



**BHARAT HEAVY ELECTRICALS LTD. NEW DELHI**

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HUMAN RESOURCE DEVELOPMENT INSTITUTE

(ADMINISTRATION DEPARTMENT)

**TENDER NOTICE NO. MG/SK/PUR/009**

Sealed quotations are invited in **Two Part Bid System (Techno- commercial Bid-Part: 1 & Price Bid-Part: 2, separately)** for **Civil Kitchen works in HRDI & ESI building at Noida**. Tender document can be collected from SAO, BHEL,HRDI, Plot no.25, Sector 16A, Noida -201301(U.P.) . Alternatively, tender document can also be downloaded from BHEL website [www.bhel.com](http://www.bhel.com) . Tender should be submitted in **Two Part Bid System only** on or before 1400 Hrs on 27/01/2009(1500 Hrs) and Techno-Commercial bid(Part-I) will be opened on 28/01/2009 at ( 1500 Hrs).

SAO

## **CIVIL KITCHEN WORKS**

### **QUALIFYING REQUIREMENTS**

1. The bidder should have minimum 3 years experience in this field as on 31.3.2008 with an average financial turnover of over Rs 1.48 lakhs. Copies of audited Profit & Loss account and Balance Sheet for 2005-06, 2006-07 and 2007-08 to be enclosed.
2. Experience of having successfully completed similar works during last 7 years ending 30.9.2008 either of the following :-
  - a) Completed three civil works costing not less than Rs 1.97 lakhs  
or
  - b) Completed two civil works costing not less than Rs 2.46 lakhs  
or
  - c) Completed one civil work costing not less than Rs 3.93 lakhs

Bidder should furnish the following :-

### **DOCUMENTS REQUIRED**

The tenderer shall submit documents in respect of possessing Qualifying requirements as under duly certified and stamped by his authorized signatory:

- a) Proof of three previous years IT returns in support of Average Annual financial turnover as per clause (1) above.
- b) Proof of work orders or completion certificates in support of the qualifying criteria mentioned at clause 2.0 above.
- c) Each tenderer has to enclose the proof of TIN No.. and PAN No. alongwith the tender
- d) Tenderer has to submit the NO DEVIATION CERTIFICATE duly signed in the format mentioned.

Tender Enquiry No.MG/SK/PUR/009 dt 05/01/2009

Collection of Tender Documents: 24/01/2009

Date of Tender submission:27/01/2009

Date of tender opening:28/01/2009(1600Hrs)

Sub: **Kitchen Works- Civil**

You are requested to submit your most competitive offer for Civil Kitchen works at Noida as per scope, specifications, terms and conditions as given hereunder. You are advised to visit our office at the address indicated above for inspection of the premises, layout etc , prior to submission of your offer.

**Procedure for submission of sealed tender:**

The bidder must submit their Tender as required in three separate covers prominently superscribed as EMD, ( Part-I Technical requirements cum Commercial conditions ) and ( Part II- Price Bid) . Each cover should also indicate the Tender No., Due date and Time as mentioned above. Offer received without EMD will not be considered.

**Cover-I : Earnest Money Deposit (EMD)**

EMD of Rs 10,000/- (Rupees ten thousand only) in the form of Demand Draft/Pay Order in favour of BHEL payable at New Delhi is to be placed in Cover-I. EMD given by all unsuccessful bidders will be refunded normally within fifteen days of acceptance of award of work by the successful tenderer.

**Cover- II/ Part-I: Technical Bid:**

Please submit all information on qualifying requirements, copies of documentary evidence as asked for, Deviation Statement, duly signed and stamped as token of your acceptance to the tender conditions, your commercial terms and conditions. The cover to be properly sealed.

**Cover-III/Part-II: Price-bid**

One copy of your price details in the prescribed Price-Formats(Annexure-I) may be enclosed in Cover-III, duly sealed.

These three separate covers (Cover I, II & III) shall together be enclosed in a fourth envelope and this sealed cover shall be superscribed with Tender name,Tender No. Due date and Time and submitted to this office.

It may please be noted that in the event of award of contract, Security Deposit as due, shall be collected from the successful bidder. The EMD amount of successful bidder will be converted and adjusted against security deposit.

The quotation should reach this office latest by 1500 hrs on 27/01/2009 and the same will be opened at 1600 hrs on 28/01/2009 in presence of the representatives of the tenderers who choose to be present. Quotations received late or not received in line with the above procedure or not in the prescribed formats are liable to be rejected. The Cover -I containing EMD will be opened first. Part-I/Technical bid of only those bidders, whose EMD is found in order will be opened later on the same day. Part-II/ Price-Bid of only those parties who qualify in the techno-commercial bid will be opened later, for which separate intimation will be sent in due course of time.

