TENDER DOCUMENT

for

HT ELECTRIFICATION WORKS FOR HINDLABS CT, MRI & USG SCAN CENTRE AT SAT HOSPITAL, MEDICAL COLLEGE, THRIUVANANTHAPURAM, KERALA

Tender No. HLL/CHO/HCS/PROJ/2016-17/07 dated 06-09-2016

HEALTHCARE SERVICES DIVISION
HLL LIFECARE Ltd.
CORPORATE AND REGD. OFFICE
HLL BHAVAN, POOJAPPURA
THIRUVANANTHAPURAM
0471-2354949, Ext. 331,325,326,289.

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HLL Lifecare Limited

(A Government of India Enterprise)
Corporate and Regd. Office: HLL Bhavan, Poojappura , Thiruvananthapuram-695012,Kerala,India.
Ph: 0471-2354949, Ext. 331,325,326,289.

Dated:06-09-2016

NOTICE INVITING TENDER

Sealed item rate tenders are invited in two cover system from Contractors or Agencies who have executed similar works in nature and magnitude for the following works to be carried out at HLL Life Care Limited.

NIT No. & Name of Work	EMD	Period of Completion	Publishing Date	Date of	
				Last submission	Opening
HLL/CHO/HCS/PROJ/2016-17/07 HT Electrification works for HINDLABS CT, MRI & USG Scan Centre at SAT Hospital, Medical College, Thriuvananthapuram, Kerala	₹. 70,000.00	45 days	06-09-2016	22.09.2016 upto15.00 hrs	22.09.2016 on 16.00 hrs

Notes:

1. Bidders who meets the prescribed eligibility criteria are alone eligible to apply. The Bidders are required to go through the eligibility criteria mentioned in the tender document.
2. Tender documents can be downloaded from the HLL web site www.lifecarehll.com from 06-09-2016 onwards.
3. Tenders should be submitted in cloth lined cover super scribing the name of work, NIT number and name of Tenderer. EMD amount in the prescribed form should be enclosed along with the bid.Tenders without EMD will be summarily rejected.
4. HLL Lifecare Limitted, reserves the right to reject any or all tenders without assigning any reason thereof.
5. Further details can be had from the website of HLL Lifecare Limited (or) Office of the Associate Vice President & Branch Head, HCS Division, HLL Lifecare Limited, Corporate Office, HLL Bhavan, Poojapura, Thiruvanathapuram, Kerala.

AVP&BH, HCS,HLL Lifecare Limited

GENERAL TERMS & CONDITIONS

1. Eligibility criteria:

The bidders should satisfy the following eligibility criteria :

Eligibility Criteria	Documentary proof for eligibility (all copies should be self attested)
a. The prospective bidder should have minimum five years experience in executing similar* works.	Copies of work orders shall be produced
b. The bidder should have completed at least three such installations of a total value of minimum 50 Lakh during the last three years.	Copies of work orders and completion certificates issued by the authority concerned shall be submitted. Completion certificates for works issued by private parties shall be supported by TDS certificates
c. The bidder shall possess valid Electrical Contractor's license of appropriate class and category issued by Central or State Electric authority.	Copy of the valid electrical license shall be submitted.

*Similar work shall mean works such as HT/LT Electrical works, Internal Electrification, Etc

Earnest money of Rs.70,000/- (Rupees Seventy Thousand Only) in the form of a Demand Draft taken from a scheduled bank, payable at Thiruvananthapuram , Kerala issued in favor of HLL Lifecare LTD, HLL Bhavan, Poojappura, Thiruvananthapuram which should be placed in a separate sealed cover marked "Earnest Money Deposit" shall be submitted along with the tender. EMD of the unsuccessful bidders will be returned without any interest within 15days from the date of issue of work order. The EMD of the successful bidder will be converted into security deposit / retention money. The E.M.D. may be forfeited, If a bidder withdraws his bid during the period of validity specified or If the successful bidder fails within the time limit to sign the contract document or fails to furnish the required security deposit.

2. Submission of Bid:

The bids should submit as two bid system . Techo-Commercial bid and Price bid as per the instructions given below.

Envelope -1(EMD)

The envelope-1 should contain the following:

EMD Draft in an envelope super-scribed "Earnest Money Deposit". (Name & address of the firm should be mentioned on the back of the draft with pencil.)

Envelope -2 (Techno-Commercial bid)

The Techo-Commercial Bid in separate envelope should contain the followings:

i. Acknowledgement in prescribed format along with duly signed copy of tender document in all pages.(Annexure -A)
ii. Documental proof for the eligibility criteria as specified in clause no.1.
iii. Name of the Firm, Business address of the firm, Telephone No, Mobile No, Email ID etc., along with details of constitution of the company. (Proprietary / Limited etc. with details), along with the latest company profile.
iv. Attested Copies of certificates of Registration of firm, PAN No. and VAT Registration with concerned authorities.
v. Attested copy of EPF Registration.
vi. Balance sheet - for years 2015 -16,2014-15 and 2013-14
vii. Construction Program in the form of a bar chart on MS Project, etc.
viii. Plant, Machinery and Tools proposed to be deployed for the work.
ix. Manpower deployment schedule
x. List and Names of Sub-Contractors if any, proposed to be deployed for the various items of work comprising the tender, along with brief profiles / resumes of the sub-contractors and their period of association with the tenderer.
xi. List of similar works executed in the recent past together with Customer details, Contract amount, Original Contract Period & Actual Completion Period, Principal reasons for delay, if any. The Client reserves a right to make a reference to the Customer if he so deems fit.
xii. Litigation history of the agency is required to be submitted along with the techno-commercial bid.

All the above documents should be self attested by the bidder or the Authorized representative. The proforma for the above particulars is annexed herewith.

The bids shall not be considered any inquiry proceedings/ court cases is found pending against the agency.

Envelope - 3(Price Bid)

The financial bid shall consist of the Schedule of items, rates and price bid duly filled in the manner specified in the tender schedule and duly signed on all pages.

The Financial Bids in separate envelope should be strictly as per the format given in the Annexure-II of tender document. The rates quoted in the Financial Bids should be both in words and figures. In case of any discrepancy, the rates quoted by contractor in words shall be taken as correct.

Bids with any scoring-off or overwriting in figures will not be considered. The financial bid should be properly sealed and signed.

