

**HLL LIFECARE LIMITED
(A Government of India Enterprise)
P.B.NO.2, PEROORKADA.P.O,
THIRUVANANTHAPURAM - 695 005
KERALA, INDIA**

**TENDER DOCUMENT
(PRICE BID)**

FOR THE

HT ELECTRIFICATION WORK

FOR

**NEW CONDOM MANUFACTURING FACILITY
AT RUBBER PARK, IRAPURAM, KOCHI**

HLL LIFECARE LIMITED
(A Government of India Enterprise)
Project Division, Peroorkada. PO,
Thiruvananthapuram – 695005,
Kerala, India
Phn: 0471 – 2437270, 2437884
Fax: 0471 – 2432898, 2432647

INVITATION FOR BIDS (IFB)

IFB No: HLL/IP/IFC/HTSS/2013
Date : 11-10-2013

HLL Lifecare Limited (HLL), a Government of India Enterprise, is setting up a new condom production facility at Rubber Park, Irapuram, Cochin. For the said project, Sealed and Super scribed bids are invited from competent and experienced Electrical contractors who are capable to do the following work meeting the requirements as per our tender.

SI No	Name of Work	Estimated cost (PAC)	EMD Amount
1	Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi	Rs 200 Lakhs	Rs 2 Lakhs

2. Eligibility criteria for QUOTING:

- a) The Electrical Contractor should possess valid 'A' class license issued by State Electricity Authorities.
 - b) Tenderer should have minimum 5 years experience in the relevant field.
 - c) Tenderer should have satisfactorily completed
 1. Minimum 1 work of value not less than Rs 150 Lakhs during the last 5 years
or
 2. Minimum 2 works of value not less than Rs 100 Lakhs each during the last 5 years
or
 3. Minimum 3 works of value not less than Rs 80 Lakhs each during the last 5 years
 - d) Average annual financial turn over of the bidder during the last 3 years, ending 31st March of the previous financial year, should be at least Indian Rupees (INR) 100 Lakhs
3. A complete set of tender documents can be had from the Office of Projects Department at HLL Lifecare Limited, Peroorkada Factory, Thiruvananthapuram – 695 005 during office hours on any working day on submission of written application and a non-refundable fee of Rs.1500/- (including taxes) in the form of DD drawn in favour of HLL Lifecare Limited, Trivandrum to the undersigned.

The Tender Documents can also be downloaded from our Website www.lifecarehll.com from the date of issue of tender document. The tender fees shall be submitted along with the technical bids while submitting the offer.

Tender forms shall be filled in ink or typed. No tender filled in pencil shall be considered. The tenderer shall sign and seal the form at each page and at the end, in token of acceptance of all the terms and conditions of the tender.

4. The bid documents will be available up to 15.00 Hrs. on the previous working day of the opening of the bids. The scheduled date for issue, receipt and opening of bids is as follows.

- a) Date of issue of tender document - 22-11-2013
- b) Last date and time for receipt of bids - 11-12-2013 at 15:00 Hrs
- c) Date and time of opening of bids - 11-12-2013 at 15:30 Hrs

5. Address for communication, receipt and Place of opening of bids.

EXECUTIVE DIRECTOR (INTERNAL PROJECTS)
HLL LIFECARE LIMITED, PEROORKADA,
THIRUVANANTHAPURAM – 695 005
KERALA, INDIA
Phn: 0471 – 2437270, 2437884
Fax: 0471 – 2432898, 2432647
E-mail: nraivikumar@lifecarehll.com, harikrishnankp@lifecarehll.com

6. The completed bid documents and all schedules should be submitted to **Executive Director (Internal Projects)** in the above address along with sealed bids and the EMD. Bids received after due date and time will be rejected. Any bid not accompanied by EMD will be rejected.
7. Bids will be opened in the presence of Bidders representative(s) who choose to attend on the specified date and time, at the office of HLL at the address given in Clause 5 above.
8. In the event of the date specified for bid receipt and opening being declared as a closed holiday for HLL's office, the due date for submission of bids and opening of bids will be the following working day at the appointed times.
9. HLL may, at its discretion, extend this deadline for submission of bids by amending the Bid Documents or any other reasons, in which case all rights and obligations of the HLL and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.
10. HLL will not be held responsible for the postal delay, if any, in the delivery of the bidding document or the non-receipt of the same. Bids sent by Telex/Fax/Telegraph will not be accepted.
11. The company reserves the right to club or split the items of works, change the qualifying criteria at their discretion and to reject or cancel the tender without assigning any reason there of.

EXECUTIVE DIRECTOR (INTERNAL PROJECTS)

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SCHEDULE I

CONDITIONS OF BID

1. Definitions

In this Contract, the following words and expressions shall have the meanings as stated below:

- a. **"INVITATION FOR BID"** shall mean and include the present document, and such other complements and agenda, which may subsequently be issued in this connection.
- b. **"BIDDER/TENDERER"** shall mean the person, firm or Corporation submitting a bid against this invitation for bid and shall also include his agents and representatives.
- c. **"OWNER"** shall mean **HLL LIFECARE LIMITED (HLL)** (Thiruvananthapuram) or its units thereof.
- d. **'ENGINEER-IN-CHARGE'**, shall mean the Engineer appointed by the Owner to supervise all activities of the project.
- e. **'CONTRACTOR'**, shall mean the successful bidder whose tender has been accepted by the Owner and to whom the order is placed by the Owner and shall include his heirs, legal representatives, successors etc.
- f. **'PERMANENT WORKS'**, means and include all the work specified or set forth and required if any by the specification, drawings and other documents which form part of this contract or to be implied thereof or incidental thereof to be hereafter or required in such further explanatory instructions, drawings etc., as shall from time to time during the progress of the work be given by the HLL.
- g. **'SITE'**, shall mean the actual place i.e. **HLL LIFECARE LIMITED, RUBBER PARK, IRAPURAM, KOCHI**, where the project is to be executed.
- h. **'PROJECT'**, shall mean entire work specified in the contract documents inclusive of extra items/ extra quantities (if any) executed during the contract period.
- i. **'ACCEPTANCE LETTER'**, shall mean written consent by a letter of Owner to the bidder intimating him that his tender has been accepted.
- j. **'CONTRACT'**, shall mean the articles of Contract Agreement, the conditions of contract, schedule of quantities, specifications, drawings attached and duly signed by the Owner and the Contractor.
- k. **'DATE OF CONTRACT'**, shall mean the date on which the successful bidder has accepted the notification of award.
- l. **'CONTRACT PERIOD'**, shall mean the period (including rainy season) specified in the tender documents during which the contract shall be executed.
- m. **'COMPLETION CERTIFICATE'**, shall mean the certificate issued by the Owner to the Contractor after successful completion of the project.
- n. **'EXTRA ITEMS'**, are those items, which are not appearing in the Schedule of Items but required to be executed during the project period.

2. Bid Information and Period of Validity

2.1 Bidders shall submit their bids in two parts (**TECHNICAL BID** and **PRICE BID**)

2.2 The Technical Bid must include the following information;

- a. Enquiry No.
- b. Tender Fees
- c. Earnest Money Deposit as prescribed in the tender
- d. All the details and documents mentioned in the Technical Bid.
- e. Promised Completion Schedule
- f. Certificate that bid is in total conformity with the specifications and terms and conditions mentioned in the bid document and if not, list of exclusions, and/or exceptions.
- g. All other documents/certificate/information as specified in the bid document.

2.3 The Price Bid must be as per the following

- a) The bid is invited for **“Supply, Installation, Testing and Commissioning of 2000KVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi”** as per the Specification, Terms and Conditions specified in the Bid Documents. The Bidder shall give the rates inclusive of relevant taxes, duties, other levies, on the appropriate price schedule (**Schedule of Quantities**) attached to these documents for completing the above work as per the Specification, Terms and Conditions as specified in the Bid Documents.
- b) Bidder must quote for unit price and total price based on the requirement shown in the bid document.
- c) Price should be firm without any escalation on any account till the completion of work.

2.4 Bids shall remain valid for **90 days** after the date of bid opening prescribed by the Purchaser.

3. Format and Signing of Bid

3.1 Bidders shall submit their bids in two parts (TECHNICAL BID and PRICE BID) as under.

- a) Technical bids, in duplicate clearly marking each “Original Bid” and “Copy Bid”, as appropriate, consisting of technical details bringing out clearly in a separate sheet, the deviations in specifications if any, from that of ‘Technical Specifications’ and also clause-by-clause compliance of specifications and commercial terms and conditions and EMD, excluding price, in separate sealed covers super scribing “Technical Bid” inside a main cover.
- b) Price bids, in duplicate clearly marking each “Original Bid” and “Copy Bid”, as appropriate, showing only item wise and total prices in separate sealed covers super scribing “Price Bid” inside a main cover.

3.2 When the main cover is opened on the date and time scheduled for bid opening, only the technical bids will be opened.

3.3 Bidders whose technical bids are found substantially responsive will be informed of the date and time of opening of their price bids. Price bids of others will be returned to them unopened.

- 3.4 All pages of the bid, except for un-amended printed literature shall be signed by the person or persons signing the bid. The seal of the company shall be stamped in all pages.
- 3.5 Bids shall be made in English.
- 3.6 The bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be signed by the person or persons signing the bid.

4. Submission of Bids

Sealing and Marking of Bids

- 4.1 The envelopes shall be:
- (a) Addressed to the Owner in the following address and
- EXECUTIVE DIRECTOR (INTERNAL PROJECTS)
HLL LIFECARE LIMITED, PEROORKADA,
THIRUVANANTHAPURAM – 695 005
KERALA, INDIA
Phn: 0471 – 2437270, 2437884
Fax: 0471 – 2432898, 2432647
E-mail: nnavikumar@lifecarehll.com, harikrishnankp@lifecarehll.com
- (b) Bear the Enquiry No, closing date and General description of item tendered, and the words “DO NOT OPEN BEFORE” 15.30 Hrs (IST) on ___ (Opening Date) _____
- 4.2 The inner envelopes shall indicate the name and address of the Bidder. If the outer envelope is not sealed and marked as indicated above, the Owner will assume no responsibility for the bid’s misplacement or premature opening.
- 4.3 Bids should be hand delivered or sent by courier/mail to ensure timely arrival. Telex, cable, e-mail or facsimile bids will be rejected.

Deadline for submission of Bids

- 4.4 The bids will be received by the Owner in the following address not later than the date and time specified in the Invitation for Bids.
- EXECUTIVE DIRECTOR (INTERNAL PROJECTS)
HLL LIFECARE LIMITED, PEROORKADA,
THIRUVANANTHAPURAM – 695 005
KERALA, INDIA
Phn: 0471 – 2437270, 2437884
Fax: 0471 – 2432898, 2432647
E-mail: nnavikumar@lifecarehll.com, harikrishnankp@lifecarehll.com
- 4.5 In the event of the specified date for submission of Bids being declared a holiday for the Owner, the bids will be received up to the appointed time on the next working day.
- 4.6 The Owner may, at its discretion, extend this deadline for submission of bids by amending the Bid Documents or any other reasons in which case all rights and

obligations of the Owner and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

- 4.7 It is the responsibility of the bidders to see that the completed bidding documents whether sent by post or by courier or by person are received in the office of Executive Director (Internal Projects), in the above address by the date and time stipulated for receipt as above failing which the bid would be considered late and rejected. The Owner will not be held responsible for the postal delay, if any, in the delivery of the bidding document or the non-receipt of the same. Bids received after due date and time will be rejected. Mere handing over of the bid documents at reception counter or at any other counter or room or person cannot be considered as submission of bid.

5. Clarification of Bidding Documents

A prospective Bidder requiring any clarification of the Bidding Documents may notify the Owner in writing, or by fax at the Owners mailing address indicated in the Invitation for Bids. The Owner will respond in writing to any request for clarification of Bidding Documents, which it receives not later than 7 days prior to the deadline for submission of Bids prescribed by the Owner.

6. Amendment of Bidding Documents

- 6.1 At any time prior to the deadline for submission of bids, the Owner may, for any reason, modify the Bidding Documents by amendment.
- 6.2 The amendment will be notified in writing or fax or telegram or e-mail to all prospective Bidders, which have received the Bidding Documents and will be binding on them. Amendments will also be uploaded on the website.
- 6.3 In order to afford prospective Bidders reasonable time in which to take the amendment into account in preparing their bid, the Owner may, at its discretion, extend the deadline for the submission of bids.

7. Bid Opening by Owner

- 7.1 The Owner will open bids, in the presence of the bidders' representatives who choose to attend, at the date and time specified and in the location given in this document. The Bidders' representatives who are present shall sign a register evidencing their attendance. In the event of the specified date of bid opening being declared a holiday for the Owner, the bids shall be opened at the appointed time and location on the next working day.
- 7.2 The Bidders' names, the presence or absence of the requisite EMD and such other details as the Owner, at its discretion, may consider appropriate will be announced at the opening.
- 7.3 The Owner will prepare appropriate bid opening register and bidders present during the opening of the bids and Owner shall sign the same.

8. Clarification of bids

To assist in the examination, evaluation and comparison of bids, the Owner may, at its discretion, ask the bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in the rate or substance of the bid shall be sought, offered or permitted.

9. Inspection of site

Every tenderer is expected to inspect the site of the proposed work and acquaint himself with the site conditions, approaches etc. before quoting his rates. No claim whatsoever should be entertained later on the plea of any difficulties involved in the execution of work, which was or was not foreseen by the tenderer.

10. Preliminary examination

- 10.1 The Owner will examine the bids to determine whether they are complete, whether any computational errors, have been made, whether required EMD has been furnished, whether the documents have been properly signed, whether the bid validity is as required and whether the bids are generally in order.
- 10.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be calculated. If there is a discrepancy between the words and figures of unit price, the amount in words of unit price shall prevail.
- 10.3 Prior to the detailed evaluation, the Owner will determine the substantial responsiveness of each bid to the bidding documents. For purposes of these clauses, a substantially responsive bid is one, which conforms to specifications and all the terms and conditions of the bidding documents without material deviation. The Owner's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.
- 10.4 A bid determined as not substantially responsive will be rejected by the Owner and may not subsequently be made responsive by the bidder by correction of the non-conformity.
- 10.5 The Owner may waive any minor informality or non-conformity or irregularity in a bid, which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any bidder.
- 10.6 The Owner's determination as to the substantial responsiveness or otherwise of each bid or consideration of a minor informality or non-conformity or irregularity is final and conclusive.

11. Evaluation and comparison of bids.

- 11.1 The purchaser reserves the right to examine the details given in the technical bid by visiting the office and work place of the bidder and take decision based on the visit.
- 11.2 The purchaser will technically evaluate all bids previously determined to be responsive and open the price bids previously determined to be substantially responsive and technically acceptable with intimation.

12. Post – qualification

- 12.1 Notwithstanding the qualification requirements given in this document, the Owner will determine to its satisfaction whether the Bidder selected as having submitted the lowest evaluated responsive bid is qualified to satisfactorily perform the Contract.
- 12.2 The determination will take into account the Bidder's financial, technical and execution capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, as well as such other information as the Owner deems necessary and appropriate.
- 12.3 The Owner reserves the right to negotiate with the lowest evaluated responsive bidder.
- 12.4 An affirmative determination will be a prerequisite for award of the Contract to the Bidder. A negative determination will result in rejection of the Bidder's bid, in which event the Owner will proceed to the next lowest evaluated bid to make a similar determination of that bidder's capabilities to perform satisfactorily.

