at all reasonable times have free access to the works and/or the workshops, factories or other places where materials are lying or from which they are being obtained and the Contractor

shall give every facility to the Architect and his representative necessary for inspections and examination and test of the materials and workmanship. No person unauthorized by the Architect except the representatives of Public Authorities shall be allowed on the works at any time.

Site Engineer & Clerk of work

11. The terms “Site Engineer” and Clerk of works” shall mean the person approved by Architect and appointed and paid by the Employer and acting under the orders of the Architect to inspect the work in the absence of the Architect. The Contractor shall afford the Clerks of Works and Site Engineer, every facility and assistance for inspecting the work and materials, and for checking and measuring time and materials. Neither the site engineer / Clerks of Works nor any representative of the Architect shall have power to set out works or to revoke, alter, enlarge or relax any requirements of the contract, or to sanction any day work additions alternatives, deviations or omissions, or any extra work whatever except in so far as such authority may be specially conferred by a written order of the Architect. The Site Engineer, Clerk of works, or any representative of the Architect, shall have power to give notice to the Contractor or to his representative of non-approval of any work or materials and such work shall be suspended or the use of such materials shall be discontinued until the decision of the Architect is obtained. The work will from time to time be examined by the Architect, the Site Engineer / Clerk of works or the Architect’s representative, but such examination shall not in any way exonerate the contractor from the obligation to remedy any defect which may be found to exist at any stage of the works on after the same is completed. Subject to the Limitation of the Clause the Contractor shall take instructions only from the Architect.

Assignment & Subletting

12. The whole of the works included in the Contract shall be executed by the Contractor and the Contractor shall not directly or indirectly transfer, assign or underlet the Contract or any part share there of or interest therein without the written consent of the Architect; and no undertaking shall relieve the contractor from the full and entire responsibility of the contract or from active superintendence of the works during their progress.

Variation not to vitiate contract

13. No alteration, omission or variation shall vitiate this contract but in case the Architect thinks proper at any time during the progress of the works to make any alterations in or additions to or omissions from the work or any alteration in the kind or quality of the materials to be used therein and shall give notice thereof in writing under his hand to the Contractor, the Contractor shall after, add to or omit from as the case may require, in accordance with such notice, but the Contractor shall not do any work extra to or make any alterations or additions to or omissions from the works or any deviation from any of the provisions of the Contract. Stipulation, Specification or Contract Drawings without the previous, consenting writing of the Architect and the value of such extras, alterations, additions or omissions shall in all cases be determined by the Architect in accordance with the provisions of Clause 17 hereof, and the same shall be added to or deducted from the Contract Amount accordingly.

Schedule of Quantities

14. The Schedule of Quantities unless otherwise stated shall be deemed to have been prepared in accordance with the Standard Method of Measurement of Building works last before issued by the Indian Institute of Architects.

Any error in description or in quantity or in omission of items from the schedule of Quantities shall not vitiate this Contract but shall be rectified and the value thereof as ascertained under Clause 17 hereof shall be added to or deducted from the Contract Amount (as the case may be) provided that there shall be no rectification of errors in the Contractor’s Schedule of Rates.

**Sufficiency of
Schedule of Quantities**

15. The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of this Tender for the works and of the prices stated in the Schedule of Quantities and / of the Schedule of Rates and Prices which rates and prices shall cover all his obligations under the Contract, and all matters and things necessary for the proper completion of the works.

Measurement of Works

16. The Architect or his representative may from time to time intimate to the contractor that he requires the works to be measured, and the Contractor shall forthwith attend or send a qualified Agent to assist the Architect or the Architect's representative in taking such measurements and calculations and to furnish all particulars or to give all assistance required by either of them.

Should the Contractor not attend or neglect or omit to send such Agent then the measurement taken by the representative of Architect or approved by architect shall be taken to be the correct measurements of the works. Such measurements shall be taken in accordance with the Standard Method of Measurement of Building Works last before issued by the Indian Institute of Architects.

The Contractor or his Agent may at the time of measurement take such notes and measurements as he may require.

All authorized extra works, omissions and all variations made without the Architect's knowledge, if subsequently sanctioned by him in writing, shall be included in such measurements.

**Price for Extras etc.
Ascertainment of**

17. Should it be found after the completion of the works from measurements taken (in accordance with the previous paragraph) that any of the quantities or amounts of works thus ascertained are less or greater than the quantities or amount specified for the work in the priced schedule of Quantities and or Tender or that any variation is made, the valuation of such quantities, amounts or variations, unless previously or otherwise agreed upon, shall be made in accordance with the following rules :-

- (a) The net rates or prices in the original Tender shall determine the Valuation of the extra work where such extra work is of similar character and executed under similar conditions as the work priced therein.
- (b) The net prices of the original Tender shall determine the value of the items omitted provided if omission vary the conditions under which any remaining items of works are carried out prices for the same shall be valued under (c) hereof:
- (c) Where the extra works are not of similar character and/or executed under similar conditions as aforesaid or where the omissions vary the conditions under which any remaining items of works are carried out or if the amount of any omission or addition relative to the amount of the whole of the Contract works or to any part thereof shall be such that in the opinion of the Architect the net rate or price contained in the Priced Schedule of Quantities or Tender of or for any item of the work involve loss or expense beyond that reasonable contemplated by contract is by reason of such omission or addition rendered unreasonable or inapplicable, the Architect shall fix such other rate or price as in the circumstances he shall think reasonable and proper.
- (d) Where extra work cannot be properly measured or valued the Contractor shall be allowed day work prices as the net rates stated in

the Tender or the priced Schedule of Quantities or, if not so stated, then in accordance with the local day work rates and wages for the district ; provided that in the either case vouchers specifying the daily time (and if required by the Architect, the workmen's names) and materials employed be delivered for verification to the Architect of his representative at or before the end of the week following that in which the work has been executed.

The measurement and valuation in respect of the Contract shall be completed within the "Period of final measurements" stated in the appendix or if not so stated then within 6 months of the completion of the Contract works as defined in Clause 20 hereof.

Unfixed materials when taken into account to be the property of the Employer 18.

Where in any Certificate (of which the Contractor has received payment) the Architect has included the value of any unfixed materials intended for and/or placed on or adjacent to the works such materials shall become the property of the employer and they shall not be removed, except for use upon the works, without the written authority of the Architect. The Contractor shall be liable for any loss or damage to such materials.

Removal of improper work 19.