(S K Kashyap)/SAO

## **SECTION- 1**

### **GENERAL INSTRUCTIONS TO TENDERERS.**

1. This tender specification as a whole, furnishing all the details and other documents as required in the following pages, shall be duly signed and sent in a sealed cover superscribing the name of work as given in the tender notice.
2. The tender shall address to: OFFICER INVITING TENDER AS INDICATED IN THE TENDER NOTICE.
3. Tenders submitted by post shall be sent as "REGISTERED POST ACKNOWLEDGEMENT DUE" and shall be posted with due allowance for any postal delay. The tenders received after the due date and time of opening is liable to be rejected. Telegraphic offers and offers received by telex may not be considered.
4. Tenders shall be opened at the time and date as specified in the tender notice in the presence of such of those tenderers or other authorized representatives who may be present.
5. The tenderers shall closely peruse all the clauses, specifications and drawings indicated in the tender documents before quoting. Should the tenderer have any doubt about the meaning of any portion of the Tender Specifications or find discrepancies/omission in the Drawings of the Tender documents issued are incomplete or shall require clarification on any of the technical aspect – scope of work etc., he shall at once contact the authority inviting the tender for clarification before the submission of the tender.
6. Before tendering, the tenderers are advised to inspect the site of work the environments and be acquainted with the actual working and other prevalent conditions, facilities available, position of material and labour. No claim will be entertained later on ground of lack of knowledge.
7. Tenderer must fill up all the schedules and furnish all the required information as per the instructions in various sections of the Tender Specification. The information furnished shall be complete by itself.

#### **8. EARNEST MONEY DEPOSIT:**

Every tender must be accompanied by the prescribed amount of Rs 10,000/-/- towards Earnest Money Deposit either in Pay order or Demand Draft form.

8.1 Tenders received without Earnest Money in full in the manner prescribed above will not be considered.

8.2 The Earnest Money deposit of the successful tenderer shall be refunded/adjusted against Security Deposit, as the case may be.

8.3 In case of unsuccessful tenderers, the Earnest Money will be refunded to them after finalization of the tender without interest.

8.4 BHEL reserves the right of forfeiture of Earnest Money deposit in case the successful tenderer:-

- a) After opening of Tender, revokes/withdraws his tender within the validity period revises/alters his earlier quoted rates/conditions.
- b) Fails to communicate unqualified acceptance of Letter of Intent.
- c) Fails to start the work as may be indicated in the Letter of Intent.

9. Tenderer must fill up Deviation statement and price bid separately.

10. The tenderer shall quote the rates in English Language and international numerals. Those rates shall be entered in figures as well as in words. In case of difference in rates between words and figures THE LESSER of the two will be treated as valid rate. For the purpose of tender, the metric system of units shall be used.

11. All entries in the tender shall either be typed or be written in ink. Erasers and over writing are not permitted and may render such tenders liable to summary rejection. All cancellations and insertions shall be duly attested by the tenderer.

12. **EVALUATION CRITERIA**

Work will be awarded to overall L1 party.

13. **VALIDITY OF OFFER:**

THE OFFER SHALL BE KEPT OPEN FOR ACCEPTANCE FOR A MINIMUM PERIOD OF TWO MONTHS FROM THE DATE OF OPENING OF TENDERS.

14. **EXECUTION OF CONTRACT:**

The successful tenderer's responsibility under this contract commences from the date of issue of the Letter of Intent by Bharat Heavy Electricals Limited. The successful tenderer shall be required to complete the job within 60 days of placement of order.

15. **SECURITY DEPOSIT**

Upon acceptance of tender, the contractor within the time specified in the Letter of Intent/Work Order must deposit 50% of the Security Deposit before start of the work. The balance amount will be deducted from the monthly running bills of the contractor @10% of the value of each running bill till the total amount is fully recovered. The Security Deposit shall remain valid till the expiry of the maintenance period i.e. upto 6 months from the date of completion of work without carrying any interest. The total amount of Security Deposit will be 10% of the value of work.