13. Award Criteria

The Owner will award the Contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined as the lowest evaluated bid provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily for the items offered.

14. Notification of Award

- 14.1 Prior to the expiration of the period of bid validity, the Owner will notify the successful Bidder in writing by or cable or telex or fax, to be confirmed in writing by post, that its bid has been accepted. The notification of award may be sent in the form of Letter of Intent and/or Work order.
- 14.2 The signed acceptance of the notification of award by the Contractor will constitute a concluded contract.

15. Security Deposit & Execution of Agreement

- 15.1 On receipt of notification of award from the Owner, within thirty days the successful Bidder shall furnish the security deposit in the form of a Demand Draft from a nationalized bank drawn in favour of HLL Lifecare Limited, Peroorkada Thiruvananthapuram payable at Thiruvananthapuram for an amount equal to **5% of the contract price** on the value of the contract for his faithful execution of contract and shall execute an agreement with the Owner in the form attached on proper stamp paper.
- 15.2 The Security deposit should be valid until successful completion of the contract and acceptance and handing over of the works and will be released after acceptance of the work by the Owner.
- 15.3 Failure of the successful Bidder to accept the notification of award or submission of security deposit within the timeframe shall constitute sufficient grounds for the annulment of the award and forfeiture of the EMD, in which event the Owner may make the award to the next lowest evaluated bidder or call for new bids.

16. Earnest Money

- 16.1 Each bid must be accompanied by E.M.D.
- 16.2 The EMD is required to protect the Owner against risk of Bidder's conduct, which would warrant the security's forfeiture
- a. The EMD shall be in the form of Demand Draft from a nationalized bank drawn in favour of HLL Lifecare Limited, Peroorkada, Thiruvananthapuram payable at Thiruvananthapuram.
 - b. E.M.D. of the unsuccessful bidders will be released after tabulating tenders, keeping only the earnest money of the first three lowest bidders. The earnest money deposit of the remaining two unsuccessful bidders will be released after the acceptance of the notification of award by the successful bidder.
 - c. In the case of successful bidder, the Earnest Money will be returned after signing the agreement and submission of Demand Draft towards Security Deposit, which they will have to offer for the faithful execution of the contract.
- 16.3 The EMD may be forfeited:
- (a) If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Document; or
 - (b) In case of the successful Bidder, if the Bidder fails:
 - (i) To sign the agreement.
 - (ii) To furnish security deposit.

SCHEDULE:- II

GENERAL CONDITIONS OF CONTRACT

1.0 PROJECT INFORMATION

1.1 General:

The detailed information of the project given below is as per our present requirement. However, it is not binding on the Owner in any way and shall not govern the scope of works.

1.2 Location of Site:

The project site is located at **HLL LIFECARE LIMITED, PLOT NO-1, RUBBER PARK, IRAPURAM, KOCHI.**

1.3 Price

Price quoted should be firm without any escalation till the Contract is completely executed and should be for the item/work shown under **SCHEDULE OF QUANTITIES.**

The rates quoted must be firm and include the cost of transportation of material to the site, all taxes such as Sales Tax, Excise duty and Octroi etc. and the fixing or placing in position for which the item of work is intended to be operated. The rates quoted by the Contractor shall be firm throughout the contract period and there shall be no upward revision of the rates quoted by the contractor for any reason whatsoever.

It should be clearly understood that any claims for extra Sales Tax, Excise duty, Construction tax or any additional tax etc. shall not be entertained in any case whatsoever once tenders are opened

1.4 Site Facilities:

The contractor has to remove all left over, excess, scrap material from the site and restore the site to fully clean condition as and when required. In case he fails to do so, the Owner reserve the right to remove such materials from the site and expenses incurred in this case shall be deducted from the payments due to the contractor. However, no claim for any loss of material in this case shall be acceptable.

2 COMMITMENT OF CONTRACTOR

2.1 Interpretation of Contract documents:

2.1.1. All the documents forming part of the contract are to be taken as mutually explanatory, supplementary and complementary to each other. If there is any error, omission or discrepancy in any of them, it shall be brought to the notice of the Owner. The decision of the Owner shall be final and binding. The contractor shall execute the work accordingly.

2.1.2 The contractor shall examine all the contract documents thoroughly including the scope, nature and magnitude of works he has to execute in accordance with the contract documents.

2.1.3. The contractor shall visit the project site so as to study the site conditions, means of access to the site and other factors governing the works.

2.1.4. There may be change in layout of site as per technical requirements and the tenderer shall not be entitled for any claim due to such changes & should carry out such changes.

2.2 Delay in work execution due to reasons beyond contractor control

2.2. A Force majeure:

If the execution of work is delayed due to force majeure, then owner as per the affected period may extend the time period.

2.2.B Owners supplied material in case work is delayed due to non-availability of stores supplied by Owner or any decision by Owner holding the progress of work, the contractor then upon any such happening causing delay shall immediately but not later than 10 days, give notice thereof in writing to the Owner, but nevertheless use constantly his best effort to prevent or make good delay. The Owner may in his discretion grant such extension of time as may appear reasonable to him and the same shall be communicated to the contractor in writing and shall be final and binding on him and the contractor shall be bound to complete the work within such extended time.

2.3 Period of Completion

Time is the essence of the contract. Time of completion allowed is **THREE MONTHS** from the date of acceptance of **Letter Of Intent/Work Order**.

Time Schedule:

The successful tenderer shall submit the time schedule in the form of charts before commencing the work and shall execute the work strictly as per the schedule submitted by him and approved by the Owner on turnkey basis.

2.4 Compensation for delay:

Time is the essence of the contract. If the contractor fails to complete the work and clear the site on or before the dates fixed for completion, he shall without prejudice be liable to pay liquidation damage (LD) i.e. **0.5 % of the contract value for every week that the whole or the part of work remains incomplete**. For the purpose of this condition, the contract value shall be total value of quantities of items in the contract at contract rates plus algebraic sum of the subsequent work ordered. However, **the total amount of LD to be paid under this condition shall not exceed 7.5% percent of the contract value**.

2.5 Default of Contractor:

If the contractor fails to maintain progress and quality of work proportionate to time period allotted for the work in spite of notices or complete the work within the stipulated time period or extended time period, then the Owner shall have the right:

- i) To determine the contract: In this event, the contract shall be terminated by giving written notice to the contractor and the unfinished works shall be got completed by labours engaged by the Owner or through other agency at the cost of the Contractor.

- ii) Without determining the contract: In this event, the remaining works shall be got executed through a fresh contractor in which case the Contractor shall not have any objection or claim on this account.
- iii) Before determining the contract: In this event, if the Owner finds that the defaults of the Contractor can be rectified, then an opportunity shall be given to the same contractor to rectify the defects /defaults in the specified time.
- iv) Termination of contract for death: If the contractor is an individual of a proprietary firm and proprietor of the firm dies and if the Contractor is a Attorney of partnership firm and dies, then the Owner has the right to terminate the contract unless and until the Owner is satisfied that the surviving partners are capable of executing and completing the remaining contract. In case of termination of contract, the legal representatives of the deceased Contractor are not entitled for any compensation or claim. Also, the Owner shall not levy any penalty against the damage caused by incomplete work.
- v) Termination of Contractor in part or in full for Contractors default: If the Contractor fails to execute the work in the manner described in the contract documents or if he at any time, in the opinion of the Owner:
 - a) Fails to carry out the works in accordance with the contract conditions or as per the specifications mentioned in the documents.
 - b) Stops the execution of works without giving prior information to the Owner.
 - c) Fails to carry out the works to the satisfaction of the Owner both with respect to qualities and time schedule.
 - d) Fails to supply sufficient or suitable construction plant, materials and labours etc.
 - e) Commits breach of any of the provisions of the contract.
 - f) Abandons the work.
 - g) becomes bankrupt during the continuance of the work.

Whenever the Owner shall exercise his authority to cancel the contract under the above condition, the Owner shall be at liberty to hold and retain in their hands materials, tackles, machinery and stores of all kinds on site as they may think proper and may at any time sell any of the materials, tackles, machinery and stores and apply the proceeds of sale in or towards the satisfaction of any loss which may arise from the cancellation of contract as aforesaid. The Owner shall also be at liberty to use materials, tackles, machinery and other stores on the site of contractor as they think proper in completing the work and the Contractor will be allowed the necessary credit. The value of materials and stores and amount of credit to be allowed for tackles and machinery belonging to Contractor and used by Owner in completing the work shall be assessed by the Owner and amount assessed shall be final and binding on the Contractor. In case Owner completes or decides to complete the work under the provisions of this condition, the cost of completion to be taken into account in determining the excess cost to be charged to the Contractor under the condition shall consist of the cost of materials purchased or required to be purchased, labour provided or required to be provided.

2.6 Variation in scope of works:

- a) Variation in quantity:

The Owner has the right to increase or decrease the quantity of work or delete/add certain items of work. However such changes shall not entitle the contractor for any compensation, claim regarding the change in scope of work.

b) Variation in drawings and specifications:

- i) The variation in scope may be by way of changes in drawings regarding dimensions but specification remaining the same. In such a case the contractor shall not be entitled for any claim due to change.
- ii) In case of change of specification it shall be worked out as given in Clause 3.8

2.7 Staff and Workers:

The contractor shall depute qualified engineers for execution of the project. The technical staff employed by the contractor shall be responsible for the quality and workmanship of the work as per the satisfaction of the Owner. The Contractor's supervisory staff should follow the instructions given by the Owner or his authorised representative. If any of the Contractor's staff members is incapable or in-experienced, in the opinion of the Owner, then he should be removed immediately and the contractor should do suitable substitution. Technical staff employed should be degree holder from a government-recognized institution or equivalent with at least 3 years practical experience of work in addition to Diploma holder and other experienced supervisory staff.

If the workers or the supervising staff of the contractor are involved in riotous or illegal activities to such an extent that it becomes necessary to hand over the matter to the police then the contractor would be solely responsible for the case and all the expenses incurred in the legal proceedings shall be borne by the contractor.

2.8 Subletting of contract:

No subletting of contract is permitted. Specialized work agency contracts may be permitted with prior permission.

2.9 Co-operation with other agencies at site:

The Contractor or his authorised representatives must work in close co-operation with the agencies executing other works forming the part of the project and also with the representatives of the Owner for the execution of works which are not included in the contract. Contractor shall permit free access and generally afford reasonable facilities to other agencies or departmental workmen etc.

The Contractor's quoted amount/rate shall be deemed to cater for all the above contingencies and nothing extra shall be admissible on this account.

2.10 Contractor should keep his working site clean and the materials brought for work shall be kept in a properly stacked / stored way.

The work site should be swept at the end of each working day after removal of debris/ left over materials. The Contractor has to take full care so as not to spoil or damage other Contractor's/ Owner's job / material.

2.11 Safety of adjoining properties:

The Contractor or his authorized representatives should conduct all the operations necessary for the execution of works in such a manner that no inconvenience / damages are caused to the properties of other persons & Owner.

2.12 Settlement of dispute:

Any disputes or difference arising between the parties with respect to the performance of any part of this agreement or any thing connected therewith, etc shall as far as possible be mutually settled by the process of dialog and negotiation.

The Courts at Trivandrum alone shall have jurisdiction in respect of settlement of any matter arising out or in connection with the contract.

2.13 Escalation:

The rates quoted by the Contractor in the contract documents shall be final and shall not be subjected to any change due to the increase in labour wages or inflation in the cost of materials or any other price variations due to any reason during the stipulated time period of the contract or during the extended time period of completion.

2.14 Insurance:

The Contractor shall at his own expense carry and maintain insurance with reputed insurance companies to the satisfaction of the Owner as under:

i) Insurance of works:

The Contractor shall take full responsibility for loss, damage and care of plant and works until it is delivered to site, constructed, erected, commissioned and taken over by Owner. Without limiting such responsibility, the contractor shall in the interest of the work insure the plant and work for their full value plus ten percent until they have been taken over. Such insurance shall cover the equipments and works against loss, damage or destruction by fire, earthquake, theft or any other cause, throughout the duration of the contract period or extended contract period.

ii) Insurance of employees:

The Contractor shall accept full and exclusive liability for the compliance of all obligations and responsibilities imposed by the Employees State Insurance Act, 1948 and any liability or penalty which may be imposed by the Central, State or Local Authorities due to the reason of violation by the contractor or sub-contractor of the Employees State Insurance Act, 1948. The Contractor shall agree to fulfill the requirement of the Employees State Insurance Corporation and maintain the declaration forms and all such forms, which may be, required in respect of the contractor's, sub-contractor's employees who are employed in the work provided for or those covered by E.S.I.C. from time to time under the agreement. The Owner shall retain such sum as may be necessary from the total contract value until the contractor shall furnish satisfactory proof that all contributions as required by the Employees State Insurance Act, 1948 have been paid by him.

iii) Workmen's Compensation:

Insurance shall be affected for all the Contractor's employees engaged for this contract. The Contractor shall also carry and maintain all other insurance, which may be required under any law or regulations from time to time. He should also carry and maintain any other insurance, which may be required by the Owner.

iv) Transit Insurance:

The cost of transit insurance relating to the items to be transported by the contractor to the site of work shall be borne by the contractor and the quoted price shall be inclusive of this cost.

v) Loss or damage and Indemnity Agreement:

The contractor shall be responsible during the progress of work as well as maintenance period for any liability imposed by law for any damage to work or any part thereof or to any of the material or other things including those of Owner used in performing the work or for injury to any person or persons or for any property damaged in or outside the site. The contractor shall indemnify and hold the Owner and the Engineer harmless against all liabilities, claims, loss or injury, including costs, expenses and attorney's fees incurred in the defense of same, arising from any allegation whether groundless or not, of damage or injury to any person or property resulting from the performance of the work or from any material used in the work or from any condition of the work or work site or from any cause whatsoever during the progress and maintenance of the work.

vi) Third party insurance:

Before commencing the execution of the works the Contractor, but without limiting his obligations and responsibilities, shall insure against his liability for any material or physical damage, loss or injury which may occur to any property, including that of the Owner, or to any person, including any representative of the Owner, by or arising out of the execution of works or in the work being carried out by the owner, by or arising out of the provision of clause 2.14.v here of. Such insurance shall be effected with an insurer and in terms approved by the Owner and for at least the amount stated in the Appendix of the Tender.

vii) The Contractor shall take **Contractor's All Risks Insurance (CAR)** policy, jointly in the name of HLL LIFECARE LIMITED and the Contractor and the insurance should be valid till the satisfactory completion of the work. The copy of the policy shall be deposited with HLL before commencing the work.

Note: The Contractor's payment shall be clear only after his compliance of all insurance formalities as given above. He shall have to deposit the photocopies of the various policies and payment receipts with the Owner's site engineer for this purpose.

3.0 EXECUTION OF WORK

3.1 General:

All the works shall be executed in accordance with the detailed drawings, specifications and instructions given by the Owner or mentioned in the contract document.

3.2 Drawings:

The drawings given in the tender document are as per our present requirement and are meant for the purpose of giving idea of the type and quantum of work to be executed.

All working drawings shall be marked "Released for Execution" and duly signed and approved by the Owner. All the old drawings shall be discarded and marked with "Superseded by Drg. No....."

If during the execution of the work, any discrepancy occurs in the drawings or between the drawings and specification then the same should be clarified from the Owner prior to the execution of work. The decision given by the Owner would be final.