The Architect shall, during the progress of the works, have power to order in writing from time to time the removal from the works within such reasonable time to times as may be specified in the order, of any materials which in the opinion of the Architect are not in accordance with the Specification or the instructions of Architect, the substitution of proper material, and the removal and proper re-execution of any work executed with materials or workmanship not in accordance with the Drawings and Specification or instructions and the Contractor shall forthwith carry out such order at his own cost. In case of default on the part of the Contractor to carry out such order, the Employer shall have the power to employ and pay other persons to carry out the same; and all expenses consequent thereon incidental thereto as certified by the Architect shall be borne by the contractor or may be deducted by the Employer from any moneys due or that may become due the Contractor.

Defects after Completion 20.

Any defect, shrinkage, settlement or other faults which may appear within the "Defects Liability Period" stated in the appendix hereto or, if none stated, then within twelve months after the virtual completion of the works, arising in the opinion of the Architect from materials or workmanship not in accordance with the Contract, shall upon the directions in writing of the Architect, and within such reasonable times as shall be specified therein, be amended and made good by the Contractor, at his own cost unless the Architect shall decide that he ought to be paid for such amending and making good; and in case of default the Employer may employ and pay other persons to amend and make good such defect, shrinkage, settlements or other faults, and all damages, loss and expenses consequent thereon or incidental thereto shall be made good and borne by the Contractor and such damage, loss and expenses shall be recoverable from him by the Employer or may be deducted by the Employer upon the Architect's Certificate in writing from any moneys due to that may become due to the Contractor, or the Employer may in lieu of such amending and making good by the contractor deduct from any moneys due to the Contractor a sum, to be determined by the Architect equivalent to the cost of amending such work and in the event of the amount retained under Clause 32 being insufficient, recover the balance from the Contractor, together with any expenses the Employer may have incurred in connection therewith. Should any defective work have been done or material supplied by any Sub-Contractor employed on the works who has been nominated or approved by the Architect as provided in Clauses II and 22, the contractors shall be liable to make good in the same manner as if such work or material had been done or supplied by the Contractor and been subject

to the provisions of this Clause and Clause 2 hereof. The Contractor shall remain liable under the provision of the Clause notwithstanding the signing by the Architect of any Certificate or passing of any accounts.

Certificate of virtual completion

21. The works shall not be considered as completed until the Architect has certified in writings that they have been virtually completed and the Defects Liability Period shall commence from the date of such Certificate.

Nominated Sub-Contractors

22. All Specialist, Merchants, Trades men and other executing any work or supplying and fixing any goods for which prime cost prices or provisional sums are included in the Schedule of Quantities and/or Specification who may be nominated or selected by the Architect are hereby declared to be Sub-Contractor's employed by the Contractor and are herein referred to as nominated Sub-Contractors.

No nominated Sub-Contractor shall be employed on or in connection with the works against whom the Contractor shall make reasonable objection or (save where the Architect and Contractor shall otherwise agree) who will not enter into a Contract providing :-

- (a) That the nominated Sub-Contractor shall indemnify the Contractor against the same obligations in respect of the Sub Contract as the Contractor is under in respect of this Contract.
- (b) That the nominated Sub-Contractor shall indemnify the Contractor against claims in respect of any negligence by the Sub-Contractor, his servants or agents or any misuse by him or them of any scaffolding or other plant the property of the Contractor or under any Workmen's Compensation Act in force.
- (c) Payment shall be made to the nominated Sub-Contractor within fourteen days of his receipt of the Architect's Certificate provided that before any Certificate is issued the Contractor shall upon request furnish to the Architect proof that all nominated Sub-Contractor's accounts included in previous Certificates have been duly discharged : in default whereof the Employer may pay the same upon a Certificate of the Architect and deduct the amount thereof from any sums due to the Contractor. The exercise of this power shall not create privities of Contract as between Employer and Sub-Contractor.

Other person engaged by Employer

23. The employer with the concurrence of the Architect reserve the right to use the Premises and any portions of the site for the execution of any work not included in this Contract which he may desire to have carried out by other persons, and the Contractor is to allow all reasonable facilities for the execution of such work but is not required to provide any plant or materials for the execution of such work except by special arrangement with the Employer. Such work shall be carried out in such manner as not to impede the progress of the works included in the Contract and the Contractor is not to be responsible for any damage or delay which may happen to or be occasioned by such work.

Insurance in respect of damage to person and property

24. The Contractor shall be responsible for all injury to persons, animals or things, and for all structural and decorative damage to property which may arise from the to operations or neglect of himself or of any nominated Sub-Contractor's employees, whether such injury or damage arise from carelessness, accident or any other cause whatever in any way connected with the carrying out of this Contract. This Clause shall be held to include, INTER ALIA, any damage to building, whether immediately adjacent otherwise, and any damage to roads, streets, footpaths, bridges or ways as well as all damage caused to the buildings and works forming the subject of this Contract by frost or other inclemency of

weather. The Contractor shall indemnify the Employer and hold him harmless in respect of all and any expenses arising from any such injury or damage to persons or property as aforesaid and also in respect of any claim made in respect of injury or damage under any Acts of Government or otherwise and also in respect of any Award of compensation or damage consequent upon such claim.

The Contractor shall reinstate all damage of every sort mentioned in this Clause, so as to delivery up the whole of the Contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damage to the property of third parties.

The Contractor shall indemnify the Employer against all claims which may be made against the Employer by any member of the public or other third party in respect of anything which may arise in respect of the works or in consequence thereof and shall at his own expense arrange to effect and maintain, until the virtual completion of the Contract, with an approved Office a Policy of Insurance in the joint names of the Employer and the Contractor against such risks and deposit such Policy or Policies with the Architect from time to time during the currency of this Contract. The Contractor shall similarly indefinitely indemnify the Employer against all claims which may be made upon the Employer whether under the Workmen's Compensation Act or any other Statute in force during the currency of this contract or at Common Law in respect of any employee of the Contractor or any Sub-Contractor and shall at his own expense effect and maintain, until the virtual completion the Contract, with an approved office a Policy of Insurance in the joint names of the Employer and the Contractor against : such risks and deposit such Policy or Policies with the Architect from time to time during the currency of the Contract.

The Contractor shall be responsible for anything which may be excluded from the Insurance Policies above referred to and also for all other damages to any property arising out of and incidental to the negligence or defective carrying out of this Contract. He shall also indemnify the Employer in respect of any cost, charges or expenses arising out of any claim or proceedings and also in respect of any Award of or compensation of damage arising therefrom.

The Employer with the concurrence of the Architect shall be at liberty and is hereby empowered to deduct the amount of any damage, compensation, costs, charges and expenses arising or accruing from or in respect of any such claim or damage from any sum or sums due to become due to the Contractor.