If the value of work done at any time exceeds the accepted agreement value, the Security Deposit shall be correspondingly enhanced and the extra amount of Security Deposit shall be immediately deposited by the contractor or recovered from

payment due to him in the above manner. BHEL reserves the right of forfeiture of Security Deposit in addition to other claims and penalties in the contractual obligations or in the event of termination of contract as per terms and conditions of contract. It may be noted that in no case the Security Deposit shall be refunded/released prior to passing of final bill

## 16 **RETURN OF SECURITY DEPOSIT :**

If the contractor fully performs and completes the work in all respects to the entire satisfaction of BHEL and presents an absolute "No Demand Certificate" in the prescribed form and returns properties to BHEL taken, borrowed or hired by him for carrying out the said works, security Deposit will be released to the contractor after deducting all costs, expenses and other amounts that are to be paid to BHEL under this or other contracts entered into with the contractor. It may be noted that in no case the Security Deposit shall be refunded/ released prior to passing of final bill and completion of guarantee period.

Interest shall not be paid on Security Deposit or on any moneys due to the contractor.

## 17 **REJECTION OF TENDER AND OTHER CONDITIONS:**

17.1 The acceptance of Tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever.

a) To reject any or all of the tenders.

If a tenderer expires after the submission of his tender or after the acceptance of his tender, BHEL may at its discretion, cancel such tender. If a partner of a firm expires after the submission of the tender or after the acceptance of the tender, BHEL may cancel such tender at its discretion unless the firm retains its character.

17.2 BHEL will not be bound by any power of Attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. BHEL may , however, recognize such power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.

17.3 If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract ,if awarded and forfeit the Earnest Money /Security Deposit/any other moneys due.

17.4 If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract, if awarded and forfeit the Earnest Money/Security Deposit/ any other moneys due.

17.5 Canvassing in any form in connection with tender is strictly prohibited and the tenders submitted by the contractor who resorts to canvassing are liable to be rejected.

17.6 Should a tenderer or contractor or in the case of a firm or Company of contractors/one or more of its partners/shareholders/directors have relation or relations employed in BHEL, the authority inviting tender shall be informed to the fact alongwith the offer, failing this BHEL may, at its sole discretion reject the tender or cancel the contract and forfeit the Earnest Money Deposit/Security Deposit.

17.7 The successful tenderer should not sub-contract the part or complete work detailed in the tender specification without written permission of BHEL. The tenderer is solely responsible to BHEL for the work awarded to him.

17.8 No deviations to the tender condition will normally be accepted. However,if the tenderer insists for certain deviations to the conditions, financial implication thereof shall be loaded to the quoted price for evaluating the tenderer's offer.

## SECTION -II

### GENERAL TERMS AND CONDITIONS

The following terms & expressions shall have the meaning hereby assigned to them except where the context otherwise requires.

#### 1. MEASUREMENT OF WORK AND MODE OF PAYMENT

- 1.01 All payments due to the contractor shall be made by 'Account Payee 'Cheque only.
- 1.02 Measurement will be done by the Engineer and quantities and percentages eligible for payment under different groups shall be decided by him. The abstract of quantities and percentages so arrived at based on the terms of payment shall be entered in the Measurement Book and signed by both the parties.
- 1.03 Based on the above quantities, contractor shall prepare the bills in the prescribed proforma and work out the financial value. These will be entered in the Measurement Book and signed by both the parties. Payment shall be made by BHEL after affecting the recoveries due from the contractor.
- 1.04 Measurement shall be restricted to that quantity for which it required to ascertain the financial liability of BHEL under this contract.
- 1.05 Measurement shall be taken joint by persons duly Authorised by BHEL and the Contractor.
- 1.06 The contractor shall bear the expenditure involved. If any in making the measurements and testing of materials to be used/used in the work.
- 1.07 The Contractor shall, without extra cost to BHEL, provide all the assistance with appliances and other things necessary for measurement.
- 1.08 If, at any time due to any reason whatsoever, it becomes necessary to premature the work done, in full or in part, the expenses towards such remeasurement shall be borne by the Contractor.
- 1.09 Passing of bills covered by such measurements does not amount to acceptance by BHEL of the completion of the work measured. Any left out work has to be completed by the Contractor, as directed.
- 1.10 Final measurement bill shall be prepared in the Performa prescribed for the purpose, based on the certificate issued by the Engineer that the entire work as stipulated in the tender specification of BHEL. The Contractor shall give unqualified 'No Claim' and 'No Demand' certificates. All the tools and tackles loaned to him should be returned in condition satisfactory to BHEL. The abstract of final quantities and financial values shall also be entered in the Measurement Book and signed by both the parties. The final bill shall be paid within a reasonable time after completion of the work. After the payment of final bill, only the guarantee obligation percentage

value shall remain unpaid which shall be released in accordance with payment terms.