3.3 Inspection of works:

i) The Owner shall have the full authority to inspect the works at any time, at any stage. The contractor shall provide adequate facilities to carry the inspection work. The Contractor should present himself or his authorised representative during the inspection so that the Owner can convey the instruction regarding the works.

- ii) The Contractor shall give information to the Engineer in charge before covering up the works so that the same can be inspected and measured jointly & correctly to true dimensions.
- iii) If the contractor fails to get the work inspected before covering it up, then the Owner has full authority to get the work uncovered at the expense of the Contractor and if any fault is found then the same should be rectified by the Contractor without claiming any extra payment.

3.4 Inadequate/substandard works and materials:

- i) If any material brought by the Contractor is found unsuitable or of sub-standard quality after testing, then the Contractor shall remove those faulty materials immediately from the site as per the instructions of the Owner.
- ii) If any work executed by the Contractor is found to be of bad workmanship or not as per the drawings, then the same is to be dismantled and re-executed by the Contractor without claiming any extra payment or extension in time period.

3.5 Default of Contractor in compliance:

If the contractor or his authorised representative fails to follow the instructions given by the Owner regarding any of the works, then the same shall be got executed by other persons employed by the Owner and the expenses incurred shall be borne by the Contractor.

3.6 Discrepancies between instructions:

If any discrepancy occurs between the various instructions conveyed to Contractor or his authorised representative or if any misunderstanding arises between the Contractor's staff and Owner's staff, the contractor shall report the matter immediately to the Owner. The decisions of Owner shall be final and binding. Moreover, no claims for losses due to discrepancies between instructions, doubts or misunderstandings shall be admissible.

3.7 Power to make alterations

The Owner shall have the power to make in writing any alterations, omissions, additions or substitutions for original specifications, drawings, designs, patterns and instructions that may appear to him necessary or advisable during the progress of the work and the contractor shall be bound to carry out the work in accordance with the instructions which may be given to him by the Owner or his representative. On submission of electrical scheme to the Electrical Inspectorate it is bound to have some changes in the panels, cables rating etc.

Such alterations, omissions, additions, substitutions shall not invalidate the contract. Any altered additional or substituted work which the contractor may be required to do in the manner specified above as part of the work shall be carried out by the contractor on the same conditions in all respect on which the main works was agreed to be done and at the rates derived according to clause 3.8.

3.8 Change in specifications and valuation of extra items:

Extra items may be classified as additional, substituted, or altered items, depending on their relation or otherwise to the original item or items of work.

Rates for authorities extra items, additional, altered or substituted work as may be ordered shall be determined by the "Owner" as follows:

- a. In the case of all extra items whether additional, altered or substituted, if accepted rates for identical items provided for in the contract, such rates shall be applicable.
- b. In the case of all extra items whether altered or substituted, for which similar items exist in the contract, the rates shall be derived from the original item by appropriate adjustment of cost of affected components. The percentage excess or deduction of the contract rate for the original item with reference to the estimated rate shall be applied in deriving the rates for such items.
- c. In the case of extra items, whether altered or substituted, for which similar items do not exist in the contract, the rates shall be arrived at on the basis of provision of standard data Book and schedule of rates 2013 of CPWD by adding profit of 15% and applying the contractor's quoted percentage above or below.
- d. In the case of extra items, whether additional altered or substituted, for which the rates cannot be derived from similar items in the contract, and only partly from similar items in the contract, and only partly from the CPWD rates, the rates for such part of parts of items as are not covered in the schedule of rates shall be determined by the Owner on the basis of the prevailing market rates giving due consideration to the analysis of the rate furnished by the Contractor with supporting documents, including contractor's profit. This shall be added on to the C.P.W.D rate revised as on 2013 (including contractor's profit). For the other part of the items the rates can be derived from the recent schedule of rates of C.P.W.D.
- e. In the case of extra item whether additional, altered, substituted, for which the rates cannot be derived either from similar item of work in the contract or from the departmental schedule of rates, the contractor shall within 14 days of the receipt of order to carry out the said extra item of work, communicate to the Owner the rate which he proposes to claim for the item, supported by analysis of the rate claimed and the Owner shall within one month thereafter, determine the rate on the basis or the market rate giving due consideration to the rate claimed by the contractor.
- f. The quantities indicated are approximate. On award of work and approval of the scheme, the contractor has to work out the actual quantities of each item of work and intimate to the Owner. No increase in cost shall be given for any additional quantities of any item given in the tender.

3.9 Work not specified in the specification:

If, for any work, no specification has been given in the tender document, then the work will be executed as per the IS specifications, and if the work is not covered by IS specifications also, then it should be executed as per standard engineering practice, subject to the recommendation and approval of the Owner.

3.10 Testing:

The Contractor shall agree for testing works as mentioned in the specifications of various items of works involved in the project.

- i) If the various tests prescribed in the specifications at specified intervals for ascertaining the quality of the work done prove unsatisfactory, the Owner shall have the authority to instruct the Contractor to re-execute the work done or make alterations as per the orders of the Owner.

- ii) The Contractor shall furnish to the Owner, for approval adequate samples of all materials to be used in the works free of cost. Such samples shall be submitted before the work is commenced, giving ample time to ascertain ISI approval/markings. All materials furnished in actual works shall be of the same quality of that of approved samples.
- iii) The testing of various equipments to be used in works shall be tested in standard laboratories as directed by the Owner and the expenses incurred shall be borne by the Contractor.

3.11 Progress Report:

During execution of the contract, the contractor shall furnish weekly progress reports to the Owner and in the format as specified by the Owner indicating the progress achieved during the week and the total progress up to the week as against scheduled and anticipated completion dates in respect of key phases of the work. The Contractor shall also furnish any other information in order to ascertain progress, if called for by the Owner.

3.12 Liabilities for defects and rectifications:

If it shall appear to the Owner that any work has been executed with imperfect or unskilled workman or with materials of any inferior description, or of quality inferior to that contracted for, or otherwise not in accordance with the contract, the Contractor shall on demand in writing from the Owner or his representative specifying the work, materials or articles complained of, notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith rectify or remove and reconstruct that work so specified and provide other proper and suitable materials or articles at his own charges and cost, and in the event of failure to do so within a period to be specified by the Owner or his demand aforesaid, the Owner may on expiry of notice period rectify or remove, re-execute the work at the risk of Contractor and the cost shall be recovered from the Contractor. The decision of the Owner as to any question arising under this clause shall be final and conclusive.

3.13 Defect liability Period:

The liability period of the work shall be 12 months from the date of completion of the work as certified by the Owner and this date will be as indicated in the provisional completion certificate. If any damage or defect occurs in the work during this period then the contractor shall rectify the damage or defect at his own expense to the satisfaction of the Owner. If the contractor fails to do so, then the Owner shall have the authority to get the work done by other means and the expenditure incurred shall be recovered from the contractor.

3.14 Suspension of work:

The Contractor shall suspend the progress of work, on receipt of the written order from the Owner for any of the following reasons:

- i) On account of any default on the part of the Contractor. In this case the contractor shall be entitled for the extension of time, but the contractor shall have no claim for payment of compensation for re-execution of faulty works.
- ii) For execution of the works for reasons other than the default of the contractor.
- iii) For safety of the works.

In case of suspension of work:

- a) The contractor shall during such suspension, properly protect and secure the works and carry out the instructions of the owner.
- b) If the suspension is ordered for the reasons 3.13 as stated above, the Contractor shall be entitled for extension of time equal to the period of every such suspension but no compensation for damages etc. shall be admissible on account of suspension of work.

3.15 Possession prior to completion:

The Owner shall have authority to take possession of any completed or partially completed works. Such possession shall not be deemed to be acceptance of any work completed in accordance with the contract. If such prior possession delays the progress of works then the adjustment in the time of completion shall be done accordingly. The decision of the Owner regarding the extent of delay shall be final and binding.

3.16 Care of Works:

From the commencement to the completion of works, the Contractor shall take full responsibility for the care of all works including all temporary works and in case any damage or loss occurs then the contractor shall at his own cost repair and make good the same so that on completion of the work, the same shall be in good order in every respect in accordance with the contract and to the satisfaction of the Owner.

4.0 CERTIFICATE AND PAYMENT**4.1 Schedule of Rates:**

- i) The payments to be made to the contractor for various items of works shall be as per the finalised rates in tender document and the rates of extra items finalised from time to time.
- ii) The rates finalised in the tender document shall remain firm till the completion of the work including extension of time, if any.
- iii) After the completion of work, the Contractor will have to submit the clearance certificate for all statutory payments like royalties, Octroi etc.

4.2 Measurement:

Joint measurements of the various items of the work shall be taken by the Contractor's authorised representative in presence of the Owner's and authorized representative from time to time for maintaining the records and preparing the bills. If the contractor fails to send his representative then the measurements taken by the Owner's and shall be final and no claim shall be entertained in this regard.

4.3 Mode of Measurement:

All measurements shall be in the metric system and in accordance with Indian Standard Specifications and in accordance with standard engineering practice. If the contractor has any objection regarding the measurements then he shall inform the Owner immediately. The decision given by the owner shall be final and binding on the contractor. In case of mode of measurement of any item is not specified; then I.S.I. mode of measurement (as applicable during contract period) shall be followed.

4.4 Mobilization Advance:

No mobilization advance shall be paid.

4.5 Lump sums in Tender:

Lump sum items considered only where specified.

4.6 Running Account Payments to be regarded as advances:

All running account payments shall be regarded as payments by way of advances against the final payment only and not as payment for work actually done and completed, and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be removed and taken away and reconstructed or re-erected or be considered as an admission of the performance of the contract or nor shall it conclude, determine or affect in any way the powers of the Owner under these conditions or any of them as to the final settlement of the accounts or otherwise, or in any other way vitiate or affect the contract. The final bill shall be submitted by the contractor within one month from the date of actual completion of the work, to the Owner's certificate of the measurement and of the total amount payable for the work accordingly shall be final and binding on the Contractor. The payment of final bill shall be done within three months after the submission of the final bill by the contractor, to the including period of one month of clause no.4.8 (c) billing and terms of payment.

4.7 Payment of Contractor's Bills:

- a. The payment due to the contractor shall be made only in Indian Currency by Crossed Account Payee Cheques. In no case, will the Owner be responsible if the cheque is misled or mis-appropriated by the contractor or his representatives. The cheque shall be released only against submission of duly signed and revenue stamped receipt.
- b. The Owner reserves the right to carry out post payment audit and technical examination of the bills and work executed including all supporting vouchers etc. The Owner further reserves the right to enforce recovery of over-payment when detected. Similarly, if any under payment is discovered, the amount shall be paid to the contractor.
- c. Wherever any claim for the payment against the contractor arises as per the contract, the same may be deducted from the bill of the contractor or from his security deposit.

4.8 Billing and terms of payment:

(a) The payment shall be made as under:-

- i) 70% of the value of goods supplied at site shall be made immediately after supply of materials/work executed at site.
- ii) 20% of the value of goods supplied/ work executed at site shall be made immediately after completing and commissioning the equipments/work executed.
- iii) Balance 10% after rectification of defects, energizing the complete system to the full satisfaction of Owner.

(b) The amount deposited as Security Deposit shall be released only after issuance of provisional completion certificate by the Owner.

(c) Retention Amount: Retention Money at the rate of 5% of the value of work done for each running bill will be deducted. The retention money shall be returned at the expiration of defect liability period of 12 months.

- (d) Tax Deduction: All statutory deductions like Income Tax, Works Contract Tax, E.S.I., P.F. or any other government imposed liabilities shall be borne by the contractor (as applicable at the time of execution of job) and shall be deducted from each bill submitted by the Contractor.

5. Provisional Completion Certificate:

When the Contractor successfully completes the works as per the contract, he shall be eligible to apply for provisional completion certificate in respect of the works. The Owner shall issue to the Contractor the provisional completion certificate after verifying from the completion documents submitted by the Contractor and satisfying himself that the work has been completed in accordance with the construction drawings and the contract document. The Contractor, after obtaining the provisional completion certificate, is eligible to present the final bill for the work executed by him under the terms of the contract. The work will not be considered as complete and taken over by the Owner until all the temporary works, labour hutments etc. are removed and the work site cleared to the satisfaction of the Owner.

If the contractor fails to comply with the requirements of the above on or before the date for the completion of the works, the Owner may, at the expense of the contractor, remove the tools and plants and surplus materials and dispose off the same and the contractor shall pay the amount of all expenses incurred.

6.0 LABOUR LAWS AND SAFETY REGULATIONS

6.1 Labour Laws:

- i) Laborers below the age of 18 years shall not be employed on the work.
- ii) The contractor shall not pay less than what is specified by the law to laborers engaged by him on the work.
- iii) The contractor shall, at his own expenses, comply with all labour laws and the Owner shall not be responsible for any recovery/penalty imposed by the respective authorities for violating the labour laws.
- iv) If the contractor is covered under the Contract Labour (Regulation & Abolition) Act, he shall obtain a license from the licensing authority (i.e. the Office of Labour Commissioner), by payment of the necessary prescribed fee and deposit, if any, before starting the work.
- v) The contractor shall furnish to the Owner, the details of the workers employed on the works.
- vi) The contractor shall comply with the provisions of the existing rules and regulations relating to labour laws.
- vii) The Owner /authorized engineer shall on a report having been made by an inspecting officer as defined in Contract Labour (Regulation and Abolition) Act, 1980, have the power to deduct from the amount due to the contractor any sum required or estimated to be required for making good the losses suffered by a worker or workers by reason of non-fulfillment of the conditions of the contract for the benefit of the workers, or if deductions made from his or their wages which are not justified by the terms of contract or non-observance of the said regulations.

6.2 Minor Accident on Duty:

For cases of minor accident on duty not covered under compensation by insurance, the contractor shall have to compensate the affected person by reimbursing these medical expenses against submission of actual expenditure document. The absence from duty, if takes place due to such accident, shall be considered as special leave and full payment shall have to be made for duration of such absence.

6.3 Provident Fund:

It shall be solely the Contractor's responsibility to complete all provident fund formalities as per statutory regulations.

7.0 SAFETY CODE

7.1 Safety and Protection:

The contractor shall adhere to safe construction practice and guard against hazardous and unsafe working conditions. While carrying out the work, the contractor should provide for;

- i) Safety of personnel engaged in the construction.
- ii) Protection and safety of works and materials during their progress.
- iii) Sanitary and hygienic conditions of working and living for his workers, as required by the Owner.

7.2 Use of Safety Gadgets:

The Contractor shall have to ensure availability and use of all desire safety gadgets like safety belts, helmets, goggles, hand gloves etc.

7.3 Unsafe working condition:

If any activity is found to be progressing without proper and complete safety measures (including use of safety gadgets) being implemented, the contractor may be asked to stop the work unless he fulfills the desired safety norms. Such delays shall not be allowed to be considered for extension in duration of the allotted time period.

7.4 First Aid:

The contractor shall provide first aid facilities for his employees and those of his sub-contractors. The requisite first aid box and medicines should always be available at work site.

7.5 Contractor's Barricades:

The contractor shall erect and maintain barricades required in connection with his operations to guard or protect:-

- i) Excavations
- ii) Hoisting Areas
- iii) Areas adjudged hazardous by the Contractor's or Owners representatives.

- iv) Charged electrical panels.
- v) Owner's existing property liable to get damaged by contractor's operation.