Fire Insurance

- 25.(a) The Contractor shall at the time of signing the Contract insure the works and keep them insured until the virtual completion of the Contract against loss or damage by fire, in an Office to approved by the Architect, in the joint names of the Employer and Contractor (the name of the former being placed first in the Policy), for the full amount of the Contract and for any further sum if called upon to do so by the Architect, the premium of such further sum being allowed to the Contractor as an authorized extra. Such Policy shall cover the property of the Employer only, fees for assessing the claim and in connection with his services generally therein, and shall not cover any property of the Contractor or any Sub-Contractor or employee. The Contractor shall deposit the policy and receipts for the premiums with the Architect within twenty one days from the date of the Contractor unless otherwise instructed by the Architect. In default or the Contractor insuring as provided above, the employer or the Architect on his behalf may so insure and may deduct the premiums paid from any money due or which may become due to the contractor. The Contractor shall as soon as the claim under the Policy is settled, or the work reinstated by the Insurance Office, should they elect to do so, proceed with all due diligence with the completion of work in the same manner as though the fire had not occurred and in all respect under the same condition of contract. The Contractor, in case of rebuilding or

reinstatement after fire, shall be entitled to such extension of time for completion as the Architect deems fit.

- (b) The amount so due as aforesaid shall be the total value of the works duly executed and of the Contract materials and goods delivered upon the site for use in the works upto and including a date not more than seven days prior to the date of the said Certificate less the amount to be retained by the Employer (as hereinafter provided) and less any installments previously paid under this Clause. Provided that such Certificates shall only include the value of said material and goods as and from time as they are reasonably, properly and not prematurely brought upon the site and then only if properly stored and/or protected against weather.

Date of commencement and completion

26. The Contractor shall be allowed admittance to the site on "Date of Commencement" stated in the Appendix, and he shall thereupon and forthwith begin the works and shall regularly proceed with and complete the same (except such painting or other decorative work as the Architect may desire to delay) on or before the "Date of Completion" stated in the Appendix subject nevertheless to the provisions for extension of time hereinafter contained.

Damage for non-completion

27. If the Contractor fails to complete the works by the date stated in Appendix or within any extended time under Clause 28 hereof and the Architect certifies in writing that in his opinion the same ought reasonable so to have been completed the Contractor shall pay or allow the Employer the sum named in the Appendix as "Liquidated Damages" for the period during which the said works shall so remain incomplete and the employer may deduct such damages from any money due to the Contractor.

Delay and extension of time

28. If in the opinion of the Architect the works be delayed (a) force majeure or (b) by reason of any exceptionally inclement weather or (c) by reason of proceedings taken or threatened by or dispute with adjoining or neighboring owners or public authorities arising otherwise than through the Contractor's own default of (d) by the works or delays of other Contractors or Tradesmen engaged or nominated by the Employer or the Architect and not referred to in the Schedule of Quantities and/or Specification or (e) by reason of Architect's instructions as per Clause 2 or (f) by reason of civil commotion, local combination or workmen or strike or lock-out affecting any of the building traders or (g) in consequence of the Contractor not having received in due time necessary instructions from the Architect for which he shall have specifically applied in writing the Architect shall make a fair and reasonable extension of time for completion of the Contract works : in case of such strike or lock-out the Contractor shall, as soon as may be, given written notice thereof to the Architect, but the Contractor shall nevertheless constantly use his endeavors to prevent delay and shall do all that may reasonably be required to the satisfaction of the Architect to proceed with the work.

Failure by Contractor to comply with Architect's instructions

29. If the contractor after receipt of written notice from the Architect requiring compliance within ten days fails to comply with such further drawings and / or Architect's instruction the Employer with the consent of the Architect may employ and pay other persons to execute any such work whatsoever that may be necessary to give effect thereto, and all costs incurred in connection therewith shall be recoverable from the Contractor by the employer on the Certificate of the Architect as a debt or may deducted by him from any money due or to become due to the contractor.

Termination of Contract by the Employer

30. If the Contractor being an individual or a firm commit any "act of insolvency", or shall be adjudged an Insolvent or being an incorporated Company shall have and order for compulsory winding up made against it or pass an effective resolution for winding up voluntarily or subject to the supervision of the Court

and of the Official Assignee of the Liquidator in such acts of insolvency or winding up shall be unable within seven days after notice to him requiring him to do so, to show to the reasonable satisfaction of the Architect that he is able to carry out and fulfil the contract, and to give security therefore, if so required by the Architect.

Or if the Contractor (whether an individual, Firm or Incorporated Company) shall suffer execution to be issued.

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

Or shall assign or sublet this Contract without the consent in writing of the Architect first obtained.

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

Or if the Architect shall certify in writing to the Employer that the Contractor.

- (I) has abandoned the Contract, or
- (II) has failed to commence the works, or has without any lawful excuse under these Conditions suspended the progress of the works for 14 days after receiving from the Architect written notice to proceed, or
- (III) has failed to proceed with the works with such due diligence and failed to make such due progress as would enable the works to be completed within the time agreed upon, or
- (IV) has failed to remove materials from the site or to pull down and replace work for seven days after receiving from the Architect written notice that the said materials or work were condemned and rejected by the Architect under these Conditions, or
- (V) has neglected or failed persistently to observe and perform all or any of the acts, matter or things by this contract to be observed and performed by the contractor for seven days after written notice shall have been given to the Contractor requiring the Contractor to observe or perform the same, or
- (VI) has to the detriment of good workmanship or in defiance of the Architect's instructions to the contrary sublet any part of the Contract,

Then and in any of the said cases the Employer with the written consent of the Architect, may notwithstanding any previous waiver, after giving seven day's notice in writing to the Contractor, determine the Contract, but without hereby affecting the powers of the Architect or the obligations and liabilities of the Contractor the whole of which shall continue in force as fully as if the Contract has not been so determined and as if the works subsequently executed had been executed by or on behalf of the Contractor. And further, the Employer under instructions of the Architect, by his agents or servants may enter upon and take possession of the works and all plants, tools scaffoldings, sheds, machinery steam and other power utensils and materials lying upon the premises, or the adjoining lands or roads, and use the same as his own property or may employ the same by means of his own servants and workmen in carrying on and completing the works or by employing and other Contractors or other person or persons to complete the works, and the Contractor shall not in any way interrupt or do any act, matter or thing to prevent or hinder such other Contractor or other

person or persons employed for completing and finishing or using the materials and plant for the works. When the works shall be completed or as soon thereafter as convenient the Architect shall give a notice in writing to the Contractor to remove his ; surplus materials and plant, and should the Contractor fail to do so within a period of 14 days after receipt thereof by him, the employer shall sell the same by public auction, and shall give credit to the Contractor for the amount realized. The Architect shall thereafter ascertain and certify in writing under his hand what (if anything) shall be due or payable to or by the Employer for the value of the said plant and materials so taken possession of by the Employer and the expense or loss which the Employer shall have been put to in procuring the works to be completed and the amount, if any, owing to the Contractor and the amount which shall be so certified shall thereupon be paid by the Employer to the contractor or by the contractor to the Employer, as the case may be, and the Certificate of the Architect shall be final and conclusive between the parties.