Financial bids only of those firms will be opened, who qualify on the basis of the Technical Evaluation by the Tender Committee.

The Technical and Financial Bids and EMD draft should be put in three separate envelopes super-scribed as 'TECHNICAL BID' ,'FINANCIAL BID ' and 'Earnest Money Deposit' respectively, and sealed separately. Three of these envelopes should be put in a bigger envelope super-scribed as "TENDER for HT Electrification works for HINDLABS CT, MRI & USG Scan Centre at SAT Hospital, Medical College, Thriuvananthapuram, Kerala"

The filled & duly signed bid should be submitted to Associate Vice President & Business Head (HCS), Healthcare Service Division, HLL Lifecare Limited, HLL Bhavan, Poojappura, Thiruvananthapuram, Kerala . Pin:695012. PH- 0471-2354949 on or before 22.09.2016 by 15.00 Hrs. The application shall be clearly marked as "HT Electrification works for HINDLABS CT, MRI & USG Scan Centre at SAT Hospital, Medical College, Thriuvananthapuram, Kerala ".

The Technical bids of the tenderers will be opened at 15.00 Hrs on 22.09.2016 in the presence of interested bidders or their authorized representatives who choose to attend at the time of opening of tender.

The date and time for opening of the price bids will be intimated later on .Price Bids will be opened only for the bidders, whose Technical Bids have been found to be acceptable.

3. The work shall be completed within 45 days After 7 days from the date of receipt of Work Order or LOI.

4. A formal contract agreement on non – judicial stamp paper of Rs.200/- will be drawn up (cost to be borne by the contractor) and the successful bidders are requested to attend the office of the Associate Vice President & Business Head (HCS), Healthcare Service Division, HLL Life care Limited, HLL Bhavan, Poojappura, Thiruvananthapuram,Kerala. with the stamp paper for entering into an agreement within 7 days from the receipt of this work order.

5. The Contractors whose tender is accepted will be required to furnish Performance Guarantee and Security Deposit/ retention money (including the Earnest Money Deposits/s) for the due fulfillment of the contract/s at the following rates.

(i) 5% of the tendered and accepted value of the work as performance guarantee, should submited within 7 days of issue of the letter of acceptance in the form of Bankers Cheque / Demand Draft / fixed Deposits receipt of a Scheduled Bank, an irrevocable bank guarantee of any nationalized bank in the prescribed form. Performance guarantee will be released within 15 days from the satisfactory completion of the work / issue of the completion certificate .

(ii) A sum of 5% of the gross amount of the bill shall be deducted from each running bill of the contractor. Such deductions shall be made unless the contractor has deposited the amount of security in cash or Fixed Deposit Receipt. This is in addition to 5% performance guarantee the Contractor is required to deposit as (i) above.

6. Retention Money and Defect liability period: Retention money / Security deposit will be released only after the satisfactory completion of the defect liability period which is one year from the date of issue of Work Completion Certificate.

7. The tender for the work shall remain open for acceptance for a period of 90 days from the date of opening of tender.

8. The contractor shall visit the site before quoting the rates and clarifications if any required can be had from the address mentioned above.

9. Rates quoted should be inclusive of all cost of materials, Tools/Equipments labor charges, conveyance to site, handling charges, loading and unloading charges, hiring charges, clearing of debris, statutory payments etc.

10. The HLL Lifecare Ltd. reserves all the right to accept or reject the Tender either partially or fully without assigning any reason what so ever.

11. The work should be carried out without causing any inconvenience to the public and shall ensure that no damages are caused to the existing site premises.

12. During the execution of work the contractor or authorized representative/s at least one person having technical qualification should be present at site.

13. All Materials, Equipments/ Tools required for the work should be arranged by the contractor and brought to site for the timely completion of the work.

14. The materials used shall be as per specification and of good quality.

15. The Contractor has to arrange necessary insurance coverage for the machine, workmen etc. deployed by him. He shall arrange all safety measures to protect his workmen and also the properties of HLL & Medical College Hospital.

16. WATER AND ELECTRICITY : The contractor shall make his own arrangement for water and electricity required for the works. HLL will not be responsible for the supply of either electricity or water.

17. This document will form part of the tender document and the agreement executed by the successful tenderer.

18. The work site safety of all employees, their ESI, PF etc will have to be borne by the contractor.

19. Taxes & Duties: The amounts quoted in the tender shall be inclusive of all taxes and duties.

20. Penalty for delay: Penalty shall be imposed at 0.5% per week to a maximum of 7.5% of the contract value for any delay committed by the contractor in completing the work as per the order.

21. Measurement & Payment terms: The method of measurement of completed work shall be in accordance with the standard measurement. Payment will be made on satisfactorily completion of work as per the order. Interim or running account bills shall be submitted by the contractor for the work executed on the basis of such recorded measurements in the format of HLL. All such interim payments shall be regarded as payment by way of advances against final payment only, and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re erected. Any certificate given by the officer relating to the work done or materials delivered forming part of such payment, may be modified, or corrected by any subsequent such certificate(s) or by the final certificate and shall not by itself be conclusive evident that any work or material so which it relates is /are in accordance with the contract and certificate. Any such interim payment/any part there of shall not in any respect conclude, determine or affect in any way powers of the engineer in charge under the contract or any of such payment s be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.

22. Payment Schedule: The contractor can submit Running account bills during the work period only when the amount comes at least 20% of the work order value. The running account bills is to be submitted detailing the work description ,quantity and

rate as per the Work Order. Payments for running bills, etc, will be made after effecting the statutory deductions of TDS, Work Contract Tax, Service Tax (reverse charge), etc . Retention money / Security deposit will be deducted on each bill as per clause 6(ii). The final bill shall be paid only after issue of Work Completion Certificate by Engineer In Charge/Officer In Charge of HLL Life care Ltd .

23. The Quantity shown in the schedule is an approximate estimated quantity. No rate revision will be entertained if the quantity increases/decreases due to the site condition while executing the work.

24. If contractor is executing any extra items as per direction of Engineer in charge / Officer in charge, it will billed as per Market rate analysis / as per you reasonable quote.

25. Settlement of Dispute: Arbitration shall not be the means of settlement of dispute or claims or anything on account of this Contract. If any disputes and difference arising out of the contract are to be settled by a civil court at Thiruvananthapuram.

For HLL Lifecare Ltd.