7.6 Preservation of peace:

The contractor shall take precautions to prevent any riotous or unlawful behavior by his workers, for the preservation of peace and protection of inhabitants and the security of property in the neighborhood of the work.

8.0 DETAILS OF WORK EXECUTION

- i) The work shall be done in such a manner so as to clear work front availability for other agencies working at site.
- ii) Finish of work shall be as per drawings & details given by Owner.
- iii) In general the complete work is to be done as per Indian Standard and esthetical norms as specified and detailed in Tender.

9.0 CONTRACTOR'S SCOPE OF SUPPLY

All materials required for executing the jobs specified in the Schedule of Items, inclusive of all tools, tackles, scaffolding, consumables & testing equipments shall be procured and supplied by the contractor at his own cost except for any items specified as owner supplied.

10.0 RECOVERY FROM THE CONTRACTOR

- i) If the contractor or his employees damage or destroy the property of the Owner, then the same shall be replaced/ refunded by the contractor; otherwise the expenses may be recovered from his bill or security deposit.
- ii) All compensation & recoveries to be made as per terms of the contract shall be deducted from the contractor's bill or security deposit.
- iii) Forfeiture of Security Deposit: Whenever any claim against the contractor is to be recovered then the same may be made from the security deposit. If the contractor abandons the work or leaves the work in complete, then the Owner/has the right to forfeit the security deposit.

11.0 SPECIAL INSTRUCTIONS

- a) All materials to be used in execution of project shall be of **first class quality, recommended make; I.S.I. marked and shall be approved by Owner** before its application.
- b) The contractor shall be paying all testing charges required for testing of materials and samples as and when taken by Owner/ The Contractor shall arrange necessary labour and transportation to facilitate testing of samples/materials. Frequency of testing materials/samples shall be as per related I.S. codes.
- c) The work should be carried out in truly professional manner, neatly finished with proper line, level and plumb. Cleanliness and finishing of the job is of utmost importance. Hence the job should be done most carefully with best workmanship. For all

finishing jobs samples should be approved from the owner before completely executing the work.

- d) The Owner/ should be immediately informed for any discrepancy in drawings, specifications and instructions in the execution of job at site before actual execution of particular item having discrepancy.
- e) Any item found to be having been executed with poor workmanship or materials of inferior quality then the contractor shall have to rectify /reconstruct the work as specified by Owner/ No extra charge will be admissible in such case. If Contractors fails to do so, the Owner reserved the right to rectify/reconstruct the work through some other agency at the expenses of contractor.
- f) The schedule of activities as submitted by the contractor shall have to be strictly adhered to. Regular progress reports shall have to be submitted by the contractor giving all details for monitoring of the schedule.
- g) The Contractor shall take charge of site and if site clearance is involved, he shall attend to it. (If such type of unforeseen and unavoidable situation occurs, in that case actual labour employed for such job shall be paid including overheads and profit).
- h) Special care is to be taken for cleanliness of the site. After the end of day's work, the site should be cleaned immediately.
- i) The contractor shall have to co-operate with the agencies executing other works in the same area.
- j) While executing the work, the contractor shall ensure safety and security of the property of the Owner so as to avoid theft etc.

12. STAMP PAPER AGREEMENT

AN AGREEMENT made this the _____ day of _____ 2013 between M/S _____ here in after called the CONTRACTOR/S which expression shall include its executors, administrators, legal representative and assigns of the first part and **M/S. HLL LIFECARE LIMITED..** (Hereinafter called the Owner) of the second part. WHEREAS **M/S. HLL LIFECARE LIMITED.** the Owner is desirous of doing **“Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi “** as per Drawings & specification and the contractor/s has/have by his/their tender dated _____ as amended by the contractor's -contractor's letter no. _____ dated _____ offered to execute and fully complete the above work in the Owner's Premises for the Owner as set forth in the tender or as amended and the schedule Bill quantities particular specifications, ISI specification, drawings, special conditions of the contract, scope & performance schedule and general conditions of the contract, according to the terms and conditions contained there in for an approximate total sum of

Rs. _____ (Rupees _____
_____) and the Owner has accepted such item rate/percentage rate/Lump sum tender in terms of its letter no. /dtd. _____.

Owner/Employer

SIG.OF THE CONTRACTOR

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS

1. The contractor/s covenant/s and agree/s with the Owner that the contractor/s with in the time of **THREE MONTHS** from the date stipulated in the acceptance letter shall execute and fully complete all the works specified described or referred to in and by the said tender or as amended according to the true intent and meaning of the said tender or as amended and as per the Schedule Bill of quantities Particular Specifications ISI Specification Drawings & Instructions issued from time to time Special Conditions of the Contract Scope & Performance Schedule General Conditions of the Contract.

The Contractor/s covenant/s and agree/s with the Owner to truly observe perform fulfill & submit to the said terms obligations and conditions referred above. In case the contractor fails to execute the work in the manner described in the condition of Contract or stops the execution of work or fails to carry out the works to the satisfaction of the Owner with respect to quantity quality and time schedule or abandons the work or becomes bankrupt then the Owner will have right to terminate the contract and get the remaining work executed at the risk and cost of the contractor. It is agreed that time is of the essence of this contract. In case the work is not completed in the manner mentioned above to the complete satisfaction of the Owner in every respect within the aforesaid time limit of four months from the date stipulated in the Work Order the Contractor/s agree/s to pay compensation of ½% of the value of the contract sum for each week of delay beyond the date stipulated for completion subject however to a maximum of 7.5% of the value of the Contract sum.

2. In consideration of the satisfactory work executed by the contractor/s with the provisions as stated above the Owner covenant/s with the contractor/s that it will pay to the contractor/s from time to time in accordance with the Schedule Bill of quantities and various terms and conditions as contained in General Conditions of the contract and Special Conditions of the contract, provided always that whether or not a work is satisfactory shall be decided by the Owner and its decision in this behalf shall be final and binding.
3. The rates for items whether termed as extra items or deviations or by whatever name called and which are not covered by the tendered rates will be worked out in accordance with Clause 3.8 of Schedule II the General Conditions of the contract only.
4. Sales Tax by whatever name and in whatever form it may be in all cases shall be the contractor's /Contractors' responsibility. Income Tax Work Contract Tax & Taxes in pursuance of U.T. Sales Tax amendment and validation ordinances and or the Act thereof and or other amendments as may be made from time to time or taxes as result of subsequent orders/ordinances/acts as issued by the State or Central Govt. from time to time shall be borne by the Contractor/s.
5. The contractor shall abide by and shall be responsible for all statutory provisions of the Law such as labour laws & safety regulations etc.
6. This agreement further witnesseth that the contractor/s hereby covenant/s with the Owner that in the event of the nonfulfilment in any respect by the contractor/s of the said covenant/s terms, agreements, obligations and conditions on the part of the contractor/s, the contractor shall pay on demand to the Owner all losses, damages, costs, charges and expenses as the Owner may be directly or indirectly put to in consequence of such non fulfilment of contract by the contractor/s.

7. In the event of any dispute arising out of or in connection with the arbitration proceedings, or any proceedings being taken subsequent to the arbitration proceedings, it is further agreed that only the courts in Thiruvananthapuram, Kerala shall have the sole jurisdiction in the matter.

8. The following documents are deemed to form part of the agreement, namely the tender, the priced bill of quantities, the drawings issued for the work, Schedule 'II' Particular Specifications, Special Conditions of the Contract and General Scope performance Schedule Conditions of the contract, all of which for the purpose of identification have been signed on behalf of the Owner and by the contractor/s. The relevant ISI will also form part of this agreement. The letter of Acceptance and their amendment etc. shall also form part of the agreement.

9. The agreement further witnesseth that the contractors is are responsible for any accident or other compensations payable to the workmen employed by and working under the control of contractors, that the Owner has no liability in the matter and that if any payment would have to be made by the Owner, the same shall be reimbursed by the contractors on demand and/ or recovered from the dues of the contractors. In witnesses whereof the said parties here to have here unto set their hands.

FOR & ON BEHALF OF **HLL LIFECARE LIMITED**,

OWNER/EMPLOYER

SIGN.OF THE CONTRACTOR

Date:

Witnesses:

1. _____

2. _____

Witnesses:

1. _____

2. _____

SCHEDULE –III

PARTICULAR SPECIFICATION

4.1 SCOPE:-

The scope of work covers supply, installation, testing and commissioning of Electrical works including electrical panels, cabling and wiring as indicated in the schedule and earthing as per standard. All necessary clearance shall be obtained from the concerned authorities.

4.2 ITEM OF SUPPLY AND WORK OF OWNER:-

Unless/otherwise specified the following supply shall be made and the following works shall be done by the Owner.

1. Open areas for storage of materials for construction work etc.
2. Water and Electricity for construction purpose only

All other items shall be included in the offer made.

4.3 GENERAL

Work shall be carried out in accordance with specification local rules and relevant Indian Standard.

4.4 TESTING

Cables shall be tested upto installation with a Megger and the following readings established.

1. Continuity on all phases
2. Insulation resistance.
 - a. between conductors
 - b. all conductors and ground

All the Tests shall be recorded

4.5 MODE OF MEASUREMENT

Cables will be measured on the basis of unit length and shall include the following:-

- i) Cables and clamps
- ii) Installation, commissioning and testing.
- iii) Cable route marker.

The item shall include the following:-

- i) Cable glands, lugs, bolts, nuts.
- i) All jointing materials
- ii) Installations, testing and commissioning.
- iii) Earthing the gland.

Cables buried under ground will be measured on the basis of unit length and paid for at unit rates.

4.6 LT SWITCH BOARD

4.6.1 PARTICULARS OF THE SYSTEM

i.	Operating Voltage (Nominal)	:	415Volts
ii.	Frequency	:	50 Hz
iii.	Phases	:	3
iv.	No. of wires	:	4
v.	Neutral	:	Solidly earthed

4.6.2 SERVICE CONDITION

Standard service conditions as per Appendix 'A' of IS: 2516 (part I section 1965)

4.6.3 CONSTRUCTION

The LT switchgear shall be sheet steel clad totally enclosed dust tight/vermin proof, weather proof, indoor, free standing floor mounting and cubicle construction. The busbar chamber shall be extensible on both sides. The type of enclosure shall atleast provide degree of protection covered by IP:53 (weather proof enclosure) of IS:2147-1962. The busbar shall be air insulated Aluminum conductor of suitable size for rated current. The current rating shall not be more than 0.8A/sq.mm.Suitable PVC shrouding with colour coding shall be provided over the busbar. The busbars shall be mounted on SMC supports only. The complete chamber shall be degreased, acid cleaned, washed, phosphated and painted with one coat of zinc chromate primer and 2 coats of enamel paint of gray colour or the complete panel shall be powder coated.—This shall be done in the presence of a representative of the owner. The construction details of the LT panel shall be submitted and got approved by the Owner before fabrication. The installation charges shall include the cost of supply, fabrication and installation of all the necessary steel supports for the erection of the panel.

4.6.3.1 TEMPERATURE RISE

Rise in temperature of following parts of LT switchgear under normal current shall be limited to values as under, taking 40 degree centigrade as reference ambient temperature.

1. Contact parts : 45 degree centigrade
2. Terminals for external insulated connection: 50degree centigrade
3. Manual operation means
 - a. Parts of metal : 15degree centigrade
 - b. Part insulated : 25degree centigrade

4.7.3.2 BUSBARS

RATING OF BUSBARS

i.	No. of busbars	:	3 phase and 1 neutral
ii.	Insulation voltage	:	1.1KV
iii.	Normal current	:	as specified
iv.	Short circuit current	:	as specified

Busbars shall be air insulated aluminium conductor enclosed in a sheet steel chamber. Busbars arrangement shall comply with IS:375-1963. Marking and arrangement of Busbars of main connection shall be as per IS: specifications. Letter code and number code as per IS: specification shall be followed for auxiliary wiring. Section of busbars shall be suitable for rated current and corrected for an ambient temperature of 45degree centigrade. Neutral busbar shall be insulated and provision for its connections shall be given. The complete busbar shall be provided with PVC heat shrink insulation of the colour specification.

4.7.3.3 METERING

Current transformer operated ammeters shall be provided with each of the incoming feeders, to indicate current in each of the phases. Current transformers shall comply with IS:2705 (Part II) – 1964 and shall be of accuracy class as specified . Ammeter shall be Digital type and shall have a dial size of 96*96mm in square. It shall comply with IS: 1248 – 1968.

The voltmeter shall be Digital type and class 2.5 accuracy and shall comply with IS;1248-1968.

4.7.3.4 INDICATING LAMPS

LED type Phase indication lamps shall be provided. All the indication lamps shall be of LED type.

4.7.3.5 CABLE TERMINATION

Switchboard shall be provided with necessary cable end box and compression glands for connecting 1.1KV grade XLPE insulated PVC sheathed armoured aluminium conductor outgoing cables as indicated in the drawing.

The incoming switchgear shall be provided with necessary cable end box and compression glands for connecting 1.1KV grade, XLPE insulated, PVC sheathed armoured aluminium/Copper conductor cables.

4.7.3.6 LABELING

4.7.3.6.1 General

Every switchboard, incoming feeder, outgoing feeder, incoming and outgoing cables, switchboard control contactor, time switch, relay, indicator lamp, meter, link and any control or protection equipment within or on a switchboard shall be clearly and accurately labeled.

Labels shall be engraved laminated plastic or photo anodized rigid aluminium and shall comply with the following requirements.

Except where otherwise required, labels shall be fixed adjacent to, but not on any item of equipment.

Engraved lettering shall be black on a white background, except that the label for a main switch shall have red lettering on a white background, and warning and caution labels shall have white lettering on a red background.

The minimum height of lettering shall be 3mm and of sufficient definition to allow easy reading.

4.7.3.6.2 Fixing of Labels

Labels shall be securely fixed by:

- a) Screws and adhesive, or
- b) Fixed in an extruded aluminium section which shall be countersunk screw fixed or countersunk riveted to the panel.

Screws shall be tightened with nuts or into tapped holes in the switchboard. Mechanically expanded plastic rivets of minimum 6mm head diameter are acceptable instead of screws. Aluminium rivets may be used to fix aluminium labels only. Self-tapping screws, thread-cutting screws or other fixings are not acceptable.

4.7.3.6.3 Labels on Exterior of Switchboards and Schedules

All switchboards shall be labeled with the manufacturer's name.

A switchboard designation label shall be provided. For other than main switchboards, the designation label shall also state the source of electrical supply. Separate sections of enclosures shall be identified. The label for any section or enclosure containing supply authority equipment shall be to the satisfaction of the Owner and the supply authority.

Every switchboard control shall be labeled and shall include:

- a. Circuit designation for all main switches, main controls and sub main controls.
- b. Details of the consumer's mains and all sub mains.
- c. Incoming busbar or cable rating to the first tee –off.

The minimum height of lettering shall be 6mm. For identification of final sub circuits, a typed schedule, cross-referenced to the lighting and power layout plans shall be provided. The schedule shall be protected by a plastic sheet and fixed in a suitable frame mounted on the inside of the relevant switchboard door or, if the switchboard has no door, on the wall immediately adjacent to the switchboard.

4.7.3.6.4 ACB/MOULDED CASE CIRCUIT BREAKER

The ACB/MCCBs shall have quick make, quick break and trip mechanism with breaking capacities and thermal settings as specified in the schedule. The terminal shall be suitable for both aluminium and copper termination. The rotary operating handle shall have door interlock facility. The MCCBs shall have a breaking capacity of not less than 18KA r.m.s at 415V. Wherever required higher rupturing capacity breakers to meet the system short circuit fault shall be used. All such rating shall be as per equipment schedule. Relation between Ics & Icu shall be as per table I of IS-13947-2.