Termination of Contract by Contractor

31. If payment of the amount payable by the Employer under certificate of the Architect with interest as provided for herein after shall be in areas and unpaid for thirty days after notice in writing requiring payment of the amount with interest as aforesaid shall have been given by the Contractor to the Employer, or if the Employer interferes with or obstructs the issue of any such Certificate, or the Employer commits any “act of insolvency” or if the Employer (being an Individual, or Firm) shall be adjudged an Insolvent, or (being an Incorporate Company) shall have an order made against him or pass an effective Resolution for winding up, either compulsorily subject to the supervision of the Court or Voluntarily or the employer shall repudiate the contract or if the Official Assignee/or the Liquidator in any such winding up shall be unable within fifteen days after notice to him requiring him so to do, to show the reasonable satisfaction of the Contractor that he is able to carry out and fulfil the Contract and to make all payments due, and to become due there under and, if required by Contractor, to give security of the same or if the work be stopped for three months under the order of the Architect of the Employer or by any injunctions or other order of any Court of Law, then and in any of the said cases the Contractor shall be at liberty to determine the Contract by notice in writing to the Employer, through the Architect, and he shall be entitled to recover from the Employer payment for all works executed and for any loss he may sustain upon any plant or material supplied or purchased or prepared for the purpose of the Contract. In Arriving at the amount of such payment the net rates contained in the Contractor’s original Tender shall be followed or Where the same may not apply, valuation shall be made in accordance with Clause 17 hereof.

Prime Cost and Provisional Sums

- 32.(a) Where “Prime Cost” (P.C.) prices or provisional sums of money are provided for any goods or work in the specification or Schedule of Quantities the same are exclusive of any trade discounts or allowances, discount for cash, or profit which the Contractor may require and of carriage and fixing.
- (b) All goods or work, for which prime cost prices or provisional sums of money are provided may be selected or ordered from any manufacturers or firms at the discretion of the Architect or Employer and Employer reserves to himself the right of paying direct for any such goods or work and deducting the said prices or sums the amount of Contract. Should any goods or work for which prime cost prices or provisional sums are provided or portions of same be not require, such prices or sums, together with the profits slowed for the same and such additional amount as the Contractor may have allowed for carriage and fixing, will be deducted in full from the amount of the contract. Whether the goods be ordered by the Contractor or otherwise, the contractor shall at his own cost, fix the same if called upon to do so and the Contractor shall also receive and sign for such goods and be responsible for their safe custody as and from the date of their delivery upon the works.

- (c) In cases in which the provisional quantities of material are contained in the Contract the Contractor shall provide such material to such amount or to greater or less amounts as the Architect shall direct in writing as the net rates at which he shall have priced such items in his Schedule of Quantities, should, however, any such items be entirely omitted, which omissions shall be at the Architect's discretion, no profit on such items shall be allowed to the Contractor.
- (d) No prime cost sum or sums (or any portion thereof) shall be included in any Certificate for payment to the Contractor until the receipt accounts relating to them have been produced by the Contractor to the Architect. Such accounts shall show all discounts and any sum or sums in respect of such discounts shall be treated as a trade discount. Provided always that should the contractor in lieu of producing such receipted accounts requests the Architect in writing to issue a Certificate on the Employer for such sums due either on account in settlement to Sub-Contractor or direct, the Architect shall, upon satisfying himself that the

Sub-Contractor is entitled to the same, so issue the Certificate, and such sum or sums shall be deducted from the amount of the Contract at the settlement of accounts and any profit or further sum to which the Contractor is properly entitled in respect of such. Sub-Contract, and which is in conformity with the terms of the Contract, shall be allowed to the contractor at the settlement of accounts as though the amount of such Certificate to the Sub-Contractor had been included in a Certificate drawn in favour of the Contractor.

- (e) If the Contractor neither produces the receipt nor gives authority to the Architect to issue a Certificate in favour of such Sub-Contractor direct, the Architect may upon giving the Contractor seven day's notice in writing of his intention to do so, issue to the Sub-Contractor such Certificate direct on the Employer and obtain the receipt from the Sub-Contractor, which receipt shall be deemed a discharge for the amount of such Certificate as though given by the contractor. In the event of such default on the part of the contractor, he shall not be allowed any profit he may have added in the Schedule of Quantities upon such Sub-Contract
- (f) The exercise of the option before referred to by the contractor and the issue of Certificates as before described to Sub-Contractors upon the contractor's request or the issue to the Sub-Contractor direct of Certificates by the Architect shall not, however, relieve the contractor from any of the liabilities in respect of insufficient faulty or incomplete work of the Sub-Contractor for which he may be liable under the terms of the Contract.
- (g) If any provisional items are provided for work of a nature usually carried out by the Contractor in the ordinary course of his business the Employer shall give the Contractor an opportunity of tendering for the same without prejudice to the Employer's right to reject the lowest of any Tender.

Certificates & payments 33

The Contractor shall be paid by the employer from time to time by installment under Interim Certificates to be issued by the Architect or his authorized representative to the Contractor on account of the works executed when in the opinion of the Architect or his representative, the work to the approximate value named in the appendix as "Value of work for Interim Certificates" (or less at the reasonable discretion of the Architect) has been executed in accordance with this Contract, subject, however, to a retention of the percentage of such value named in the Appendix hereto as "Retention percentage for Interim Certificates" until the total amount retained shall reach the sum named in the Appendix as "Total Retention Money" after which time the Installment shall be

upto the full value of the work subsequently so executed and fixed in the building. The Architect may in his discretion include in the Interim Certificate such amount as he may consider proper on account of materials delivered upon the site by the Contractor for use in the work. And when the works have been virtually completed and the Architect shall have certified in writing that they have been completed the contractor shall be paid by the Employer in accordance with the Certificate to be issued by the Architect the sum of money named in the Appendix as “Installment after Virtual completion” being a part of the said Total Retention money. And the Contractor shall be entitled to the Payment of the Final Balance in accordance with the Final Certificate to be issued in writing by the Architect at the expiration of the period referred to as “the Defect Liability Period” in the Appendix hereto from the date of Virtual Completion or as soon after the expiration of such period as the works shall have been finally completed and all defects made good accordingly to the true intent and meaning hereof whichever shall last happen, provided always that the issue by the Architect of any Certificate during the progress of the works or at or after their completion shall not relieve the contractor from his liability under Clause 2 and 20 not relieve the Contractor of his liability in cases of fraud, dishonesty, or

fraudulent concealment relation to the works or materials or to any matter dealt with in the Certificate, and in case of all defects and insufficiencies in the works or materials which a reasonable examination would not have disclosed. No certificate of the Architect shall of itself be conclusive evidence that any works or materials to which it relates are in accordance with the Contract.