Associate Vice President and Business Head (HCS)

SPECIAL CONDITIONS

SPECIAL CONDITIONS

1. All electrical work shall be carried out in compliance with specifications given hereunder in this section and in compliance with Indian Standard specifications and Indian Electricity Act and Rules in force. The works shall also conform to any special requirement of Local State Electricity Board. If any case, the above-mentioned rules, regulations etc. are not in accord, the division of the consultant Engineer-in-charge regarding rules to be followed or manner of execution of work shall be final and binding. The work shall be executed under the direct supervision of person holding a certificate of competency issued by the State Government (Chief Electrical Inspector) for the type of works involved in conformity with the best methods of modern engineering practice and to the entire satisfaction of the Consultant / Engineer-in-Charge. The contractor has to submit the test report at various stages of completion as per requirement of the client

1.1 Work shall be executed by licensed electrical contractor approved by the Owner / Architect / Electrical Inspectorate.

1.2 These special conditions of contract shall be read in conjunction with the General Conditions of Contract, Schedule of Quantities, Technical Specifications, Drawings and other documents relating to the work and shall have preference over laid down general conditions and specifications.

1.3 The contractor shall permit free access and afford normal facilities and usual conveniences to other agencies or departmental workman to carry out connected work or other work services under separate arrangements. The contractor will not be allowed any extra payment on this account.

1.4 All soil, filth or other matter of any nature taken out of any trench, sewer drain, cesspool or other place shall not be deposited on the surface, it shall at once at carted away by the contractor free of charge to a suitable pit or place to be provided to him.

1.5 The contractor shall provide all equipment, instrument labor and such other assistance required, by the Engineer-in-Charge for measurement of the work, materials etc.

MATERIALS

All materials, equipment's, fittings and fixtures used in electrical works shall conform to the attached list of approved make of materials.

All material shall be new, soundly and robust in construction and well finished. Surplus material after completion of work shall be taken back by the contractor and the cost shall

be recovered if the advance payment has been made earlier by the client.

Unless otherwise stated in the conditions of contract, of contract, samples of all materials, fittings and fixtures to be supplied by the contractor shall be submitted to the engineer-in-charge for his approval. The contractor shall not commence the work until the samples are approved, in writing from the engineer-in-charge.

The contractor shall ensure that all the materials incorporated in the work are identical in all respects with the approved sample. All samples not destroyed in testing shall be returned to the contractor after completion of contract. No payment shall be made for samples destroyed in testing.

CLARIFICATIONS OF DISCREPANCIES

4.1 In case of any discrepancy between specifications and drawings etc. or disputes in respect, the interpretation and decision of the Engineer/ project-in-Charge shall be final and binding.

MISCELLANEOUS

5.1 After completion of the work the whole installation shall be tested by the contractor in the presence of the Engineer/ Project-in-charge. The tests shall comply the I.E.E. Regulations. The contractor shall be responsible to provide all the necessary testing instruments, such as megger, insulation tester, earth tester, multi meter, AVO meter etc. for carrying out the above tests.

5.2 The work will not be considered as complete and taken over by the Employer till all the components of the work after being completed at site in all respects have been inspected / tested by the Engineer-in-Charge to his entire satisfaction and a completion certificate issued by the Project Engineer/Project-in-Charge to this effect.

5.3 At the completion of the work and before issuance of certificate of virtual completion, the contractor shall submit 3 set of as built drawings with one reproducible of each drawing. Layout drawings drawn at approved scale indicating the complete wiring / cabling / earthling system as installed.

5.4 The contractor shall submit a detailed schedule of program of work, on demand of Owner's Representative/Project Engineer/Project-in-Charge.

WORK AND WORKMANSHIP

6.1 The work shall be of the highest standard, both as regard its design and workmanship. Modern tools and first class, latest techniques shall be employed for its execution.

6.2 Any damage done to the building during the execution of work shall be responsibility of the contractor and it shall be made good by him, at his cost, to the entire satisfaction of the Owner's Representative/Project Engineer/Project-in-Charge.

6.3 All electrical work shall be executed by skilled electricians under the direct supervision of whole time, fully qualified licensed electrical engineers and supervisors. The contractor shall produce requisite evidence regarding the qualification of the engineer, supervisors and other workers.

6.4 The contractor shall possess all the relevant and valid licensed as per the regulations of the Indian Electricity Rules and the Local Electrical Inspector's requirements.

CERTIFICATE OF INSPECTION

7.1 Complete scheme drawing for equipment's/earthling/cable layout/schematic drawing and other details as per requirements shall be prepared by the contractor and got approved by Owner's Representative/Project Engineer/Project-in-Charge, before commencement of work. Nothing shall be payable to contractor on this account.

7.2 The contractor shall be responsible for getting the installation inspected and approved by the Electrical Inspector and other, local electric supply company.

7.3 The contractor shall obtain and deliver to Owner's Representative/Project Engineer/Project-in-Charge the certificate of final inspection and approval of the local electrical authorities concerned. The statutory fees etc. shall be paid by the contractor and it may be reimbursed on submission of original documents.

7.4 In case of any defects are pointed out by the Electrical Inspector(State/Central Authority) , the contractor shall remove these defects at his own cost and arrange for re-inspection or inspection by the electrical inspector, till such time the installation is finally approved and the required certificate is issued. The contractor shall bear all expenses and deposit the necessary fees for subsequent inspections by the Inspectorate/Board.

7.5 Owner's Representative/Project Engineer/Project-in-Charge shall have full powers to get the material or workmanship *etc* inspected and tested by an independent agency, at the contractor's expenses in order to ascertain their soundness and adequacy.

7.6 The contractor shall be responsible for obtaining all necessary approvals for entire scheme from State Electrical Board before commencement of the work. All coordination with SEB shall be responsibility of contractor till commissioning and

getting electricity in the complex and finally handing over the installation.

7.7 The contractor shall possess State Electrical Contractor's license and all the relevant and valid other licenses as per the regulations of the Indian Electrical Inspector's requirements.

7.8 Any amount to be deposited with the State Electrical Board shall be deposited by the contractor after observing necessary formalities required and take all follow up action for the same. However, the amount so deposited by the contractor will be reimbursed to the contractor on production of necessary and adequate documentary proof/records.