4.7 LT CABLE 1.1 kV GRADE/PVC/XLPE CABLE

4.7.1 SCOPE

This specification covers the requirements of 3.5/4 core XLPE insulated PVC sheathed L.T 1.1 KV grade aluminium conductor armoured cable generally conforming to IS 1554 (part 1)1976/ IS 7098.

4.7.2 PARTICULARS OF SYSTEM

i Operating voltage	415 v rms line to line
ii Frequency	50c/s
iii Phase	Three
iv No.of wires	Four
v Neutral	Earthed

4.7.3 PARTICULARS OF CABLE REQUIRED

1. IS: 7098 XLPE insulated Electric Cables
2. IS: 1753 Aluminium conductors for insulated cables.
3. IS: 3961 Recommended current rating for cables.

4.7.4 CONSTRUCTION

The cable shall be manufactured as per standard practice and conforming to IS 1554 (Part I) 1976/ IS 7098.

4.7.5 TESTING

- a. Type and routine tests

Records of all type/routine tests carried out as per Clause 15.1 &15.3 of IS 1554 (part I) 1976 shall be maintained by the supplier and shall be furnished to the authority at the time of inspection by Owner's authorised representative on or before the delivery of materials at site.

- b Acceptance tests

All tests specified in IS 1554 Part 1 1964 (as amended up to date shall be applicable). Test certificate from the manufacturer to be produced for cables.

4.7.6 MANUFACTURER'S IDENTIFICATION

The manufacturer shall be identified throughout the length of the cable by means of a tape bearing the manufacturer's name or trade mark being printed or intended or embossed on the cable. The identification or embossing shall be done only on the sheath.

4.7.7 PACKING AND MARKING

The cable shall be wound on a drum of suitable size and packed and marked. The cable may also be marked with ISI certificate mark. The marking done on the drum shall have the following information:-

- a Trade name, if any
- b Name of Manufacturer
- c Year of Manufacturing
- d Nominal sectional area of the conductor of the cable
- e Number of cores
- f Type of cable and voltage for which it is suitable
- g Length of cable on the drum
- h Approximate gross weight

4.7.8 INSTALLATION

Cable shall be laid in the routes marked in the drawings. Where the cable route is not marked, the contractor shall mark it out on the drawings and also on the site and obtain the approval of the Owner before laying of the cable. Procurement of cable shall be on the basis of actual site measurement and the quantities shown on the schedule of work shall be regarded as a guide. Cable rising indoors shall be laid on walls, ceiling, inside shafts or trenches. Single cables laid shall be fixed directly to walls or ceiling. All supports shall be at not more than 500mm. Where number of cables are run, necessary perforated cable trays shall be provided wherever shown. Cables laid in built up trenches shall be on steel supports. Plastic identification tags shall be provided at every 20mtr.

Cables shall be bent to a radius not less than 12 times the overall diameter of the cables or in accordance with the manufacturer's recommendation whichever is higher. In case of direct buried cable, the cable route shall be parallel or perpendicular to roadways, wall etc. Cables shall be laid in an excavated graded trench over sand cushion to provide protection against abrasion. Width of excavated trenches shall be as required. The cable route shall be provided with cable route marker at every 20mtr.

4.7.9 TESTING

M V cables shall be tested upon installation with a 500V megger and the following readings established.

1. Continuity on all phases
 - a. between conductors
 - b. all conductors and ground
2. Insulation resistance

4.7.10 MODE OF MEASUREMENT

Cable will be measured on the basis of unit length and shall include the following:-

- i Cables and clamps
- ii Installation commissioning and testing
- iii Cable marking
- iv Cable route marker if required

4.8 EARTHING

4.8.1 SCOPE

The scope of work shall cover earthing stations, laying copper earthing strips etc.

4.8.2 STANDARDS

The following standards and rules shall be applicable.

1. IS: 3043 – 1966 Code of practice for earthing.
2. Indian Electricity Act and Rules.

All codes and standards mean the latest, where not specified otherwise. The installation shall generally follow the Indian Standard code of practice or the British Standard codes of practice in the absence of Indian standards.

4.8.3 PLATE EARTHING STATION

The earth electrodes shall be 1200x1200x12.6mm C.I plate. The earth resistance shall be maintained with a suitable soil treatment.

The resistance of each earth station should not exceed 5 ohms.

The earth lead shall be connected to the earth plate through copper/brass bolts. The earth plates, G.I. pipes, cross Cu bars and down copper connections shall form an earthing station.

4.8.4 EARTH LEADS AND CONNECTIONS

Earth lead shall be as specified with sizes shown on drawings. At road crossing necessary hume pipes shall be laid. Earth lead run on surface of wall or ceiling shall be fixed on saddles or wall so that the strips is at least 8mm away from the wall surface.

The complete earthing system shall be mechanically and electrically connected to provide an independent return path to the earthing source.

4.8.5 EQUIPMENT EARTHING

All apparatus and equipment transmitting or utilizing power shall be earthed in the following manner. Copper earth wires shall be used where copper wires are specified.

- a. Armoured cables shall be earthed by 2 distinct earth connections to the armouring at both the ends and the size of connection being same as for the metallic conduit.
- b. 3 phase power panels shall have 2 distinct earth connections of the size co-related to the incoming cable size.
- c. An equipment earthing grid is to be established. All earth connections to all panels and equipment shall be connected to the nearest point of the earthing grid.

4.8.6 TESTING

The following earth resistance value shall be measured with an approved earth megger and recorded.

1. Each earthing station
2. Earthing system as a whole

4.8.7 MODE OF MEASUREMENT

Providing Earthing station complete with excavation, electrode, watering pipe, funnel, top connector, interconnection between earth plate and top connector, soil treatment, masonry chamber, concrete/CI cover etc., shall be treated as one unit of measurement.

The following items of work shall be measured and paid at unit rates covering the cost of earth wire/strips, clamps, labour etc.

- a. Main equipment Earthing grid and connections to the Earthing stations.
- b. Connections to the switch board.

SCHEDULE IV

SPECIAL CONDITIONS

1. Contractor has to prepare all necessary drawings and submit to the Central/State Electrical Inspectorate for clearance within 20 days of award of work. Owner shall give basic drawings of all installation. Necessary follow up action shall be taken by the Contractor to obtain the clearance from the Electrical Inspectorate and Electricity Board.
2. On completing the installation, the completion certificate shall be issued to the Electrical Inspectorate for approval. The observations/comments issued by the Electrical Inspector has to be rectified at no extra cost.
3. The contractor by himself has to get the energy meter and CT's tested by Approved agency and test certificate produced.
4. Owner shall pay all statutory fee for the above works. All other cost shall be included in the offer.
5. The test certificate of all equipment has to be submitted to Owner on completion of work.
6. The contractor is expected to visit the site and study the probable routes of transportation of material to the site before quoting.
7. All the items of the work are to be executed as per relevant IS specifications.
8. The Contractor has to agree and strictly abide to all the conditions stipulated in the tender and any offers with deviation or request for deviation are liable to be rejected.
9. The guarantee shall be 12 months from the date of handing over the installation duly energized.
10. The contractor has to prepare a time schedule for the complete work in detail and submit to Owner in triplicate within 10 days from the day of Work Order/ Letter Of Intent
11. The contractor shall comply with by-laws and regulation of local and statutory authorities having jurisdiction over the work and shall be responsible for payment of all fees and other charges and the giving and receiving of all necessary notices and the Owner shall be kept informed of the said compliances with by-laws, payment made, notices issued and received
12. The quantities set out in the bill of quantities are the estimated quantities of the work. They are not to be taken as the actual and correct quantities of the works to be executed by the contractor in fulfillment of his obligations under the contract.

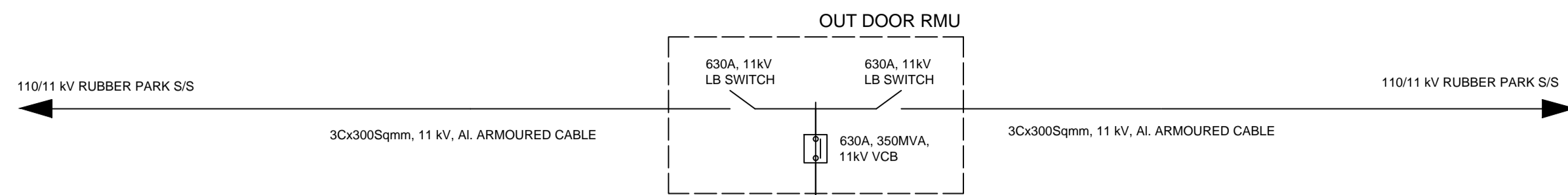
SCHEDULE – V

RECOMMENDED MAKES OF MATERIALS

SL NO	ITEM DESCRIPTION	RECOMMENDED MAKE
1	ACB	ABB/SIEMENS/ L&T
2	MCCB/Isolator	ABB/SIEMENS/ L&T
3	APP Capacitor	SPRAGUE
4	Magnetic Contactor for APFC panel	ABB/SIEMENS/ L&T
5	Multi Function Meter	SECURE/CONZERVE
6	LT Cables (Aluminium /copper)	FINOLEX/NICCO/POLYCAB/GLOSTER
7	HT CABLE	FINOLEX/NICCO/POLYCAB
8	MCB (10kA)	LEGRAND/ABB/SIEMENS
9	Wires 1100V Grade	FINOLEX/RR KABEL/ANCHOR
10	Protective Relays (Microprocessor based)	AREVA/L&T/ENGLISH ELECTRIC
11	Current transformer /PT	RESITECH/INTRANS
12	Voltmeter/Ammeter (digital) (all meters shall be digital type)	CONZERV/L&T/EL.MEASURE
13	VCB	ABB/SIEMENS/ SCHNEIDER
14	Bus Duct	LEGRAND/L&T/SCHNEIDER/ABB/SIEMENS
15	DB	LEGRAND/ABB/SIEMENS
16	APFC Relay	BELUKE/ SIEMENS
17	AMF Relay	C&S

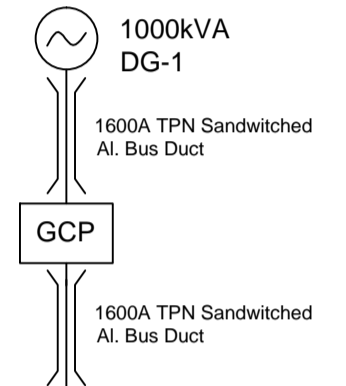
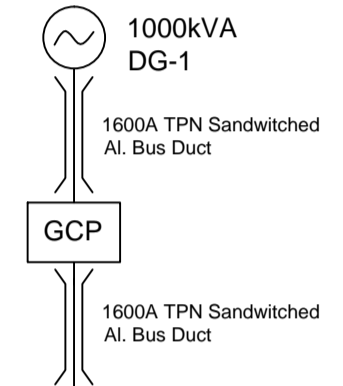
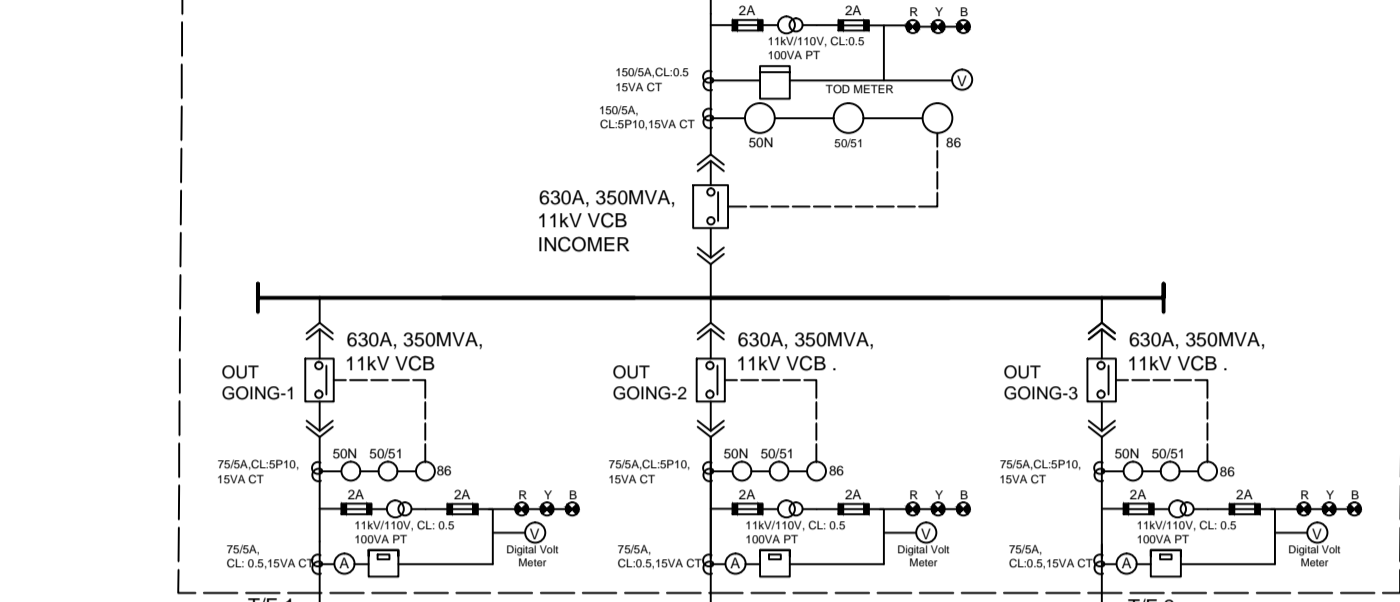
SCHEDULE – VI

SCHEMATIC DRAWING NO. HJ/HLL/RP/01

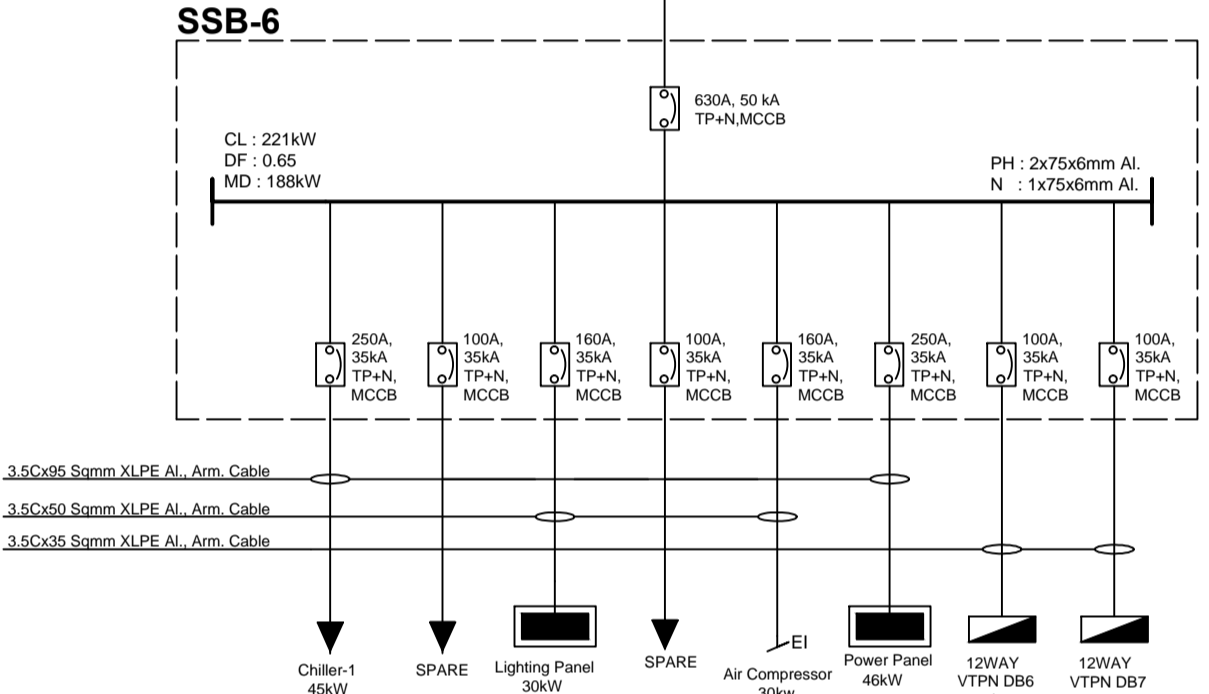
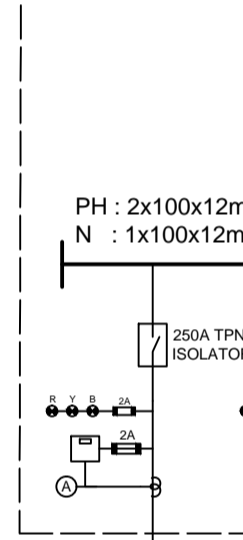