The Architect shall have power to withhold any Certificate if the works or any parts thereof are not being carried out to his satisfaction.

The Architect may by any Certificate make any correction in any previous Certificate which shall have been issued by him.

Payments upon the Architect’s Certificate shall be made within the periods named in the Appendix as “Period for honoring of Certificates” after such Certificates have been delivered to the Employer.

Delayed Payment 34. Any amounts payable by the Employer to the Contractor in pursuance of any Certificate given by the Architect here under shall if not paid within the “Period for honoring Certificates” named in the Appendix, carry interest at the rate named in the Appendix as the “Rate of Interest for delayed payment” from the date upon which sum ought to have been paid by the Employer until payment.

Matter to be finally determined by Architect 35. The decision, opinion, direction, Certificate (except for payment) with respect to all or any of the matters under clauses 2a, 2b 4, 7, 12, 19, 28 (a,b,c,d,f) and 30 hereof (which matters are herein referred to as the excepted matters) shall be final and conclusive and binding on the parties hereto and shall be without Appeal. Any other decision, opinion, direction Certifiable or Valuation of the Architect or any, refusal of the Architect to give any of the same shall be subject to the right of Arbitration and review in the same way in all respect (including the provision as to opening the reference) as if it were a decision of the Architect under the following Clause.

Settlement of dispute Arbitration 36. All disputes and differences of any kind whatever arising out of or in connection with the Contract or the carrying out of the works (whether during the progress of the works or after their completion and whether before or after the determination, abandonment or breach of the Contract) shall be referred to and settled by the Architect who shall state his decision in writing Such decisions may be in the form of a Final Certificate or otherwise. The decision of the

Architect with respect to any of the excepted matters shall be final and without appeal as stated in the preceding Clause. But if either the employer or the Contractor be dissatisfied with decision of the Architect or any matter, question or dispute of any kind (except any of the excepted matters) or as to the withholding by the Architect of any Certificate to which the Contractor may claim to be entitled, then and in any such case either party (the Employer or the Contractor) may within twenty eight days after receiving notice of such decision give a written notice to the other party through the Architect requiring that such matters in dispute be arbitrated upon. Such written notice shall specify the matters which are in dispute and such dispute or difference of which such written notice has been given and no other shall be and is hereby referred being to the Arbitration and final decision and a single Arbitrator being a Fellow of the Indian Institute of Architects to be agreed upon and appointed by both the parties or in case of disagreement as to the appointment of a single Arbitrator to the Arbitration of Two Arbitrators both being Fellows of the Indian Institute of Architects, one to be appointed by each party which Arbitrator shall before taking upon themselves the burden of reference appoint an Umpire.

The Arbitrator, the Arbitrators or the Umpire shall have power to open up, review and revise any Certificate, opinion, decision, requisition or notice, save in regard to the excepted matters in dispute which shall be submitted to him or them and of which notice shall have been given as aforesaid.

Upon every or any such reference in cost of and incidental to the reference and Award respectively shall be in the direction of the Arbitrator, or Arbitrators or the Umpire who may determine the amount thereof, or direct the same to be taxed as between attorneys and client or as between party and party, and shall direct by to whom and whom and in what manner the same shall be borne and paid. This submission shall be deemed to be a submission to Arbitration within the meaning of the Indian Arbitration Act 1899 or any statutory modification thereof. The Award of the Arbitrator or Arbitrators or the Umpire; shall be final and binding on the parties. Such reference except as to the withholding by the Architect of any Certificates under Clause 31 to which the Contractor claims to be entitled, shall not be opened or entered upon until after the completion or alleged completion of the works or until after the practical cessation of the works arising from any cause unless with the written consent of the employer and the Contractor. Provided always that the Employer shall not withhold the Payment of and Interim Certificate, not the contractor, except with the consent in writing of the Architect, in any way delay the carrying out of the works by reason of any such matter, question or dispute being referred to Arbitration, but shall proceed with the work with all due diligence and shall, until the decision of the Arbitrator or Arbitrators or the Umpire to be given, abide by the decision of the Architect and no Award of the "Arbitrator or the Arbitrators or the Umpire" shall relieve the Contractor of his obligations to adhere strictly to the Architect's instructions with regard to actual carrying out of the works. The Employer and the Contractor hereby also agree that Arbitration under this Clause shall be a condition precedent to any right of action under the contract.

Insurance

37. The Contractor after signing the agreement, should also take up Insurance for Workmen's Compensation in the joint name of the Employer and Contractor. The premiums of such Insurance policies shall be borne by the Contractor till the completion of the project. No extra claim whatsoever in this regard shall be allowed.

General

38. General conditions of Contract, as given in Vol. II of the "Tender document", as applicable to this work shall also form the part of this contract.
39. Any object of interest or value which may be found on the site or in excavating the same during the progress of work shall become the property of the

Employer. The contractor shall carefully takeout and preserve all such objects and shall immediately or as soon as possible – conveniently may after the discovery of such articles deliver he same into the possession of the Employer or his authorized person.

Escalation

40 No escalation on labour or material shall be allowed under any circumstances

The notice inviting tender, terms and conditions for tender, general Conditions and appendix thereto, special conditions, drawings i/c subsequent details to be issued during execution, specifications and general rules for construction, and Priced schedule bill of quantities shall form the part of this contract.

APPENDIX TO GENERAL CONDITIONS OF CONTRACT

1.	DATE OF COMMENCEMENT	Within 6 days from the date of letter of intent
2.	PERIOD OF COMPLETION	One month
3.	.DEFECTS LIABILITY PERIOD	12 Months from the date of virtual completion.
4.	LIQUIDATED DAMAGES	Rs. 1000/- per day subject to max. of Rs. 3,000/-
5.	MINIMUM VALUE OF WORK For interim certificate,	Rs. 3,000/- (Rs Three Thousand) or 15 days whichever is later
6.	SECURITY DEPOSIT (retention percentage)	10 % subject to maximum of Rs. 3,000/-
7.	LIMITS OF RETENTION FUND Maximum security deposit	Rs. 3,000/-
8.	PERIOD OF HONORING INTERIM CERTIFICATES	10 Days
9.	INSTALMENT AFTER VIRTUAL COMPLETION	50 % of total security deposit
10.	RATE OF INTEREST FOR DELAYED PAYMENT	Nil
11.	PERIOD OF FINAL MEASUREMENT	1 ½ months from the date of virtual competition of work
12.	ERNEST MONEY WITH TENDER (to be adjusted in retention fund)	Rs 1,000/-- (Rs. one thousand)