7.9 Working drawing for all system shall be prepared by the contractor & got approved before starting of the work.

TECHNICAL SPECIFICATIONS

(ELECTRICAL WORKS)

TECHNICAL SPECIFICATIONS

LT SWITCH BOARDS (CUBICAL TYPE)

The switch board shall be metal clad, totally enclosed, single front, floor mounted, cubical type for use on 415 volts 3 phase, 50 cycles system with a fault level withstand of 50kA RMS symmetrical. The switch board shall be made up of the requisite vertical sections. Which when coupled together shall form continuous dead front switch boards of dust and vermin proof construction. All doors shall be provided with neoprene gaskets. Each vertical panel structure shall contain a cable way alley of adequate width with provision for suitable cable supports. The cable compartment shall have hinged door. There shall be a separate gland plate for each cable entry. The entire switch board shall be factory assembled. The type of enclosure shall atleast provide degree of protection covered by IP:53 (weather proof enclosure) of IS:2147-1962

The panel shall include the required number of MCB / FSU and breakers as per item, Aluminum bus bars as per requirement and item of work with separate neutral bar & earth bars.

The units should be arranged in their formation to provide a compact switch board having a pleasing appearance. The minimum depth of switch board shall be 450mm and the height be restricted to 2000mm.Safety interlocks shall be provided. All the MCCB's shall be provide with vertical operation.

All indicating instruments shall be of the flush mounting industrial pattern conforming to the requirement of IS:124. Separate compartment shall be provided for accommodating instruments, indicating lamps, control contractors and fuses etc. these shall be accessible for testing and maintenance without any danger of accidental contact with line parts of the circuit breakers, unit's bus bar and connections.

Control wiring shall be of copper conductor and shall be color coded for easy identification of circuits. This should be of not less section than 2.5 sq mm not more than two connections shall be made off anyone terminal.

All cable shall be neatly bunched and shall be secured to wiring cradles. All outgoing cables shall be fitted with identification ferrules at each end. Circuit diagram showing the arrangement of circuits shall be pasted on the inside of panel door and covered with transparent plastic sheet. Knockout holes of appropriate size and number shall be provided with panel in conformity with the location of incoming and outgoing cables/conduits. Facility shall be provided for termination of cables from both above and below the panel. Where cables enter from below, cable eyes shall be provided for connections to main earth. The earth bar shall run within the base frame.

All steel material used in the construction of the switch board should have undergone seven tank process and the final finish of approved color and shall be devoid of pin holes or any other deformation.

Engraved plastic labels shall be provided indicating the feeder details. Danger notice plate shall also be provided as per I.E. Rules. All nuts, bolts and washers shall be cadmium plated.

The construction details of the LT panel shall be submitted and got approved by the engineer-in-charge 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.

L.T. CABLE

L.T. cable shall be of aluminum/copper conductor as per the BOQ (Bill of quantities) or as instructed by project engineer / Project-in-charge, FRLS type PVC insulated, PVC sheathed steel tape armored construction conforming to IS- 1554 of 1100 volts grade. The aluminum conductors shall be stranded for sizes above 16sq mm and sector shaped standard conductors shall be used for heavy sizes. As far as possible, cables shall be supplied in drums. Cables supplied shall bear manufacturer's identification marks at regular intervals.

CABLE TERMINATIONS

Cable leads shall be terminated at the equipment terminals by means of crimp type connectors. Crimping shall be done by hydraulically operated tools and conduction jelly shall be applied. On the conductor Insulation of the leads should be removed immediately before the crimping. Conductor surface shall be cleaned and shall not be left open for long, prior to crimping to prevent oxidation. Control cables of single strand cables may be directly terminated on to the terminals. Straight through joint if required shall be made by rising epoxy resin cold setting compound type of approved brand. Compression brass cable gland wherever used shall be of current size for cable and terminations. No oversize cable glands shall be used. The gland must grips the armor of the cable firmly, so that in the event of ground movement no undue stress is transferred to the cable conductors. The gland must establish good electrical contact between cable armor, lead sheath and body of switcher. Identification ferrules indication the circuit shall be used for incoming and outgoing cables.

CABLE WORK IN UNDER GROUND

While laying underground cables care should be taken so that any underground structure such as water pipes, sewerage lines, etc. are not damaged. Any telephone or other cable coming in the way shall be properly protected as per instructions of Engineer-in-charge. All cable routes shall be carefully measured and cable cut to the required lengths leaving sufficient length for the final connection of the cable. All cable trenches entering sub-

stations plants etc. shall be effectively sealed after installation of cables to avoid entry of water.

The L.T. cables shall be laid not less than 75 cm below ground level in a trench 35cm wide minimum .The depth of the trenches shall be uniform throughout. A bed of 17 cm dry sand shall be load before he cable is laid.

When the cable is properly straightened and laid in the trench, it should be covered all around 8*mm* thick layer of sand. Approved cable indicators shall be fixed at suitable distances along the route of the cable.

Unless otherwise specified the cables shall be protected by second class bricks of not less than 22.5x 10.0x7 cm or stone tiles or any other approved material placed on sides and top of the cable to form a channel throughout the length.

Filling of trenches shall be done after the sand cushioning and laying of tiles are carried out to the satisfaction of the engineer-in-charge, where ever roads or lawns have been cut off or Kerb stones displaced the same shall be repaired/replace to the original finish without any extra cost.

CABLE WORK

LAYING OF CABLES OVER DUCTS/ WALL/TRAYS:-

Cable ducts should be of such dimension that the cables laid in it do not touch one another . Cables shall be neatly arranged on the trays in such manner that cross-crossing is avoided and final take off to switch gear is easily facilitated.

All cables will be identified close to their termination point by cable number as per circuit schedule. Cable numbers will be punched on 2mm thick aluminum strips and securely fastened to the cable. In case of control cables all covers shall be identified by their wire numbers by means of PVC ferrules. For trip circuit identification additional red ferrules are to be used only in the switch gear/ control panels, cables shall be supported so as to prevent appreciable sagging. In general distance between supports shall not be greater than 600mm for horizontal run and 750mm for vertical run.

TESTING OF CABLES:-

After laying and jointing work is completed, a high voltage test should be applied to all cables to ensure that they have not been damaged during or after the laying operation and that there is no fault in the jointing. The cable shall be tested with an insulation

tester of appropriate rating. In case, the test results are unsatisfactory the cost of all repairs and replacement and relaying will be made good by the contractor. Nothing shall be payable for conducting high pot test.