## 2.0 RIGHTS OF BHEL

BHEL reserves to itself the following rights in respect of this contract without entitling the contractor or any compensation.

2.1 To get the work done through another agency at the risk and cost of the contractor, in the event of poor progress or the contractor's inability to progress the work for completion as stipulated in the contract poor quality of work, persistent disregard of instruction of BHEL, assignment, transfer, subletting of the contracted work without written permission of BHEL, non-fulfillment of any contractual obligations etc, and to claim/ recover compensation for such losses from the contractor including BHEL's supervision charges and overheads from Security Deposit/other dues.

2.2 To withdraw any portion of work and/ or to restrict/alter quantum of work as indicated in the contract during the progress of work and get it done through another agency and/ or by the departmental labour to suit BHEL's commitments to its customer or in case BHEL decides to advance the completion due to other emergent reasons/ BHEL's obligation to its customer.

2.3 To terminate the contract after due notice and forfeit the Security Deposit and recover the loss sustained in getting the balance work done through other agencies in addition to liquidated damages in the event of:

- a. Contractor's continued poor progress.
- b. Withdrawal from or abandonment of the work before completion of the work.
- c. Corrupt act of the contractor.
- d. Insolvency of the contractor.
- e. Persistent disregard of the instructions of BHEL.
- f. Assignment, transfer, subletting of the contract work without BHEL's written permission.
- g. Non- fulfillment of any contractual obligations.

2.4 To recover any moneys due from the Contractor from out of any moneys due to the Contractor under this or any other Contract or from the Security Deposit.

2.5 To claim compensation for losses sustained including BHEL's supervision charges and overheads. in case of termination of contract and to levy liquidated damages **for delay in completion of work, at the rate of ½% of the contract value per week of delay or part thereof subject to a ceiling of 10% of the contract value.**

2.6 To determine the Contract or to restrict the quantum of work and pay for the portion of work done in case BHEL's contract with its customer is terminated for any reason.

2.7 To affect recoveries from any amounts due to the contractor under or any other contract or in any other form the moneys, which BHEL is forced to pay to anybody due to contractor's failure to fulfill any of his obligations.

2.8 To restrict or increase the quantity and nature of work to suit site requirements, since the tender specification is based on preliminary documents and quantities furnished their in are indicative and approximate and the rates quoted shall not be subject to revision.

2.9 To deploy BHEL's skilled and semiskilled workmen in case of emergency/poor progress/ deficiency in skill on the part of the employees of the contractor and to recover the expenditure on account of the same from the moneys due to the contractor.

3.0 While every endeavour will be made by BHEL to this end, BHEL can not guarantee uninterrupted work due to conditions beyond its control. The contractor will not be entitled to compensation/extra payment on this account.

3.1 In the event of any dispute of technical nature, the decision of BHEL shall be final and binding on the Contractor.

#### **4.0 RESPONSIBILITIES OF CONTRACTOR IN RESPECT OF LOCAL LAWS, EMPLOYMENT OF WORKERS, ETC.**

4.1 The following are the responsibilities of the Contractor in respect of observance of local laws, employment of personnel, payment of taxes etc.

4.2 As far as possible, unskilled workers shall be engaged from the local areas in which the work is being executed.

4.3 The contractor at all times during the continuance of this contract, shall in all his dealings with the local labour for the time being employed on or in connection with the work, have due regard to all local festivals, religious and other customer.

4.4 The Contractor shall comply with all state and central Laws, Statutory Rules, Regulations, etc., such as : The payment of wages Act, The Minimum Wages Act, The workmen's Compensation Act, The employer's Liability Provident fund Act, Employees, State Insurance Scheme.

4.5 The Contract Labour (Regulations and Abolition Act, 1970) and other Acts, Rules and Regulations for labour as may be enacted by the Government during the tenure of the contract and having force or jurisdiction at site. The contractor shall give to the local Governing Body, Police and other concerned Authorities all such notice as may be required under law.

4.6 The Contractor shall be responsible for proper accommodation including adequate medical facilities for the personnel employed by him.

4.7 The Contractor shall be responsible for the proper behaviour and observance of all regulations by the staff employed by him.

4.8 The Contractor shall ensure that no damage is caused to any person / property of other parties working at site. If any such damage is caused, it shall be the responsibility of the contractor to make good the losses and compensate them.

4.9 The contractor shall fully indemnify and keep indemnified BHEL / its customer against all claims of whatever nature arising during the course of execution of this contract.