- (a) L.T. Cable & Earthing**
- (b) Bill of Quantities.**
- (c) Summary Sheet.**

L.T. CABLES

a) GENERAL

L.T. Cables shall be supplied, inspected, laid tested and commissioned in accordance with drawings, specifications, relevant Indian Standards specifications and cable manufacturer's instructions. The cable shall be delivered at site in original drums with manufacturer's name clearly written on the drums. The recommendations of the cable manufacturer with regard to jointing and sealing shall be strictly followed.

b) MATERIAL

The L.T. power cable shall be PVC insulated PVC sheathed type aluminum conductor armoured cable and L.T. control cable shall be PVC insulated PVC sheathed type copper conductor unarmoured cable conforming to IS : 1554 : 1988 (Part-I) with upto date amendments.

c) INSTALLATION OF CABLES

Cables shall be laid directly in ground, pipes, masonry ducts, on cable tray, surface of wall/ceiling etc. as indicated on drawings and/or as per the direction of Engineer - in - Charge. Cable laying shall be carried out as per CPWD specifications.

d) INSPECTION

All cables shall be inspected at site and checked for any damage during transit.

e) JOINTS IN CABLES

The Contractor shall take care to see that the cables received at site are apportioned to various locations in such a manner as to ensure maximum utilization and avoiding of cable joints. This apportioning shall be got approved from Engineer-in-Charge before the cables are cut to lengths.

f) LAYING CABLES IN GROUND

Cables shall be laid by skilled experienced workmen, using adequate rollers to minimize stretching of the cables. The cable drums shall be placed on jacks before unwinding the cable. With great care it shall be unrolled on over wooden rollers placed in trenches at intervals not exceeding 2 metre. Cables shall be laid at depth of 0.75 metres below ground level for LT Cables and 1 metre below ground level for HT cable. A cushion of sand total of 250mm shall be provided both above and below the cable, joint boxes and other accessories. Cable shall not be laid in the same trench or along side a water main.

The cable shall be laid in excavated trench over 80mm layer of sand cushion. The relative position of the cables, laid in the same trench shall preserved. At all changes in direction in horizontal and vertical planes, the cables shall be bent smooth with a radius of bent not less than 12 times the diameter of cables. Minimum 3 metre long loop shall be provided at both end of cable.

Distinguishing marks may be made on the cable ends for identifications of phases. Insulation, tapes of appropriate voltage and in red, yellow and blue colors shall be wrapped just below the sockets for phase identifications.

Cable route marker shall be provided as per CPWD specifications. Cost of cable route markers is deemed to be included in the cost of cables/cable laying.

g) PROTECTION OF CABLES

The cables shall be protected by bricks laid on the top layer of the sand for the full length of underground cable. Where more than one cables is laid in the same trench, the bricks shall cover all the cables and shall project a minimum of approximately 80mm on either side of the cables. Cable under road crossings and any other places subject to heavy traffic shall be protected by running them through Hume Pipes of suitable size. Pipes for cable crossing the road shall be laid at a depth of 1000 mm.

h) EXCAVATION & BACK FILL

All excavation and back fill required for the installation of the cables shall be carried out by the Contractor in accordance with the drawings and requirements laid down elsewhere. Trenches shall be dug true to line and grades. Back fill for trenches shall be filled in layer not exceeding 150mm. Each layer shall be properly rammed and consolidated before laying the next layer.

The Contractor shall restore all surface, road ways, side walks, curbs, wall or the works cut by excavation to their original condition to the satisfaction of the Engineer-in -Charge.

i) LAYING OF CABLES ON CABLE TRAY/SURFACE OF WALL/ CEILING

Cable shall be laid on perforated M.S. Cable tray/ladders. Cables shall be properly dressed before cable ties/clamps are fixed. Wherever cable tray is not proposed, cables shall be fixed on surface of wall or ceiling slab by suitable MS clamps/saddles. Care shall be taken to avoid crossing of cable.

j) CABLES ON HANGERS OR RACKS

The Contractor shall provide and install all iron hangers racks or racks with die cast cleats with all fixings, rag bolts or girder clamps or other specialist fixing as required.

Where hangers or racks are to be fixed to wall sides, ceiling and other concrete structures, the Contractor shall be responsible for cutting away, fixing and grouting in rag bolts and making good.

The hangers or racks shall be designed to leave at least 25mm clearance between the cables and the face to which it is fixed. Multiple hangers shall have two or more fixing holes. All cables shall be saddled at not more than 150mm centres. These shall be designed to keep provision of some spare capacity for future development.

k) CABLES TAGS

Cable tags shall be made out of 2mm thick aluminium sheets, each tag 1-1/2 inch in dia with one hole of 2.5mm dia, 6mm below the periphery. Cable designations are to be punched with letter/number punches and the tags are to be tied inside the panels beyond the glanding as well as below the glands at cable entries. Tray tags are to be tied at all bends. On straight lengths, tags shall be provided at every 5 metres.

l). TESTING OF CABLES

Prior to installation burying of cables, following tests shall be carried out. Insulation test between phases, phase & neutral, phase & earth for each length of cable.

- a. Before laying.
- b. After laying.
- c. After jointing.

Along with the test as prescribed in IS Code, cross sectional area shall also be checked.

On completion of cable laying work, the following tests shall be conducted in the presence of the Engineer in Charge.

- a. Insulation Resistance Test (Sectional and overall).
- b. Continuity Resistance Test.
- c. Earth Test.

All tests shall be carried out in accordance with relevant Indian Standard code of practice and Indian Electricity Rules. The Contractor shall provide necessary instruments, equipments and labour for conducting the above tests & shall bear all expenses of conducting such tests.

EARTHING

a) GENERAL

This section covers the general arrangement of the earthing, i.e. all non-current carrying metal parts of the electrical installation shall be earthed as per IS 3043(1987) and general specifications for electrical works (part-1, internal) of CPWD specifications. All metal conduits, trunkings, cable sheaths, switchgear, distribution Board, meters, light fixtures, fans and all other metal parts forming part of the work shall be bonded together and connected by two separate and distinct conductors to earth electrodes. Earthing shall also be in conformity with the provisions of Rule 32, 61, 62, 67 and 88 of IER 1956. The earth electrode shall not be situated less than 1.5 mtr.

b) EARTHING SYSTEMS

It shall comprise of earth electrodes, earth strips, earth continuity conductor and all earthing conductors shall be of high conductivity copper, GI or aluminium and shall be protected against mechanical damage and corrosion. The size of earth conductors shall not be less than half that of the largest current carrying conductor. The connection of earth continuity conductors of earth bus and earth electrodes shall be strong and sound and shall be rigidly fixed to the walls, cable trenches, cable trays or conduits and cable by using suitable clamps made of non ferrous metals.

c) EARTHING ELECTRODES

Earthing electrodes shall be designed as per the requirement of IS 3043 (1987). The number and size of earth electrodes shall be calculated so that under fault conditions no electrode is loaded above its maximum permissible current density. The resistance of earth electrode shall be as low as possible, the maximum allowable value being one ohm.