CABLE TRAYS:

Cable trays shall be ladder type fabricated out of mild steel/ slotted angles and flats of required width as per design. Bends shall be prefabricated the cable tray shall be primed and painted with two coats as approved by Engineer - In - Charge. Suitable provision shall be made where a tray crosses expansion joints. The width of the tray shall allow for a suitable separation between cables the design shall allow for adequate bending reduces for the sizes of cables.

The tray shall be suspended from the sophist of the concrete slab by means of approved steel hangers spaced at a distance of not more than 100cms. Suitable bushes shall be provided where cables pass through apertures in the tray. Cable must securely fixed to the tray with fasteners .In routing, necessary barriers and spacing shall be maintained for cables of different voltages in case they lie side by side. Telephone cables shall cross the power cables only at about right angle and these two shall not run in close proximity. Full details of the tray shall be approved by the site engineer before fabrication. Earth continuity shall be maintained between each section of cable tray and each total run of tray shall be effectively bonded to the nearest earth continuity conductor. AII nuts and bolts used shall be of galvanized steel.

EARTHING

All non-current carrying metal parts of electrical installation shall be earthed as per IS:3043-1986 with latest amendments. All metal conduits, cable sheathes, switch gear, DB's, light fixtures, equipments and all other parts made of metal shall be bonded together and connected to earth electrodes. Earthling shall be in conformity with provision of rules 32, 61, 62, 67& 68 of Indian electricity rules (1956).

All earthing conductors shall be of high conductivity copper and shall be protected against mechanical damage. The cross sectional area of earth conductors shall not be smaller than half that of the largest current carrying conductor. However the contractor shall use the sizes specified in the bill of quantities. Main earth bus shall be taken from the L T. Switch board to earth electrodes. No earth pit shall be fixed within 2m of a wall or foundation. Efforts shall be made to locate them in grass lawns or near flower beds or water taps. The distance between two earthing stations shall be at the least 3*m.*

For plate earthing , the earth electrodes shall be 1200x1200x6mm 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.

SF6 / VCB RMU

TECHNICAL SPECIFICATION OF 11KV SF6 / VCB METAL ENCLOSED, OUTDOOR RING MAIN EXTENSION UNIT (RMU) (IEC standard equipment)

SCOPE OF SUPPLY

This specification covers design, manufacture, shop testing, inspection, packing, delivery to site, erection, testing and commissioning of 11 kV, Metal Enclosed, panel type, extensible Outdoor SF6 RING MAIN UNIT (RMU) fully type tested according to IEC 60298 standards. The unit shall be compatible to be coupled with the existing KSEB RMU near SAT Hospital substation.

This RMU should be complete with all components necessary for its effective and trouble free operation along with associated equipment etc. such components should be deemed to be within the scope of supplier's supply.

The design of the switchgear should be exclusive and specific responsibility of supplier and should be comply with current good engineering practice, the relevant codes and recommendation, the project specific requirements. The RMU should be fixed type SF-6, insulated circuit breakers, with O/C & E/F relay for the protection of the transformer. It should be maintenance free equipment, having stainless steel robotically welded enclosure.

STANDARDS AND REFERENCE DOCUMENTS
Codes and Standards

The RING MAIN UNIT (RMU) should be designed, manufactured and tested according to the latest version of:
IEC 60694: Common specifications for high-voltage switchgear and control gear standards.
IEC 60298: A.C metal-enclosed switchgear and control gear for rated voltages above 1KV and up to and including 72KV and the IEC Codes herein referred.
IEC 60129: Alternating current Disconnector (isolators) and earthing switches
IEC 60529: Classification of degrees of protection provided by enclosures
IEC 60265: High-voltage switches-Part 1: Switches for rated voltages above 1kV and less than 52 kV
IEC 60056: Circuit breakers
IEC 60420: High-voltage alternating current switch-fuse combinations
IEC 60185: Current transformers
IEC 60186: Voltage transformers
IEC 60255: Electrical relays

The design of the switchgear should be based on safety to personnel and equipment during operation and maintenance, reliability of service, ease of maintenance, mechanical protection of equipment, interchangeability of equipment and ready addition of future loads.

MINIMUM REQUIREMENTS

1. Hermetically sealed metallic Epoxy / Stainless steel enclosure for OUT DOOR RMU application. The manufacturers shall conform the normal current ratings mentioned in GTP at 45 deg. Ambient without derating.
2. Enclosure with I.P.54 standard protection.
3. Offered RMU must be extensible.
4. Cable boxes shall be on Front / side/rear sides.
5. RMU ENCLOSURE MUST BE SHIELDED AGAINST SOLAR IRRADIATION AND TESTED FOR AMBIENT OF 45 / 50 DEGREE C.

315kVA USS :

The Unitized Substation shall be compact in construction. The equipment offered shall be complete with all necessary parts for effective and trouble-free operation in the proposed system. Such parts will be deemed to be within the scope of the supply irrespective of whether they are specifically indicated in the commercial order or not. The design, manufacture and performance of the equipment shall comply with all currently applicable statutes, regulations and safety codes. Nothing in this specification shall be construed to relieve the tenderer off his responsibilities. It shall comprise mainly of the following :

1. 315 kVA Copper wound 11KV /433 V Dry type cast resin type Transformer .
2. HT 11KV, 35KA 630 A 50 Hz, LBS (Load Break Switch)
3. LV Panel with 1 No. 600 A 4Pole 50kA MCCB with OC & E/F relay.
4. Provision for Cable entry at HV and LV side,
5. CTs,PTs, HRC Fuses, TOD Meter chamber with suitable sealing facility and all accessories complete.
6. All other standard fittings and accessories complete conforming to relevant standards.

Tolerances on all the dimensions shall be in accordance with provisions made in the relevant
Indian standards and in these specifications. Otherwise the same will be governed by good engineering practice in conformity with required quality of the product.