ELECTRICAL LEGEND	
	VACUUM CIRCUIT BREAKER
	MCCB With Door Interlocking
	Multi Function Digital meter With RS 485 Communication For Amps., Volt, P.F., KWH etc.
	Equipment Isolator
	Micro processor based EDO ACB with 3O/C+1E/F inbuilt release

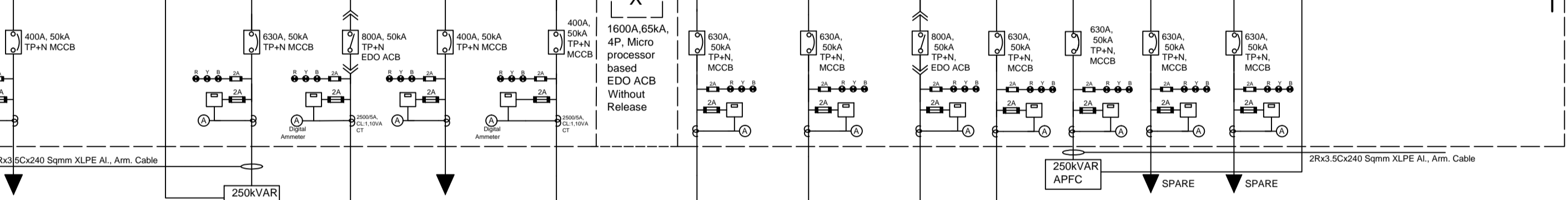
HT METERING PANEL



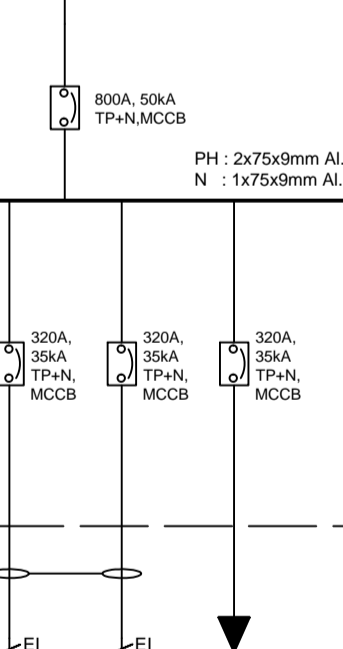
MSB



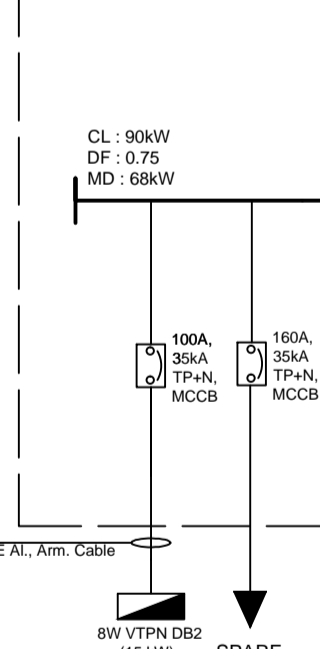
PH : 2x100x12mm Al. N : 1x100x12mm Al.



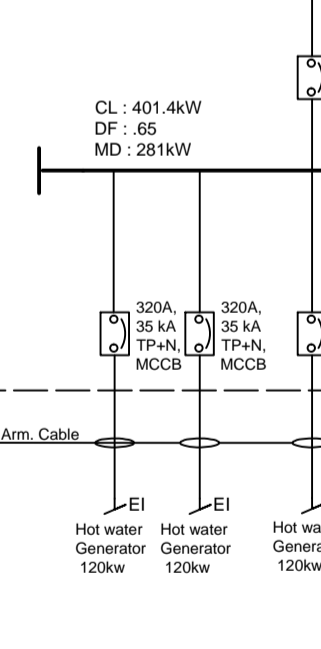
SSB-1



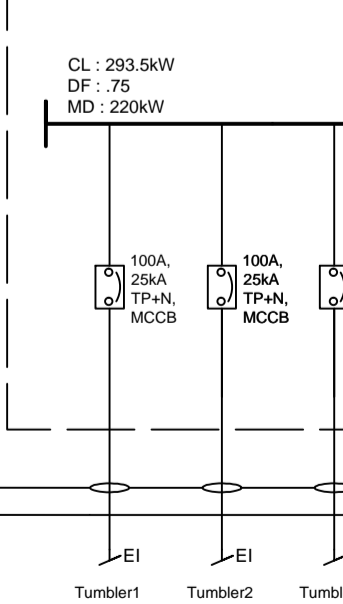
SSB-2



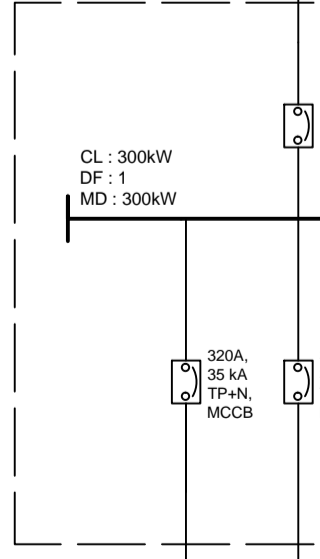
SSB-5



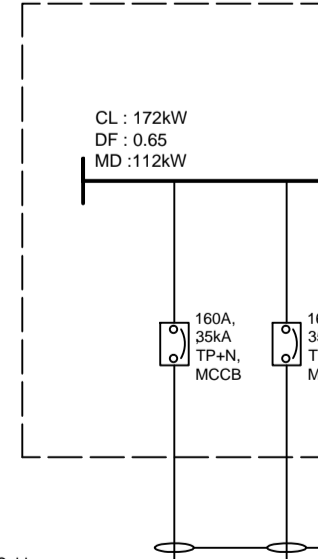
12WAY MCCB DB



SSB-3



SSB-4



HIJOLE TECHNO CONSULTANCY PVT.LTD.	
CLIENT : HLL Life Care Ltd.	
PROJECT : New Condom manufacturing facility at Rubber park, Irapuram.	
TITLE	: SCHEMATIC DIAGRAM
DWG NO	: HJ/HLL/RP/01
DATE	: 15. 11. 2013
DRAWN BY	: Jayesh
CHECKED BY:	KVK

SCHEDULE VII
SCHEDULE OF QUANTITIES

Sub: Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi as per Electrical Schematic Ref. HJ/HLL/RP/01 - reg.									
SL. NO	DESCRIPTION	QUANTITY	UNIT	SUPPLY PORTION		INSTALLATION PORTION		TOTAL IN RS.	
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	UNIT RATE	AMOUNT
1	11kV Ring Main Unit & Metering Cubicle Note: - RMU & Metering cubicle will be provided by HLL Installation, testing and commissioning of dust & vermin proof floor mounted, free standing cubicle and communicable type 11 kV metal enclosed outdoor extensible at one end Compact Ring Main Unit (RMU) made out of welded pressure tank of IP 67 class of protection fully compartmentalised complete with hinges and earthed front doors interlocked with earth switch. The switchgear should have the minimum degree of protection in accordance with IEC 60259. - IP 67 for tank with high voltage components - IP 54 for the front covers of the mechanism - IP 54 for the cable connection covers. The unit consists of 11 kV, 630 A, 20 kA, motor operated, compact, outdoor with O/C + E/F self powered relays extensible at one end , non-draw out type, CCV+ (2 Nos Load Break Switches) incomer and 1 No. fixed type motor operated Vacuum Circuit Breaker outgoing Ring Main Unit. Include all items such as battery, battery charger, etc necessary to make the RMU system fully functional. All live parts shall be enclosed in a welded pressure steel tank of IP 67 class. Approved make: ABB, Siemens and Schneider	1	set						
2	11kV Indoor Cable End Termination on RMU and Metering Panel Providing end termination to 11 kV, 3Cx300 sq mm aluminium conductor XLPE cable including supply of heat shrinkable Reychem end termination kit with all items complete as required including earthing complete.	6	No						
3	11 kV, HT cable Supply and Laying in ground Between RMU and HT panel Incomer Supply and laying of 11 kV grade, 3Cx300 sq mm Aluminium Conductor, XLPE insulated, PVC sheathed , stranded flat/wire armoured cable conforming to IS: 7098/Part II - 1988 with latest amendments. The cable shall bear ISI certification mark on the cable or drum. Laying of the cable in ground in hard soil , 1200 mm below ground level including transportation of cable to site, excavation of earth, laying the cable on a sand bed of 100 mm thickness and covering with sand for a thickness of 150 mm and placing bricks on sides and 225x450x40 mm RCC slabs on top , refilling with earth and providing cable route/joint markers etc. complete	75	Metres						
4	11 kV HT cable Supply & Laying in Trench between HT Panel and Transformers and terminations complete Supply and laying of 3Cx 300 sq mm ,11 kV grade, XLPE insulated, PVC sheathed , stranded Aluminium Conductor flat/wire armoured cable conforming to IS: 7098/Part II - 1988 with latest amendments. The cables shall be laid in trenches of depth 1.2 m and width : 1 m. Terminations including supply of heat shrinkable Reychem end termination kit with all items, gland earthing etc. complete.								
a)	Between HT panel O/g No. 1 and Transformer No. 1	20	Metres						
b)	Between HT panel O/g No.3 and Transformer No. 2	25	Metres						
c)	Indoor Termination:Providing indoor end termination to 11 kV, 3Cx300 sq mm aluminium conductor XLPE cable including supply of heat shrinkable Reychem end termination kit with all items complete as required including earthing complete.	4	Nos						
5	1000kVA (approx.) Cast Resin low loss Transformer with OLTC Note:- Transformers will be procured and provided on foundation by HLL Installation, testing and commissioning of indoor cast resin dry type 1000 kVA low loss (as per CEA standard) transformer with OLTC and Copper winding, having continuous rating for 11 kV/433 volts, 3 phase 50 Hz vector group Dyn -11. Tapings on HT side shall be +5% to -15% in steps of 1.25%; Transformer shall have cable end box on HV side suitable for 3x300 sq mm XLPE Al and suitable end box on LV side for connecting 1600 Amps TP +N Aluminium bus duct, 4 wire 433 volts with all fittings and accessories complete as required as per Electrical Inspectorate requirements.	2	Set						

SCHEDULE VII
SCHEDULE OF QUANTITIES

Sub: Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi as per Electrical Schematic Ref. HJ/HLL/RP/01 - reg.									
SL. NO	DESCRIPTION	QUANTITY	UNIT	SUPPLY PORTION		INSTALLATION PORTION		TOTAL IN RS.	
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	UNIT RATE	AMOUNT
6	<p>1600 Amps, TP+ N sandwitched Aluminium Bus Duct with bends, straight run etc</p> <p>Supply and installation of 1600 Amps; TP+N sand- witched Aluminium bus bar duct of IP67 rating and suitable for 50 Hz, 3 phase & Neutral AC supply operation enclosed in 2 mm thick steel sheet , dust and vermin proof , weather proof enclosure including supply of sheet, fabrication, cutting, silicon based fire/heat resistant coating, powder coated painting of approved quality and colour, non-hygroscopic, high dielectric value FRP bus bar support s to withstand a symmetrical Fault level of 50 kA. Necessary flexible link shall be provided on transformer side or as required including earthing with 50x6 mm copper strip on both sides of the ducts. Necessary supports shall be provided as required for the ducts. Measurement of duct will be along centre line from ACB terminal at MSB to centre line of transformer terminal. The fabricator should be in possession of test certificate issued by CPRI or any other government recognised agency for the panel of same capacity already fabricated by them for short circuit test and temperature rise test.</p>								
a)	Between Transformers and MSB	50	Metres						
7	<p>1000kVA (approx.) DG Set with Accoustic Enclosure as per CPCB norms</p> <p>Note:- DG sets will be procured and provided on foundation by HLL</p> <p>Installation, testing & commissioning of 1000 kVA,3 phase, 415 volts, 0.8 pf, 50 Hz water cooled DG set of prime duty comprising of Diesel Engine Alternator, Fuel Tank, Starting System, Battery , Electronic Governor etc with all accessories . The Generator set shall have an integral type acoustic enclosure as per latest CPCB norms. Diesel engine shall be suitable for continuous operation of Generator Set at rated capacity. Generator set to include flywheel, flexible coupling, air cleaner, corrosion resistor, fan with guard, fuel filter, electrical starting system with starter, control panel with instrumentation, residential silencer</p>								
a)	Installation, testing & commissioning including first filling of Oil and Diesel sufficient for running of minimum 10 (Ten) hours at full load.	2	Set						
8	<p>Standard Generator Control Panel</p> <p>Note:- Control panel will be procured and provided on foundation by HLL</p> <p>Installation, Testing & Commissioning of Separate control panel as per Electrical Inspectorate standards. The breaker on the control panel shall be of 1600 Amp rating, having field settable external overload setting arrangement. The control panel shall have provision for termination of 1600 Amps TP+N sand witched Al bus duct from top for entry and exit. The control panel shall have 4 pole ACB with thermal O/L and 24 volt DC shunt coil ; voltage controlled O/C relay; over voltage; under voltage; negative sequence, low set earth fault relay and REF/Differential relay. Th panel shall also have Ammeter, Voltmeter, Frequency Meter, Power Factor Meter, Energy Meter and kVA meter. Adequate space shall also be provided at the bottom of the panel to accommodate DIN rail mounted connectors to terminate control cables.</p>								
a)	Installation, Testing & Commissioning	2	Set						