4.10 In case the contractor is required to undertake any work outside the scope of this contract, the amount payable shall be as may be mutually agreed upon.

4.11 Any delay in completion of works or non - achievement of periodical targets, due to reasons attributable to the contractor, will have to be compensated by the contractor either by increased manpower and resource or by working extra hours or more than one shift at no extra cost to BHEL.

4.12 The contractor shall execute the work under the conditions usual to such power plant construction and in conjunction with numerous other operations at site. The contractor and his personnel shall cooperate and coordinate with other agencies at project site and proceed in a manner that shall help in the progress of work at site as a whole.

4.13 The contractor will be directly responsible for payment of wages to his workmen. A pay - roll sheet giving details of all payments made to the workmen duly signed by the contractor's representative should be furnished to BHEL, if called for.

4.14 In case of any class of work for which there is no specification laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of the Engineer.

4.15 No levy, payment or charges made or imposed shall be impeached by reason of any clerical error or by reason of any mistake in the amount levied, demanded or charged.

4.16 No idle labour charges will be admissible in the event of any stoppage of work resulting in the contractor's workmen being rendered idle due to any reason at any time.

4.17 The contractor shall take all reasonable care to protect the materials and the work till such time the plant / equipment has been taken over by BHEL / its customer.

4.18 Contractor shall not stop work or abandon the site for whatsoever reason or dispute, excepting for force majeure conditions. All problems / disputes shall be separately discussed and settled without effecting the progress of work. Stoppage or abandonment of work, other than under force majeure conditions, shall be treated as breach of work of contract and dealt with accordingly.

4.19 The contractor shall keep the area of work clean and shall remove the debris etc. While executing day - to - day work. Upon completion of work, the contractor shall remove from the vicinity of work, all scrap, packing materials, rubbish, unused and other materials and deposit them in places specified by the Engineer. The

contractor will also demolish all the hutments, sheds, offices, etc., constructed and used by him and shall clean the debris. In the event of his failure to do so, the same will be arranged to be done by the Engineer and the expenses recovered from the contractor.

4.20 The contractor shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work and timely execution shall be the essence of this contract. The contractor shall be responsible to ensure that the quality, assembly and workmanship conform to the dimensions and clearance given in the drawings and / or as per the instructions of the Engineer.

## **5.0 CONSEQUENCES OF CANCELLATION**

5.1 Whenever BHEL exercise its authority to terminate the contract /withdraw a portion of work, the work may be got completed by any other means at the contractor's risk and cost provided that in the event of the cost of completion (as certified by Engineer which shall be final and binding on the contractor) being less than the contract value, the advantage shall accrue to BHEL. If the cost of completion exceeds the moneys due to the contractor under the contract, the contractor shall either pay the excess amount demanded by BHEL or the same shall be recovered from the contractor. This will be in addition to the forfeiture of Security Deposit and recovery of liquidated damages as per relevant clauses.

5.2 In case BHEL completes the work under the provisions of this clause, the cost of such completion is to be taken into account for determining the excess cost to be charged to the contractor shall consist of cost of materials purchased and /or labour provided by BHEL with an addition of such percentage to cover supervision and establishment charges as may be decided by BHEL.

## **6.0 INSURANCE**

6.1 It shall be the sole responsibility of the contractor to insure his workmen against risks of accidents and injury while at work as required by the relevant Rules and to pay compensation, if any, to them as per workmen's compensation Act. The work will be shall also insure his staff against accidents. The work will be carried out in a protected area and all the Rules and Regulations of BHEL / its client in the Project Area which are in force from time to time will followed by the contractor.

6.2 If due negligence and / or non - observance of safety and other precautions, any accident / injury occurs to any other persons / public, the contractor shall pay necessary compensation and other expenses, if so decided by the appropriate authority.

6.3 The contractor will take necessary precautions and due care to protect the material, while in his custody from any damage / loss till the same is taken over by BHEL or customer. For lodging / processing of insurance claim the contractor will submit necessary documents. BHEL will reserve the right to recover the loss from the contractor, in case the damage / loss is due to carelessness / negligence on the part of the contractor. In case of any theft of material under contractor's custody, matter

shall be reported to police investigation report shall be submitted to BHEL for taking up with insurance.