SYSTEM PARTICULARS:
TRANSFORMER:

Type	:	Cast Resin, Core Type, Double Wound
kVA	:	400 kVA
Nominal System Voltage	:	11kV
Corresponding Highest System Voltage	:	12kV

Vector group		:	Dyn-11.
Nominal voltage ratings			
	Primary voltage`	:	11 kV
	Secondary voltage	:	0.433 kV
Frequency		:	50 Hz with ±3 % Tolerance
Neutral earthing		:	Solidly earthed
Percentage Impedance		:	5% at 75deg C (subject to IS tolerance)
Tapping on HV side		:	+5% TO -10% IN STEPS OF 2.5% Changeable by off circuit tap links
Type of Installation		:	OUTDOOR
Type of Insulation		:	CLASS F
Impulse Voltage withstand at HV Side		:	75kV (p)
Power frequency withstand voltage			
	HV SIDE	:	28 kV (rms)
	LV SIDE	:	3 kV (rms)
Applicable Standards		:	IS:2026/77, IS11171/85

The windings of the transformers shall be connected to Delta (Δ) on the primary side and star (Y) on the secondary side. The neutral of the LT winding shall be brought out to a separate terminal.

LOAD BREAK SWITCH:

Rating	:	11KV, 26.2KA, 630A
CT Ratio	:	30/5A, 15VA, Cl:0.5 S
PT ratio	:	11KV/110V, 100VA, Cl:0.5
Bus bar rating	:	630A
HT HRC Fuses 40 Amps 3 Nos		
Shunt Trip coil	:	230 V AC

The unit shall comprise of all standard accessories like bushings, space heater, thermostat, provision for fixing TOD meter, sealing provision, etc. complete.

Approved Makes

APPROVED MAKES

List of Approved makes for electrical works is given below. Other equivalent manufacturers may be considered with prior approval; however the decision of the Engineer-in-charge shall be final.

1	Switch Fuse Unit (HRC Type)	Schnider/GE/L&T/Siemens/C&S/Havells
2	MCB's, MCCBs, RCCBs, ELCB's & MCB DBs	Legrand / L&T /Siemens / Havells / C&S / Schneider / GE / Hagger / Anchor / Standard
3	LT XLPE Aluminium Armoured cables upto 1100v	Polycab/ Havells/ National/Ralison/Paragon
4	HT XLPE Aluminium Armoured cables upto 11000V	Polycab/ National/INCAB/
5	Air Circuit Breakers	Schneider/ GE /L&T/Siemens
6	Terminals	Elmex /Technoplast
7	Lugs	Dowells/ Ismal
8	Glands	Gripwell/ Comet
9	Indicating lamps	L &T/ Siemens/Technique
10	Power factor correction relay	Syntron/ Avomec/Sigma/
11	Indicating Instruments	L&T, AE, IMP, MECO
12	KWH Meters	L&T/HPL SOCOMEC
13	Current Transformers	AE/ Kappa
14	Selector Switches	Salzer-L&T/ Kaycee
15	Change over switches	HH Elecon/HPL
16	USS/ Transformers/ HT Switch gear	Intrans/ Voltamp/ Kirloskar
17	RMU	CG Lucy
18	HT Jointing Kits	Raychem/ Mahindra/Denson/Cabseal
19	LT Panels	CPRI tested & approved
20	Power Capacitors	Crompton/Siemens Apcos/Khatou
21	HRC Fuse Base & HRC Fuses	L&T/GE/Schneider/HPL
22	Metal Pipes	Jindal, Zenith, Tata, Surya,
23	Lighting Fittings & Luminaries	Crompton/Philips/Wipro/BAJAJ/Havell's
24	PVC insulated 1.1KV grade copper wires	RR Kabel/ National/Ralison/RKG/Finolex/Polycab / Havells
25	Piano/Modular Type Sockets & Switches	Roma(Anchor)/Legrand/MK/Crabtree/

Annexure -A

ACKNOWLEDGEMENT

I/We have read and examined the Notice Inviting Tender, and Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, Schedule of Rate & other documents and rules referred to in the conditions of contract and all other contents in the Tender document for the work.

I/We hereby Tender for the execution of the work specified within the time specified as in accordance in all respect with the specifications, designs, drawing and instructions in General Rules and Directions and the Conditions of contract and with such materials as are provided for, by, and in respect of accordance with, such conditions so far as applicable.
I/We agree to keep the Tender open for Ninety (90) days from the date of opening of financial (price) bid and not to make any modification in its terms and conditions. A sum of Rs. 70,000/- (Rupees Seventy Thousand only) is hereby forwarded in the form of ..... favour of HLL Lifecare Ltd., as earnest money. If I/We, fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that HLL shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/We agree that HLL shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely, otherwise the said performance guarantee shall be retained by HLL towards security deposit to execute all the works referred to in the Tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in the Tender form.

We are hereby returning this copy of Acknowledgement duly signed.

for & on behalf of M/s._____

Signature :

Name : _____

Designation : _____

(Seal / Stamp)

Place :

Date :

PROFORMA FOR PREQUALIFICATION OF CONTRACTORS

PROFORMA FOR PREQUALIFICATION OF CONTRACTORS

I. General Information

1) Name of the firm :

2) Address :

3) Contact person :

Phone

Fax

Email

Cell Phone

4) Place and year of :

Incorporation of the firm

5) Registration No. :

(Copy to be enclosed)

6) Constitution of the firm :

(Pvt. Ltd., Public, Proprietary)

7) Name & qualification of the Chief :

Executive of the firm

II. Organization Structure of the Firm

Technical Chief of the Organization

a. Name :

b. Designation :

c. Address :

d. Telephone :

Fax

Email

Cell Phone

e. Qualification :

f. Age :

III. a) Details of Top Technical Personnel to be provided as in II above.

b) Details of Field/Supervisory Staff to be provided as in II above.

IV. Details of Projects handled of similar type

1) Details of completed projects for the last 3Years. (Completion certificates shall be enclosed)	:(*Furnish as per format of Annexure I*)
2) Details of ongoing projects	:*(Furnish as per format of Annexure II)*
3) Information on works for which bids have been submitted and are yet to be completed as on	:*(Furnish as per formats of Annexure III & IV)*
4) Details of Machinery, Tools and Measuring equipment owned (form enclosed	:*(Furnish as per format of Annexure V)*
5) Details of Key Personnel	:*(Furnish as per format of Annexure VIII)*

V. Financial Information

1) Turn over for the last 3 years :*(Furnish as per format of Annexure VI)*

2) Permanent Account No. (IT) :

3) Tax Identification No. (TIN) :

4) Service Tax Registration No. :

5) Audited balance sheet and P&L Statement during the last 3 years :

(Enclose copies for the last three years)

7) Whether any legal cases specific for supply, installation, testing and commissioning of Elevators are pending against the firm during the last five years, Please furnish details :*(Furnish as per format of Annexure Vii)*

Annexure I

(Sample Format)

Details of completed projects with a minimum total outlay of Rs.50 lakh in the last 3 years.