SCHEDULE VII
SCHEDULE OF QUANTITIES

Sub: Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi as per Electrical Schematic Ref. HJ/HLL/RP/01 - reg.									
SL. NO	DESCRIPTION	QUANTITY	UNIT	SUPPLY PORTION		INSTALLATION PORTION		TOTAL IN RS.	
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	UNIT RATE	AMOUNT
9	Extension of Exhaust Pipe for DG set								
	Supply, erection and commissioning of additional length of exhaust pipe with long radius bend from residential silencer with necessary clamps, fixtures and painted with heat resistant, rust proof paint of approved colours to a maximum of 12 m in stages of riser for following sizes including suitable rain guard at top. Fixing shall be done with proper clamps, expansion bolts, supports								
	a) 200 mm dia	10	Metres						
	b) 250 mm dia	10	Metres						
	c) 300 mm dia	25	Metres						
10	1600 Amps, TP+ N sandwiched Aluminium Bus Duct with bends, straight run etc								
	Supply and installation of 1600 Amps; TP+N sand- wiced Aluminium bus bar duct of IP67 rating and suitable for 500 volts, 50 Hz, 3 phase & Neutral AC supply operation enclosed in 2 mm thick steel sheet , dust and vermin proof , weather proof enclosure including supply of sheet, fabrication, cutting, silicon based fire/heat resistant coating, powder coated painting of approved quality and colour, non-hygroscopic, high dielectric value FRP bus bar support s to withstand a symmetrical Fault level of 50 kA. Necessary flexible link shall be provided on transformer side or as required including earthing with 50x6 mm copper strip on both sides of the ducts. Necessary supports shall be provided as required for the ducts. Measurement of duct will be along centre line from ACB terminal at MSB to centre line of transformer terminal. The fabricator should be in possession of test certificate issued by CPRI or any other government recognised agency for the panel of same capacity already fabricated by them for short circuit test and temperature rise test.								
	a) Between DG set 1 and DG control Panel 1. Include for necessary bellows and flexible links to eliminate transmission of vibration from DG set	10	Metres						
	b) Between DG control Panel 1 and MSB. Include for flexible links.	25	Metres						
	c) Between DG set 2 and DG control Panel 2. Include for necessary bellows and flexible links to eliminate transmission of vibration from DG set.	10	Metres						
	d) Between DG Control Panel 2 and MSB	25	Metres						

SCHEDULE VII
SCHEDULE OF QUANTITIES

Sub: Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi as per Electrical Schematic Ref. HJ/HLL/RP/01 - reg.									
SL. NO	DESCRIPTION	QUANTITY	UNIT	SUPPLY PORTION		INSTALLATION PORTION		TOTAL IN RS.	
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	UNIT RATE	AMOUNT
11	HT METERING PANEL	1	Set						
	Supply, installation, Testing and Commissioning of free standing HT VCB panel consisting of 4 (Four) No. 630 Amp, 350 MVA, 11 kV, 3 phase, 50 Hz Vacuum Circuit Breaker horizontal isolation, horizontal draw out type with 24 volts DC motor charged spring closing mechanism, dust and vermin proof fully interlocked with trip free mechanism with mechanical ON/OFF indicators, earthing terminals, automatic safety shutters, complete with auxiliary contacts, numeric relays, SCADA compatible and service position micro switch including interconnections complete with power and control wiring, interconnections TP copper bus bar with sleeves and non-hygroscopic, high dielectric strength, bus bar support insulators, earthing painting etc having the configuration of one incomer and three outgoing. Include for 24 volt battery of not less than 150 AH capacity with battery charger having auto/manual boost cum trickle charger of reputed make								
a)	Include: Indication Lamps								
	(1) Red and Green Colour indicating lamps to indicate ON and OFF condition of VCBs - 4 nos								
	(2) Amber colour lamp to indicate VCB tripping on Fault - 4 nos								
	(3) Blue colour lamp to indicate spring charging condition - 4 nos								
b)	Incomer : 630 Amps, 350 MVA VCB - 1 No with TOD metering arrangement, square pattern digital voltmeter, RYB indication as per Electrical Inspectorate Standards.								
	Include (1) Protection 2 O/C + 1 E/F with high set. Include for necessary CTs and PTs of appropriate class as per Electrical Inspectorate Standards. Minimum Settings for O/C : 50 -200% and for E/F : 20% - 80%								
c)	Outgoings 630 Amps, 350 MVA VCB - 3Nos.. Including								
	(1) Protection 2O/C + 1 E/F with high set. Include for necessary CTs and PTs of appropriate class as per Electrical Inspectorate Standards. Minimum Settings for O/C : 50 -200% and for E/F : 20% - 80%								
	(2) Square pattern Digital Voltmeter with selector switch including necessary PT of appropriate class.								
	(3) Square pattern Digital Ammeter with S/S including necessary CT of appropriate class								
	(4) Multifunction meter to record energy and display voltage , current, pf etc								
	(5) Indication LED - RYB								
d)	All relays shall be micro processor based with SCADA interfacing. Include : Auxiliary relays for common alarm and high speed tripping.								
e)	Cable box shall be suitable for termination of 1x3Cx300 sq mm 11 kV, XLPE Al cable.								
f)	Control Cabling using minimum 4 sq mm copper cables of appropriate number of cores between Transformer and HT panel, MV panel to VCBs etc shall be included.								
g)	Testing, Commissioning and co-ordination of relay settings								

SCHEDULE VII
SCHEDULE OF QUANTITIES

Sub: Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi as per Electrical Schematic Ref. HJ/HLL/RP/01 - reg.									
SL. NO	DESCRIPTION	QUANTITY	UNIT	SUPPLY PORTION		INSTALLATION PORTION		TOTAL IN RS.	
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	UNIT RATE	AMOUNT
12	<p>MSB</p> <p>Supply, installation, testing and commissioning of front operated cubicle type free standing MV panel suitable for operation of 440 V, three phase, 4 wire, 50 Hz, AC supply system and to withstand a short circuit level of 50 kA rms symmetrical. The panel shall be fabricated out of 14 swg CRCA sheet steel with necessary anti corrosive treatment and shall be dust and vermin proof with the following :</p> <p>(a) Fire and Corrosion resistant coating applied in two coats with necessary primer. (b) Fire retardant DMC/SMC fillings for openings around bus bar near sectional barriers. (c) Facilities in the terminals to have direct termination with aluminium cables (d) Shall have high mechanical/dielectric strength. (e) Door interlocking facility (f) shall have fire barriers (g) Switch body shall be made of fire retardant materials. (h) shall be painted with heavy coat of anti corrosive paint. (i) shall be suitable for expansion in future. (j) surface treatment of panel, frame and all steel parts of the panel shall be carried out through seven tank process. (k) After surface treatment panel shall be painted through powder coating process with two coats of zinc chromate primer and two coats of powder coating. (l) shall consists of</p> <p>Incomer : 1600A, 4P, 65 kA, Micro processor based EDO ACB with 3 O/C + 1 E/F in built releases. They shall be suitable for termination of 1600 Amps, sand witted Al bus duct from top. Transformer Incomer - 2 Nos; Generator Incomer - 2 Nos</p> <p>Relay Protection: (1)Low set Earth Fault protection using CT at Neutral Earthing conductor. (2) REF protection with primary trip (3) over voltage relay for Transformer incomers. Include for necessary control wiring using min 4 sq mm copper control cable within and external to make it fully functional.</p> <p>Instrumentation: (1) Square pattern Digital volt meter with selector switch. (2) square pattern Digital Ammeter with selector switch including CT (3) Multifunction Meter to record Energy and display voltage, current, power factor, etc. including necessary CT Indication: RYB LED indication</p> <p>Bus Coupler: 1600 A, 4P, 65 kA, Micro processor based EDO ACB without releases (1 No)</p> <p>Bus Bar 1600 Amps, TPN Aluminium bus bar with coloured sleeves</p> <p>Outgoings:</p> <p>800 Amp, 50 kA, TPN EDO ACB with 3 O/C and E/F releases (2 nos) 630 Amp, 50 kA, TPN MCCB with adjustable thermal and magnetic protection (7 nos) 400 Amp, 50 kA, TPN MCCB with adjustable thermal and magnetic protection (4 Nos) 250 Amps, TPN Isolator - 1 No</p> <p>Metering :</p> <p>Square pattern digital LED Ammeter on all outgoing. Include for suitable CTs of appropriate class (10 nos)</p> <p>Multifunction Meter to record Energy, and display voltage, current, pf etc Include for suitable CTs of appropriate class (10 nos)</p> <p>Indication Lamps</p> <p>RYB LED indication on all outgoing feeders (10 nos)</p> <p>Testing, Commissioning and co-ordiantion of relay settings</p> <p>AMF</p> <p>AMF including AMF relay and control wiring using 4 sq mm copper control cables. Necessary interlocks between Transformer ACBs, Generator ACBs and Bus Coupler shall be provided with provision for Auto/Manual safe closing of each ACB. Control cables of minimum size 4 sq mm shall be properly terminated on MSB and Engine controller</p> <p>AMF between DG1 and Tr1 (1 No) AMF between DG2 and Tr2 (1 No)</p>	1	Set						

SCHEDULE VII
SCHEDULE OF QUANTITIES

Sub: Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi as per Electrical Schematic Ref. HJ/HLL/RP/01 - reg.									
SL. NO	DESCRIPTION	QUANTITY	UNIT	SUPPLY PORTION		INSTALLATION PORTION		TOTAL IN RS.	
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	UNIT RATE	AMOUNT
13	SSB1 Supply, installation, testing and commissioning of front operated cubicle type free standing MV panel suitable for operation of 440 V, three phase, 4 wire, 50 Hz, AC supply system and to withstand a short circuit level of 35 kA rms symmetrical. The panel shall be fabricated out of 14 swg CRCA sheet steel with necessary anti corrosive treatment and shall be dust and vermin proof with the following : a. Fire and Corrosion resistant coating applied in two coats with necessary primer. (b) Fire retardant DMC/SMC fillings for openings around bus bar near sectional barriers. (c) Facilities in the terminals to have direct termination with aluminium cables (d) Shall have high mechanical/dielectric strength. (e) Door interlocking facility (f) shall have fire barriers (g) Switch body shall be made of fire retardant materials. (h) shall be painted with heavy coat of anti corrosive paint. (i) shall be suitable for expansion in future. (j) surface treatment of panel, frame and all steel parts of the panel shall be carried out through seven tank process. (k) After surface treatment panel shall be painted through powder coating process with two coats of zinc chromate primer and two coats of powder coating. (l)shall consists of <u>Incomer:</u> 800 Amps, 50 kA, TPN MCCB with adjustable thermal and magnetic protection (1 No) <u>Outgoings:</u> (1) 320 Amps, 35 kA, TPN MCCB with adjustable thermal and magnetic protection (4 nos) 2) 250 Amps, 35 kA, TPN MCCB with adjustable thermal and magnetic protection (1 no) Bus Bar : 800 Amps, TPN Al bus bar with coloured sleeves (1 set) RYB indication lamps on i/c and all outgoing (6 sets)	1	Set						
14	SSB2 Supply, installation, testing and commissioning of front operated cubicle type free standing MV panel suitable for operation of 500 V, three phase, 4 wire, 50 Hz, AC supply system and to withstand a short circuit level of 35 kA rms symmetrical. The panel shall be fabricated out of 14 swg CRCA sheet steel with necessary anti corrosive treatment and shall be dust and vermin proof with the following : a. Fire and Corrosion resistant coating applied in two coats with necessary primer. (b) Fire retardant DMC/SMC fillings for openings around bus bar near sectional barriers. (c) Facilities in the terminals to have direct termination with aluminium cables (d) Shall have high mechanical/dielectric strength. (e) Door interlocking facility (f) shall have fire barriers (g) Switch body shall be made of fire retardant materials. (h) shall be painted with heavy coat of anti corrosive paint. (i) shall be suitable for expansion in future. (j) surface treatment of panel, frame and all steel parts of the panel shall be carried out through seven tank process. (k) After surface treatment panel shall be painted through powder coating process with two coats of zinc chromate primer and two coats of powder coating. (l)shall consists of <u>Incomer:</u> 400 Amps, 50 kA, TPN MCCB - 1 No with thermal and magnetic protection (1 No) <u>Outgoings:</u> (1) 250 Amps, 35 kA, TPN MCCB with adjustable thermal and magnetic protection (1 No) (2) 160 Amps, 35 kA, TPN MCCB with adjustable thermal and magnetic protection - 3 Nos (3) 100 Amps, 35 kA TPN MCCB with adjustable thermal and magnetic protection (1 No) Bus Bar : 400 Amps, TPN Al bus bar with coloured sleeves (1 set) Indication Lamps: RYB LED indication lamps on incomer and outgoing (6 sets)	1	Set						

SCHEDULE VII
SCHEDULE OF QUANTITIES

Sub: Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi as per Electrical Schematic Ref. HJ/HLL/RP/01 - reg.									
SL. NO	DESCRIPTION	QUANTITY	UNIT	SUPPLY PORTION		INSTALLATION PORTION		TOTAL IN RS.	
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	UNIT RATE	AMOUNT
15	<p>SSB3</p> <p>Supply, installation, testing and commissioning of front operated cubicle type free standing MV panel suitable for operation of 500 V, three phase, 4 wire, 50 Hz, AC supply system and to withstand a short circuit level of 35 kA rms symmetrical. The panel shall be fabricated out of 14 swg CRCA sheet steel with necessary anti corrosive treatment and shall be dust and vermin proof with the following :</p> <p>a. Fire and Corrosion resistant coating applied in two coats with necessary primer. (b) Fire retardant DMC/SMC fillings for openings around bus bar near sectional barriers. (c) Facilities in the terminals to have direct termination with aluminium cables (d) Shall have high mechanical/dielectric strength. (e) Door interlocking facility (f) shall have fire barriers (g) Switch body shall be made of fire retardant materials. (h) shall be painted with heavy coat of anti corrosive paint. (i) shall be suitable for expansion in future. (j) surface treatment of panel, frame and all steel parts of the panel shall be carried out through seven tank process. (k) After surface treatment panel shall be painted through powder coating process with two coats of zinc chromate primer and two coats of powder coating. (l)shall consists of</p> <p>Incomer: 630 Amps, 50 kA, TPN MCCB with adjustable thermal and magnetic protection (1 no)</p> <p>Outgoings: (1) 320 Amps,35 kA, TPN MCCB with adjustable thermal and magnetic protection (3 no)</p> <p>Bus Bar : 800 Amps, TPN Al bus bar with coloured sleeves (1 set)</p> <p>Indication lamps: RYB LED indication lamps on incomer and outgoing (4 sets)</p>	1	Set						
16	<p>SSB 4</p> <p>Supply, installation, testing and commissioning of front operated cubicle type free standing MV panel suitable for operation of 500 V, three phase, 4 wire, 50 Hz, AC supply system and to withstand a short circuit level of 35 kA rms symmetrical. The panel shall be fabricated out of 14 swg CRCA sheet steel with necessary anti corrosive treatment and shall be dust and vermin proof with the following :</p> <p>a. Fire and Corrosion resistant coating applied in two coats with necessary primer. (b) Fire retardant DMC/SMC fillings for openings around bus bar near sectional barriers. (c) Facilities in the terminals to have direct termination with aluminium cables (d) Shall have high mechanical/dielectric strength. (e) Door interlocking facility (f) shall have fire barriers (g) Switch body shall be made of fire retardant materials. (h) shall be painted with heavy coat of anti corrosive paint. (i) shall be suitable for expansion in future. (j) surface treatment of panel, frame and all steel parts of the panel shall be carried out through seven tank process. (k) After surface treatment panel shall be painted through powder coating process with two coats of zinc chromate primer and two coats of powder coating. (l)shall consists of</p> <p>Incomer: 630 Amps, 50 kA, TPN MCCB with adjustable thermal and magnetic protection (1 no)</p> <p>Outgoings: (1)160 Amps, 35 kA, TPN MCCB with adjustable thermal and magnetic protection (6 Nos) (2) 100 Amps, 35kA, TPN MCCB with adjustable thermal and magnetic protection - 2 Nos</p> <p>Bus Bar : 800 Amps, TPN Al bus bar with coloured sleeves (1 set)</p> <p>Indication lamps: RYB LED indication lamps on incomer and outgoing (9 sets)</p>	1	Set						