Earthing electrodes of either plate type or pipe type may be adopted. The choice of plate or pipe electrode shall be decided according to the anticipated fault level of the network and local soil conditions. Generally, plate electrodes shall be used for substations and large medium voltage network and pipe electrodes for small medium voltage network and installations.

d) Location of Earth Electrodes

Normally an earth electrode shall not be situated less than 1.5 m from any building. Care shall be taken that the excavation for earth electrode may not affect the column footings or foundation of the buildings. In such cases electrodes may be further away from the building.

The location of the earth electrode will be such where the soil has reasonable chance of remaining moist. As far as possible, entrances, pavements and road ways, are to be definitely avoided for locating earth electrode.

e) Water Arrangement

Method of watering arrangement shall comply with General Specifications.

f) Plate Electrode

Plate electrodes shall be made of GI plate of 6 mm thick and 60x60 cm. size. The plate shall be buried vertically in ground at depth of not less than 3.5 metres to the top of the plate, the plate being encased in charcoal to a thickness of 15 cm. all round. It is preferable to bury the electrode to a depth where sub-soil water is present. Earth leads to the electrode shall be laid in a GI pipe and connected to the plate electrode with GI bolts, nuts and washers. A GI pipe of not less than 19 mm dia shall be placed vertically over the plate and terminated in a funnel at 5 cm. above ground. The funnel shall be provided with a wire mesh. The funnel shall be enclosed in masonry chamber of 100 x 50 cm. dimensions. The chamber shall be provided with CI frame cover of 100 x 50 cm size. The earth station shall also be provided with a suitable permanent identification label/tag.

Note : If copper plate is used it shall be of 3mm thickness.

g) Pipe electrode shall comprise of a 2.5 Mtr. long 40 mm dia GI pipe buried vertically in a pit of 35x35 cm size and filled with alternate layers of charcoal, salt and river sand and connected at the top to a GI pipe of 19 mm, 1 Mtr. long with a funnel at the other end, 5 cm above the ground. The earth lead shall be properly fixed to the pipe electrode with brass bolts, nuts and washers. The funnel and earth lead connections shall be enclosed in a masonry chamber of 30 x 30 x 30 cm. dimensions. The chamber shall be provided with a CI frame and CI cover. Proper permanent identification tag/label shall be provided for each electrode.

h) INSTALLATION

All joints shall be reverted and sweated. Joints in the earth bar shall be bolted and the joints faces tinned. Where the diameter of the bolt for connecting earth bar to apparatus exceeds one quarter of the width of the earth bar, the connection to the bolt shall be made with a wider piece of flange of copper jointed to earth bar. These shall be tinned at the point of connection and special care taken to ensure a permanent low resistance contact to iron or steel. All steel bolts, nuts, washers, etc shall be cadmium plated. Main earth bars shall be spaced sufficiently away from the surface to which they are fixed, such as walls or the side of trenches to allow for easy connections. Copper earth bars shall not be fixed by ferrous fittings. The earthing shall be suitably protected from mechanical injury by galvanized iron within ground shall be buried at least 60 cm deep. The earthing lead shall be securely bolted and soldered to the plate or pipe as the case may be. In the case of the plate, the lead shall be connected by means of cable socket with two bolts and nuts. All washers shall be of the same materials as the plate or pipe. All iron bolts, nuts and washers shall be galvanized.

i) Method of Installation of watering arrangement

In the case of plate earth electrode a watering pipe of 20 mm dia of medium class GI pipe shall be provided and attached to the electrode. A funnel with mesh shall be provided on the top for watering the pit. In case of pipe earth electrode a 40 mm x 20 mm reducer shall be used for accessing the funnel. The watering funnel attachment shall be housed in masonry enclosure of not less than 30 cm x 30 cm x 30 cm. A cast iron cover having locking arrangement shall be suitably embedded in the masonry enclosure.

j) PRECAUTIONS

Earthing system shall be mechanically robust and the joints shall be capable of retaining low resistance even after passages of fault currents.

- 1 Joints shall be soldered, tinned and double riveted. All the joints shall be mechanically and electrically continuous and effective. Joints shall be provided against corrosion.

- 2 The earthing lead from electrode onwards shall be suitably protected from mechanical injury by a 5 mm dia GI pipe in case of wire and by 40 mm dia medium class GI pipe in case of strips. Portion of this protection pipe within the ground shall be buried at least 30 cm deep (to be increased to 60 cm in case of road crossing and pavements). The portion within the building shall be recessed in walls and floor to adequate depth.

l) TESTING

- 1 On the completion of the entire installation, the following tests shall be conducted and no earth electrode shall have ohmic resistance of more than 2 ohm and in rocky soil not more than 3 ohms.
 - Earth resistance of electrodes
 - Impedance of earth continuity conductors as per E-3 of IEE regulations.
 - Effectiveness of earthing as per E-4 & E-5 of IEE regulations.

- 2 All meters, instruments and labour required for the tests shall be provided by the contractor. The test results shall be submitted in triplicate to the Architects for approval.

BILL OF QUANTITIES

NO	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
A. Installation, Testing & Commissioning of 250 kva DG Set					
1.	Installation on foundation as per manufacturers recommendation and fitting with AVM pads, alignment, testing and commissioning of DG Set complete in all respect of following capacity complete with AMF panel etc.				
a)	250 kva DG Set	Set	1		
A1. Installation, Testing & Commissioning of 20 KVA DG Set					
1.	Installation on foundation as per manufacturers recommendation and fitting with AVM pads, alignment, testing and commissioning of DG Set complete in all respect of following capacity complete with AMF panel etc.				
a)	20 KVA DG Set	Set	1		
B. Exhaust System for 250 kva DG Set					
1.	Supplying and erection of the following sizes of MS piping and bends with flanges nut, bolts and gaskets etc. for Exhaust System , including providing suitable supporting arrangement at suitable intervals, painting etc. as required including making necessary arrangement like scaffolding etc. for fixing Exhaust Pipes.				
a.	100 mm dia	Rm	6		
b.	150 mm dia	Rm	30		
c.	MS short Bend, 90 degree, 100 mm dia	No	1		
d.	MS short Bend, 90 degree, 150 mm dia	No	1		
2.	Supplying and fixing of 75 MM thick, mineral wool insulation of 142 KG per cubic meter density over the exhaust pipes including cladding with aluminium sheet of 26 SWG covering from outside complete.				
a.	100 NB	Rm	6		

b.	150 dia	Rm	30
c.	Insulation of residential silencer suitable for 1 No. 250 kva DG Set	LS	1
3.	Supplying and fixing of the following S.S. exhaust Expansion Bellows.		
a.	100 mm dia size	No	1
4.	Supplying and fixing of support structure as per manufacturers recommendation for Exhaust Pipes.		
a.	For 100/150 mm dia pipe	Kg	400