Project name	Name of the client	Description of work (type of Building)	Contract No.	Value of Contract (RS. in Lakh)	Date of Work Order	Stipulated period of completion	Actual period of completion	Remarks, Explain reasons for delay, if any

Enclose satisfactory completion certificate and date of completion from the concerned Engineer-in-charge not below the rank of Executive Engineer in the case of Govt. or Chief executive in the case of Private Organization. Completion certificates for works issued by private parties shall be supported by TDS certificates

SIGNATURE OF BIDDER

Annexure II

(Sample Format)

Details of ongoing projects

(Refer Para IV (2) of the format)

Project Name	Name of the Client	Description of work	Contract No.	Value of Contract (Rs. in lakh)	Date of Work Order	Stipulated period of Completion	% progress achieved	Remarks

Enclose a progress certificate from the concerned Engineer-in-Charge not below the rank of Executive Engineer in the case of Govt. or Chief Executive in the case of Private Organization.

SIGNATURE OF BIDDER

Annexure III

(Sample Format)

A) INFORMATION ON WORKS WITH EXISTING COMMITMENTS

Description of Work	Place and State	Name and address of Client	Value of Contract (RS. in lakh)	Stipulated period of completion	Remarks

SIGNATURE OF BIDDER

Annexure IV

(Sample Format)

B) TENDERS SUBMITTED BUT PENDING FINALISATION

Description of Work	Place and State	Estimated value of works (Rs. in lakh)	Stipulated period of completion	Date when decision is expected	Remarks

SIGNATURE OF BIDDER

Annexure V

(Sample Format)

Details of Machinery, Tools & Equipment/ Measuring Equipment owned.

Name of Equipment	Nos.	Capacity/Size	Age/Condition

SIGNATURE OF BIDDER

Annexure VI

(Sample Format)

Turn Over for the last 3 years

Sl.No.	Year	Turn Over (Rs. in crore)	Remarks
1.	2015-16		
2.	2014-15		
3.	2013-14		

SIGNATURE OF BIDDER

Annexure VII

(Sample Format)

Details of legal cases pending against the firm during the last three years

Sl. No.	ORGANISATION AGAINST WHOM THE LITIGATION IS INVOLVED	BRIEF DETAILS OF DISPUTE	AMOUNT INVOLVED (Rs.)	PRESENT STATUS	Remarks

SIGNATURE OF BIDDER

Annexure VIII

(Sample Format)

Details of Key Personnel to be provided for the work

Sl. No.	Key Personnel	Name & Qualification	Years of Experience
1.			
2.			
3.			
4.			
5.			

- HLL shall have the right to demand augmentation of the staff if required.

SIGNATURE OF BIDDER

DRAWINGS

1. HCS/SAT/SLD-1

BILL OF QUANTITIES

HT ELECTRIFICATION WORKS FOR HINDLABS CT, MRI & USG SCAN CENTRE AT SAT HOSPITAL, MEDICAL COLLEGE, THRIUVANANTHAPURAM

BILL OF QUANTITIES

Sl. No.	Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)
ELECTRICAL WORKS				(in Figures and Words)	
1	**SECTION -1 : PANEL BOARDS**				
	Supply all materials ,Designing, fabricating,transporting ,erecting testing and commissioning of following cubicle type fully compartmentalised ,free standing switch boards ,dust and vermin proof ,Fabricated out of 14 Gauge CRCA Sheet and providing necessary cut- outs for mounting meters, relays, indication lamps,bus bar interconnection etc, detachable covers for bus bar chamber and cable alley, powder coating the assembly after subjecting to 7 tank process etc as required with approved color . The switch boards should be fabricated as per electrical inspectorate standards.Should conform to IS. /BIS standards. Suitable size of Aluminium busbars sleeved and supported by DMC/ SMC. Insulators. Equally rated netural links shall be provided for TPN switch gears.				
1.1	**MSB - MAIN SWITCH BOARD**				
	The panel should comprise of the following items: 600A TPN Aluminium Bus bars with heat shrinkable insulation sleeves - 1 set. with Necessary interconnections. Incomer : 630 A 4Pole Isolator With 630A 4P Contactor- 2 nos. RYB indication lamps and controlling MCBs - 2 set Digital Multifucntion meter for V,A,F,PF with CTs CL:1 for EB incoming feeders- 1 Set Provision for providing AMF Control Sysytem. Outgoing : 400 A, 35kA, TPN MCCB With Thermal magnetic Release - 1 set 250 A, 35kA, TPN MCCB With Thermal magnetic Release - 3 set 125 A, 35kA, TPN MCCB With thermal magnetic release - 2 set Panel Board as per above specification - 1 No.	Job	1		

1.3	**APFC**				
	Incomer : 200A,TPN ISOLATOR Digital Multifucntion meter for V,A,F,PF With CTs CL:1 with RYB indication lamps - 1 Set 200A Aluminum bus bar with heat shrinkable insulation sleeves - 1 set Intelligent power factor controller with control MCB including providing control cable and connections form MSB to Capacitor panels, etc. complete Out Going : 40 A TP MCB - 2 Nos. 32 A TP MCB -1 No. 25A TP MCB -2 Nos. 16A TP MCB -1 Nos. ON-OFF DUTY Contactor Capacitor (AC 6B duty) - 6 set ON-OFF Push buttons-6 Set. 20kVAr Capacitor bank - 2 Nos. 15kVAr Capacitor bank - 1 Nos. 10kVAr Capacitor bank - 2 Nos. 5kVAr Capacitor bank - 1Nos. Panel Board as per above specification - 1 No.	Job	1		
	SECTION -2 : TRANSFORMERS AND DG SETS				
2.1	SITC (Supply, Installation, Testing and Commissioning) of 315 KVA INDOOR UNITISED SUBSTATION comprising 315 kVA Copper wound 11KV /433 V Dry type cast resin type Transformer . 3 Phase ,vector DYN -11 with off load tappings from +5% to -10 % in steps of 2.5%,operatable on off-circuit by tap links provided, with HV Terminals connecting to HT 11KV, 35KA 630 A 50 Hz, LB-SFU with two nos epoxy resin cast CT 30/5 A,CL- 0.5, 15VA burden,and 1 No epoxy resin cast PT 11KV/110 V , CL-O.5,100VA burden with shunt trip coil .(230 V AC-) LED type. on-off indication, Space heater with thermostat - 1 set, Incoming cable entry suitable for 3X150 sqmm XLPE cable. with provision for fixing TOD meter with glass cover in front of the meter test terminal box etc. complete (CT,PT, TOD Meter , chamber shall have suitable sealing facility.LV side should consist of 1 No. 600 A 4Pole 50kA micro processor MCCB, SC &Earth fault release with shunt trip coil, Standby low set E/F relay with CR 5P10 CTs of suitable burden - 1 set, cable box suitable for two runs of 3.5X 400 sq.mm XLPE Cable , winding temp. indicator and all other standard fittings and accessories conforming to IS:2026/77 & IS : 11171/85 .Etc. complete.	Job	1		