SCHEDULE VII
SCHEDULE OF QUANTITIES

Sub: Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi as per Electrical Schematic Ref. HJ/HLL/RP/01 - reg.									
SL. NO	DESCRIPTION	QUANTITY	UNIT	SUPPLY PORTION		INSTALLATION PORTION		TOTAL IN RS.	
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	UNIT RATE	AMOUNT
17	SSB 5 Supply, installation, testing and commissioning of front operated cubicle type free standing MV panel suitable for operation of 500 V, three phase, 4 wire, 50 Hz, AC supply system and to withstand a short circuit level of 35 kA rms symmetrical. The panel shall be fabricated out of 14 swg CRCA sheet steel with necessary anti corrosive treatment and shall be dust and vermin proof with the following : a. Fire and Corrosion resistant coating applied in two coats with necessary primer. (b) Fire retardant DMC/SMC fillings for openings around bus bar near sectional barriers. (c) Facilities in the terminals to have direct termination with aluminium cables (d) Shall have high mechanical/dielectric strength. (e) Door interlocking facility (f) shall have fire barriers (g) Switch body shall be made of fire retardant materials. (h) shall be painted with heavy coat of anti corrosive paint. (i) shall be suitable for expansion in future. (j) surface treatment of panel, frame and all steel parts of the panel shall be carried out through seven tank process. (k) After surface treatment panel shall be painted through powder coating process with two coats of zinc chromate primer and two coats of powder coating. (l) shall consists of Incomer: 800 Amps, 50 kA, TPN MCCB with adjustable thermal and magnetic protection (1 no) Outgoings: (1) 320 Amps, 35 kA, TPN MCCB with adjustable thermal and magnetic protection (3 nos) (2) 100 Amps, 35 kA, TPN MCCB with adjustable thermal and magnetic protection (4 nos) Bus Bar : 800 Amps, TPN Al bus bar with coloured sleeves (1 set) Indication lamps: RYB LED indication lamps on incomer and outgoing (8 sets)	1	Set						
18	SSB6 Supply, installation, testing and commissioning of front operated cubicle type free standing MV panel suitable for operation of 500 V, three phase, 4 wire, 50 Hz, AC supply system and to withstand a short circuit level of 35 kA rms symmetrical. The panel shall be fabricated out of 14 swg CRCA sheet steel with necessary anti corrosive treatment and shall be dust and vermin proof with the following : a. Fire and Corrosion resistant coating applied in two coats with necessary primer. (b) Fire retardant DMC/SMC fillings for openings around bus bar near sectional barriers. (c) Facilities in the terminals to have direct termination with aluminium cables (d) Shall have high mechanical/dielectric strength. (e) Door interlocking facility (f) shall have fire barriers (g) Switch body shall be made of fire retardant materials. (h) shall be painted with heavy coat of anti corrosive paint. (i) shall be suitable for expansion in future. (j) surface treatment of panel, frame and all steel parts of the panel shall be carried out through seven tank process. (k) After surface treatment panel shall be painted through powder coating process with two coats of zinc chromate primer and two coats of powder coating. (l) shall consists of Incomer: 630 Amps, 50 kA, TPN MCCB with adjustable thermal & magnetic protection (1 no) Outgoings: (1) 250 Amps, 35 kA, TPN MCCB with adjustable thermal and magnetic protection (2 nos) (2) 160 Amps, 35 kA, TPN MCCB with adjustable thermal and magnetic protection (2 nos) (3) 100 Amps, 35 kA, TPN MCCB with adjustable thermal and magnetic protection (4 nos) Bus Bar : 800 Amps, TPN Al bus bar with coloured sleeves (1 set) Indication lamps: RYB LED indication lamps on incomer and outgoing (9 sets)	1	Set						

SCHEDULE VII
SCHEDULE OF QUANTITIES

Sub: Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi as per Electrical Schematic Ref. HJ/HLL/RP/01 - reg.									
SL. NO	DESCRIPTION	QUANTITY	UNIT	SUPPLY PORTION		INSTALLATION PORTION		TOTAL IN RS.	
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	UNIT RATE	AMOUNT
19	12 Way MCCB DB	1	No						
	Incomer : 400 Amps, 35 kA, TPN with adjustable thermal and magnetic protection (1 no)								
	Outgoing: 100 Amps; 25 kA, TPN with adjustable thermal and magnetic protection (12 nos)								
20	VTPN DB								
	Supply, installation, Testing and commissioning of factory fabricated double door TPN MCB DB having IP 42 protection in CRCA sheet Steel enclosure, dust and vermin proof rated for 440 volts three phase 50 Hz, AC supply with adapter boxes for incoming and outgoing cables inclusive of busbars, neutral link, Earthing terminals, RCBO etc								
	a) 8 way with RCBO and 10 kA MCBs ranging from 10Amps, 20 Amps, 32 Amps etc			7	set				
b) 12 way with RCBO and 10 kA MCBs ranging from 10 Amps/20 Amps/32 Amps	2	set							
21	LT Aluminium Conductor Cables								
	Supply and laying of 1.1 kV grade, 3.5 C, Al conductor, XLPE insulated, steel armoured, PVC over-sheathed cable as per recommended makes & with ISI certification mark, in & through cable trenches/cable racks, including tying/clamping of cables neatly on the surface of following cable sizes:								
	a) 3.5C x 400 sq mm			1800	Metres				
	b) 3.5C x 240 sq mm			400	Metres				
	c) 3.5C x 185 sq mm			1400	Metres				
	d) 3.5C x 95 sq mm			250	Metres				
	d) 3.5C x 50 sq mm			500	Metres				
	e) 3.5C x 35 sq mm			250	Metres				
22	End Termination of LT Aluminium Conductor Cables								
	Supply and provide end termination for above cables, including supply of cable gland, lugs, other materials using good quality tools complete with terminal connections, earthing of glands complete.								
	a) 3.5C x 400 sq mm			80	Nos				
	b) 3.5C x 240 sq mm			40	Nos				
	c) 3.5C x 185 sq mm			80	Nos				
	d) 3.5C x 95 sq mm			40	Nos				
	e) 3.5C x 50 sq mm			80	Nos				
	f) 3.5C x 35 sq mm			40	Nos				
23	LT Copper Cables								
	Supply & Installation of 1100V LT Copper Cables XLPE insulated PVC Sheathed steel armoured cables Conforming to IS 7098 of following sizes :-								
	a) 4 C X 25 Sqmm			100	Metres				
	b) 4 C X 16 Sqmm			200	Metres				
	c) 4 C X 10 Sqmm			300	Metres				
	d) 4 C X 6 Sqmm			400	Metres				
e) 4 C X 2.5 Sqmm	500	Metres							
24	End Termination of LT Copper Cables								
	Supply and providing cable glands & end termination, gland Earthing etc. as per standards for following copper cable sizes -Termination at DBs, motors, pumps, starters, secondary switches etc. complete as per direction of engineer in charge								
	a) 4 C X 25 Sqmm			10	Nos				
	b) 4 C X 16 Sqmm			20	Nos				
	c) 4 C X 10 Sqmm			30	Nos				
	d) 4 C X 6 Sqmm			40	Nos				
e) 4 C X 2.5 Sqmm	50	Nos							

SCHEDULE VII
SCHEDULE OF QUANTITIES

Sub: Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi as per Electrical Schematic Ref. HJ/HLL/RP/01 - reg.									
SL. NO	DESCRIPTION	QUANTITY	UNIT	SUPPLY PORTION		INSTALLATION PORTION		TOTAL IN RS.	
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	UNIT RATE	AMOUNT
25	EARTHING								
a)	Supply and provide standard plate earth with stations 1200x1200x12 mm Cast Iron plate conforming to IS 3043 latest including supply of all materials and providing chamber complete of minimum size: 60x60x30 cm with RCC slab cover etc. complete as per Electrical Inspectorate standards.	16	Nos						
b)	Supply and laying electrolytic copper of size 50x6 mm including supply and fixing using spacers, saddles welding with all fixing materials required when laid inside the building and inclusive of excavation to a depth of min 450 mm and refilling of earth when laid outside the building and tinning of all joints and terminations, interconnections between pits etc. complete as per Electrical Inspectorate standards.								
1)	In excavated earth as above	200	Metres						
2)	In cable trenches	100	Metres						
26	APFC Panel 1								
	Supply, installation, testing and Commissioning of 250 kVAR APFC panel with APP capacitors with Microprocessor based relay, contactors, switch gears, protective devices, meters and panel housing complete as required for MSB section 1 and Section II consisting of	1	Set						
	Incomer : 630 Amp, 50 kA TPN MCCB (1 no)								
	Bus Bars: 800 Amps, TPN Aluminium (1 set)								
	Outgoings:								
	(1) 160 A, 35 kA TP MCCB and 50 kVAR, 440 volts Delta capacitor banks (1 no)								
	(2) 100 A, 35 kA, TP MCCB and 25 kVAR, 440 volts Delta capacitor banks (4 nos)								
	(3) 80 A, 35 kA TP MCB and 20 kVAR, 440 volts Delta capacitor banks (3 nos)								
	(4) 63 A, 35 kA TP MCB and 15 kVAR, 440 volts Delta capacitor banks (2 nos)								
	(5) 40A,35 kA TP MCB and 10 kVAR, 440 volts Delta capacitor banks (1 no)								
	Metering :								
	Incomer: Digital LED Ammeter with s/s and suitable CT and RYB LED indication (1 no)								
	12 stage APFC relay (1 set)								
	Each capacitor bank shall have ON/OFF LED indication lamps, Auto/Manual Selector Switch and ON/OFF push button for manual selection (11 sets)								
27	APFC Panel 2								
	Supply, installation, testing and Commissioning of 250 kVAR APFC panel with APP capacitors with Microprocessor based relay, contactors, switch gears, protective devices, meters and panel housing complete as required for MSB section 1 and Section II consisting of	1	Set						
	Incomer:								
	630 Amp, 50 kA TPN MCCB (1 no)								
	Bus Bars: 800 Amps, TPN Aluminium (1 set)								
	Outgoings:								
	(1) 160 A, 35 kA TP MCCB and 50 kVAR, 440 volts Delta capacitor banks (1 no)								
	(2) 100 A, 35 kA, TP MCCB and 25 kVAR, 440 volts Delta capacitor banks (4 nos)								
	(3) 80 A 35kA, TP MCB and 20 kVAR, 440 volts Delta capacitor banks (3 nos)								
	(4) 63 A, 35 kATP MCB and 15 kVAR, 440 volts Delta capacitor banks (2 nos)								
	(5) 40A, 35 kA,TP MCB and 10 kVAR, 440 volts Delta capacitor banks (1 no)								
	Metering :								
	Incomer: Digital LED Ammeter with s/s and suitable CT and RYB LED indication (1 no)								
	12 stage APFC relay (1 set)								
	Each capacitor bank shall have ON/OFF LED indication lamps, Auto/Manual Selector Switch and ON/OFF push button for manual selection (11 sets)								

SCHEDULE VII
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Sub: Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi as per Electrical Schematic Ref. HJ/HLL/RP/01 - reg.									
SL. NO	DESCRIPTION	QUANTITY	UNIT	SUPPLY PORTION		INSTALLATION PORTION		TOTAL IN RS.	
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	UNIT RATE	AMOUNT
28	FIRE PUMP PANEL	1	Set						
	Note: - All Pumps, motors & starters will be provided by HLL								
	Supply, Installation, testing and commissioning of Fire pump panel as per IS : 1646 -1997 and comprising the following:								
	250 Amps, TPN Isolator - 2 Nos								
	1) for Electrically driven main Fire pump of capacity 60 HP with DoL starter - 1 No								
	2) for Electrically driven Jockey pump of capacity 7.5 HP with DoL starter - 1 No								
	3) for Diesel Engine Driven Fire pump of the same capacity as the main pump - 1 No								
Bus bar: Ph: 50x6 mm Al ; N : 25x6 mm Al									
29	LIGHTNING PROTECTION								
	Supply and laying of GI Strip 32 x6 mm including fixing on SMC/FRP spacers, saddles, welding with all fixing materials required on roof ridge and on all sides along the building and across the building including interconnections and welding and termination on Earth Pit as per IS 3043 specifications.								
	a) 32x6 mm GI Strip	400	Metres						
	b) Down conductors 32x6 mm GI strip	60	Metres						
30	CABLE TRAYS								
	Supply and install following sizes of perforated GI cable trays with cover including horizontal and vertical bends, tees, cross members and other accessories as required and supported/suspended from ceiling /wall with suitable brackets/ rods etc complete								
a)	Size: 600 mm x62.5 mm x 2 mm (WidthxDepthx thickness)	100	Metres						
b)	Size: 450 mm x62.5 mm x 2 mm (WidthxDepthx thickness)	60	Metres						
c)	Size: 300x62.5x2 mm	80	Metres						
d)	Size: 150x62.5x1.6 mm	100	Metres						
31	Supply and laying Copper strip thru cable rack/wall/machine body etc. clamped properly for Earthing panel boards, Motors, and machines etc.								
	a) 32 X 6 MM	50	Metres						
	b) 25 X 3 MM	500	Metres						
	c) No. 8 SWG Bare copper wire	500	Metres						
	d) No.14 SWG Bare copper wire	800	Metres						
32	Supply, fabricate and erect MS structural work for racks, supports etc. as per requirement using MS Angles, flats, channels etc. and applying a coat of metal primer and two coats of enamel paint as per direction of Engineer In charge	3000	Kg						

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Sub: Supply, Installation, Testing and Commissioning of 2000kVA HT Substation and Electrification work for the new condom manufacturing facility at Rubber park, Irapuram, Kochi as per Electrical Schematic Ref. HJ/HLL/RP/01 - reg.									
SL. NO	DESCRIPTION	QUANTITY	UNIT	SUPPLY PORTION		INSTALLATION PORTION		TOTAL IN RS.	
				UNIT RATE	AMOUNT	UNIT RATE	AMOUNT	UNIT RATE	AMOUNT
33	Supply,fabricate and erect 6 mm Chequered plates with hinges for removal and applying a coat of metal primer and two coats of enamel paint as per direction of Engineer In charge	3000	Kg						
34	Supply and providing HT/LT Danger boards	20	nos						
35	Supply and providing 12 mm Thick Rubber mat (electrical grade) - 2m X 1m size	20	nos						
36	Supply and providing neatly framed Schematic layout (as built) as per requirement as directed by Engineer in charge	2	Set						
37	Supply and installation of Hume Pipe of 10" size in ground to at a depth of 750 mm across road	60	Metres						
38	Preparation of all drawings, submitting to the Central Electricity authority/Electrical Inspectorate for getting approval and sanction, Liaisoning charges with CEA etc.complete. (All statutory fees shall be borne by HLL)	1	L/S						
TOTAL AMOUNT IN RS									
APPLICABLE TAXES									
GRAND TOTAL AMOUNT IN RS (INCLUSIVE OF TAXES)									
(IN WORDS)									
I agree to execute the works as per the schedule at the rates quoted by me as above									
CONTRACTOR									