B1. Exhaust System for 20 KVA DG Set

1.	Supplying and erection of the following sizes of MS piping and bends with flanges nut, bolts and gaskets etc. for Exhaust System , including providing suitable supporting arrangement at suitable intervals, painting etc. as required including making necessary arrangement like scaffolding etc. for fixing Exhaust Pipes.		
a.	100 NB	Rm	5
b.	150 dia	Rm	15
b.	MS short Bend, 90 degree, 100 mm dia	No	1
2.	Fixing of 75 MM thick, mineral wool insulation of 75 KG per cubic meter density over the exhaust pipes including cladding with aluminium sheet of 26 SWG covering from outside complete.		
a.	100 NB	Rm	15
c.	Insulation of residential silencer suitable for 1 No. 20 KVA DG Set	LS	1
3.	Supplying and fixing of the following S.S. exhaust Expansion Bellows.		
a.	100 mm dia size	No	1
4.	Supplying and fixing of support structure as per manufacturers recommendation for Exhaust Pipes.		
a.	For 100 mm dia pipe	Kg	150

C. Fuel Supply System for 250 kva DG Set

- | | | | |
|----|--|-----|-----|
| 1. | Supply and Installation 250 Litres day oil tank with necessary MS work, including testing and commissioning of fuel tank. | Set | 1 |
| 2. | Supply, laying and fixing in position the following MSERW class-C pipes cut to required lengths and installed with all ER welded joints including providing and fixing in position the necessary fittings like bends, tees, reducers, sockets, clamps painting etc. as required. pipe cut to required lengths and installed with all ER welded joints including providing and fixing in position the necessary fittings like elbows, tees and reducers, sockets clamps, painting etc. as | | |
| a. | 25 MM NB Pipe | Rm | 25 |
| 3. | Supply and fixing in position the following GM Gate Valves (with flanged ends) | | |
| a. | 25 MM NB Valves | No | 1 |
| 4. | Supply first fill of diesel | Lt | 900 |
| 5. | Supply first fill of lub oil | Lt | 25 |

C1. Fuel Supply System for 20 KVA DG Set

- | | | | |
|----|--|-----|----|
| 1. | Supply and Installation 80 Litres day oil tank with necessary MS work, including testing and commissioning of fuel tank. | Set | 1 |
| 2. | Supply, laying and fixing in position the following MSERW class-C pipes cut to required lengths and installed with all ER welded joints including providing and fixing in position the necessary fittings like bends, tees, reducers, sockets, clamps painting etc. as required. pipe cut to required lengths and installed with all ER welded joints including providing and fixing in position the necessary fittings like elbows, tees and reducers, sockets clamps, painting etc. as | | |
| a. | 25 MM NB Pipe | Rm | 25 |
| 3. | Supply and fixing in position the following GM Gate Valves (with flanged ends) | | |
| a. | 25 MM NB Valves | No | 1 |
| 4. | Supply first fill of diesel | Lt | 50 |

5.	Supply first fill of lub oil	Lt	25
D. Supplying of Cables and Terminations for 250 / 20 KVA DG Set			
1.	Supplying & Laying the following 1100V grade aluminum conductor armoured cables.		
a.	3½ x 240 SQ MM	RM	30
b.	3½ x 95 SQ MM	RM	30
2.	Cable termination of the following PVC insulated aluminum conductor armoured cables of 1100V grade including cost of thimbles / lugs, single compression nickel plated brass glands, cables sockets, insulation tape and crimping etc. complete as required.		
a.	3½ x 240 SQ MM	No	4
b.	3½ x 95 SQ MM	No	4
3.	Supplying & Laying the following 1100V grade copper conductor armoured control cables.		
a.	4 C x 2.5 SQ MM	RM	40
b.	7 C x 2.5 SQ MM	RM	40
c.	12 C x 2.5 SQ MM	RM	40
E.	Accoustic Enclosure suitable for 250 kva DG Set complete with necessary ventilation system.	Set	1
E 1	Accoustic Enclosure suitable for 20 KVA DG Set complete with necessary ventilation system.	Set	1
F. Earthing Electrode			
1.	Providing and laying earth eletrode with 600x600x3.15mm copper plate with 2 nos 25mm x3mm copper strips from earth electrode to inspection chamber, 50mm dia medium class GI pipe, CI funnel with 20 gauge GI wire mesh, 300x300x300 mm brick masonry chamber and C.I. Cover with frame painted with bitumastic paint & packing with mixtures of charcoal and common salt anound plate electrode including digging of pit upto 5-6 mtrs and back filling as required etc complete.	No	8

2.	Providing, Fixing and laying 25mm x 3mm copper strips (with heat shrinkable pvc sleeves on strip)	RM	160
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G Supplying and fixing of light fixtures, wiring and limit switch for accoustic enclosures.

1.	Supplying & fixing of 1 x 36 W flourescent fixture alongwith tube (Philips make) TMC 501/136 HPF.	No	7
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2.	Wiring to light fixture with 2 x 1.5 sq mm + 1 x 1.5 sq mm FRLS PVC insulated copper conductor wires in 20 mm dia 16 SWG MS conduit.	No	7
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3.	Supplying and fixing limit switch to control light fixtures.	No	7
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Total Carried Over To Summary

Refer Spedial Condition 14. **Performa**
To be executed on Rs. 10/- stamp paper

GUARANTEE CERTIFICATE

GUARANTEE FOR ELECTRICAL INSTALLATION WORK

We hereby guarantee that the installation of **250 kva &20KVA , DG Set with accessories** installed for **National Horticulture Board, Plot no.-85, SECTOR-18, Institutional Area, Gurgaon**, as below:

Building: **National Horticulture Board,**

Location **Plot no.-85, SECTOR-18, Institutional Area, Gurgaon**

Owner: **National Horticulture Board**

For a period of twelve (12) months from this date, the date of acceptance of the installation

We agree to repair or replace to the satisfaction of the owner any or all such work that may prove defective in workmanship, equipment, or material within that period, ordinary wear & tear or unusual abuse or neglect expected, together with any other of our failure to comply with the above mentioned conditions within a reasonable time after being prenotified in writing, we collectively and separately, do hereby authorize the owner to proceed to have defects repaired and made good at our expenses, and shall bear the cost and charges thereof immediately upon demand

Signed (Contractor)
With seal, stamp
And date