2.2	Supply Installation Testing and Commissioning of 11kV, 630A, 20kA ,SF6 OUTDOOR RMU Extension unit as per the technical specifications for extending the existing KSEB's RMU at SAT Hospital premisis. The rate shall include providing necessary foundations, fixing in position , coupling. The rates shall also include on-site testing by authorized agencies. Make : CG Lucy	Job	1		
	SECTION -3 : HT CABLE				
3.1	Supply of one number PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of 3C x 150 Sq.mm size	m	95		
3.2	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required.				
3.3	Above 120 sq. mm and upto 400 sq. Mm	m	95		
3.4	supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for 150 Sq.mm 3 core, XLPE aluminium conductor cable of 11 KV grade as required.	Each	2		
	SECTION -4 : LT CABLE				
4.1	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
4.1.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	m	240.00		
4.1.2	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	m	15.00		
4.1.3	Above 185 sq. mm and upto 400 sq. Mm	m	300.00		
4.2	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
4.2.1	3.5 C x 400 sqmm	Each	4.00		
4.2	3.5 C x 240 sqmm	Each	2.00		
2.0	3.5C x 35 Sq.mm	Each	2.00		
4.2.3	4 C x 25 sqmm	Each	6.00		
4.2.4	4C X 2.5 Sq.mm	Each	4.00		
4.3	Supply of following size 1.1 KV grade XLPE insulated, PVC sheathed, armoured Aluminium conductor power cable conforming to IS 7098 (Part 1) amended upto date.				
4.3.1	3.5 C x 400 sqmm	m	300.00		

4.3.2	3.5 C x 240 sqmm	m	15.00		
4.3.3	3.5C x 35 Sq.mm	m	25.00		
4.3.4	4 C x 25 sqmm	m	45.00		
4.3.5	4C X 2.5 Sq.mm	m	170.00		
	SECTION 5 - EARTHING				
5.1	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/coke and salt as required.	Each	6.00		
5.2	Earthing with C.I. earth plate 1200 mm X 1200 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Each	4.00		
5.3	Providing and fixing 25 mm X 3 mm copper strip on surface or in recess for connections etc. as required.	m	110.00		
5.4	Providing and fixing 4.00 mm dia copper wire on surface or in recess for loop earthing as required.	m	80.00		
5.5	Providing and fixing earth bus of 50 mm X 5 mm copper strip on surface for connections etc. as required.	m	1.00		
	SECTION 6 - MISC				
6.1	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
6.1.1	300 mm width X 62.5 mm depth X 2.0 mm thickness	m	45.00		
6.2	Supply and providing 6 mm thick & 1 m wide electrical grade chequered type rubber mat to withstand 3.3 KV dielectric strength conforming to IS 5429/ 1969	m	6		
6.3	Supply and providing 5 Kg. Dry Chemical Powder type Fire Extinguisher with hose and clamps including fixing it to wall as required.	Nos.	3		
6.4	Supply, fabrication and fixing 3 nos MS Fire buckets on suitable fabricated MS angle iron stand with hook, painting with red paint & filled with dry sand as required with all required accessories.	Set	2		
6.5	Supply and providing First Aid Chart duly framed and placed in a conspicuous location for clear vision.		2		

6.6	Supplying and making cable route marker with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) of size 60 cm X 60 cm at the bottom and 50 cm X 50 cm at the top with a thickness of 10cm including inscription duly engraved as required.	Each	20		
6.7	Supply Installation Testing and Commissioning of Emergency Push Button Switch with 2 NO & 2 NC connectors for emergency trip facility for tripping the HT supplies of HLL and SAT simultanesously including all connections complete. (cable shall be paid extra)	Each	2		
6.8	Supply, installation, testing and commissioning of a neutral CT of ratio 100/5A, CL:5P10 ,15VA in a suitable metallic sheet steel enclosure in the transformer neutral for low set E/F protection, control cabling to the E/F relay including termination etc. complete	Set	1		
6.9	Supply Installation ,testing&commissioning of HT -TOD Meter for the above including all connections, complete. The meter shall be of approved make prescribed by Electricity board/ Inspectorate and the same shall be tested as per statutory norms.	Set	1		
6.10	Supplying and fixing of light class G.I. pipe of 100 mm dia. (nominal) 3 metres length along the pole for protection of under ground cable as required.	m	10		
6.11	Excavation for cable trenches in soft soil, depth upto 1m including dressing of sides lift upto 1.5 m, including getting out the excavated soil, refilling with sand and or good soil after laying of cable/ pipe etc. in layers of 20 cm, ramming, watering and disposal of surplus excavated soil as directed, within a lead of 50 metres.	Cu.m	8		
6.12	Supply, fabricabtion and fixing of of MS angle supports for cable trays, etc. Including welding, bolting, chipping , grouting etc, including applying one antirust coat of approved primer and two finished coats of approved paint , breaking and finishing of walls, including supply of fastners, all accessories,complete	Kg.	250		
	Documentation & Approvals				
6.12	Preparation, submission of drawings and applications for the installation and service connection to Electrical Inspectorate / Electricity board/ Statutary agencies and obtaining Power allocation, sanction and energising of the installation,obtaining sanction from the authorities complete Including including laisoning works, providing necessary assistance to the client for obtaining sanctions.	Job	1		
				TOTAL	
	(Rupees.....only)				