## 7.0 GUARANTEE

Even though the work will be carried out under the supervision of the Engineer, the contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of six months from the date of completion of work as certified by the Engineer, and shall rectify, free of cost to BHEL, all defects arising out of faulty material and workmanship during the guarantee period starting from the date of completion of rectification. In the event of the contractor failing to repair the defective works within the time specified by the Engineer, BHEL may proceed to undertake the repairs of such defective works at the contractor's risk and cost, without prejudice to any other rights and recover the same from out of any moneys payable to the contractor or by other legal means.

## 8.0 ARBITRATION

8.1 All disputes between the parties to the contract arising out of or in relation to the contract, other those for which the decision of the Engineer or any other person is by the contract expressed to be final conclusive, shall after written notice by either party to the contract to the other party, be referred to sole arbitration of the General Manager or his nominee. The arbitration shall be conducted in accordance with the provision of the Arbitration and Reconciliation Act, 1996. The parties to the contract understand and agree that it will be no objection that the General Manager or the person nominated as Arbitrator had earlier in his official capacity to deal directly or indirectly with the matters to which the contract relates or that in the course of his official duties had expressed views on all or any of the matters in dispute or difference. The award of the Arbitrator shall be final and binding on the parties to this contract.

8.2 In the event of the Arbitrator dying neglecting or refusing to act or resigning or being unable to act for any reason or his award being set aside by the Court for any reason, it shall be lawful for the General Manager or his successor, as the case may be, either to act himself as the Arbitrator or to appoint another Arbitrator in place of the outgoing Arbitrator in the manner aforesaid.

The Arbitrator may, from time to time, with the consent of both the parties to the contract, enlarge the time for making the award. Work under the contract shall be continued during the arbitration proceedings. The venue of the arbitration shall be the place from which the contract is issued or such other place as the Arbitrator at his discretion may determine.

## DEVIATION STATEMENT

(Pl. Strike off the clause which is not applicable and ticks the other)

1. THIS IS TO DECLARE THAT WE DO NOT HAVE ANY DEVIATIONS IN THE STIPULATIONS OF YOUR TENDER AND ACCORDINGLY ACCEPT ALL THE STIPULATIONS WITHOUT ANY RESERVATIONS WHATSOEVER.

OR

2. WE HAVE NOTICED THE FOLLWING CONTRADICTION/DISCREPANCIES IN/BETWEEN THE TENDER STIPULATIONS

SI No	Section	Clause Para No.	Deviation	Reason/Justification

**(Signature of the bidder)  
With Company Seal**

Name

Company's name

Address

Date

<b>B.H.E.L. - HRD DIVISION</b>					
<b>RENOVATION &amp; EXTENSION OF KITCHEN &amp; DINING AREAS</b>					
<b>BOQ FOR CIVIL &amp; INTERIOR WORK</b>					
S.n.	Description	Qty	Unit	Rate	Amount
<b>Part I -</b>	<b>DISMANTLING WORK</b>				
1.1	Demolishing of existing flooring/tile in dados, including base concrete and disposal of material to dumping ground complete as per instructions. (optional)	70	Sqm		
1.2	Dismantling Temporary / permanent partitions, doors, windows and other enclosed areas ( aluminium, wood & steel ) including chowkhats, architrave, holdfasts etc. complete and stacking as instructed by engineer in charge within site premises.	1	LS		
1.3	Demolishing of plastered brick work including stacking of serviceable material and disposal of unserviceable material within 50 metres lead: In cement mortar		cum		
1.4	Removal of plaster and disposal of unserviceable material to municipal yard (optional)	0	Sqm		
	<b>Sub Total</b>				
<b>Part II</b>	<b>MASONRY WORKS</b>				
	(Quoted Rates are for all heights and depths)				
2.1	Brick work of thickness 230 mm and above using selected quality burnt clay FPS bricks of class designation 75 (Crushing strength not less than 75 kg/sqcm) in super structure laid in cement mortar 1:6 (1 cement :6 coarse sand) mix, joints finished, flush raked to 6mm depth including jointing with concrete where required and as per specification and drawing or as directed by Project Manager.	0	Cum.		

<b>2.2</b>	Half brick masonry using selected quality burnt clay FPS brick of class designation 75 [Crushing strength not less than 75 kg/sqcm] in super structure laid in cement mortar 1:4 (1 cement : 4 coarse sand) mix, joints finished, flush raked to 6mm depth as directed by Project Manager including providing & placing 2 nos. 6mm dia MS bars reinforcement at every fourth course, curing , anchoring with concrete with one no. 2mm thick 40mm wide G.I. strip 300mm long @ 300mm centre to centre where required and as per specification and drawing or as directed by Project Manager.	0	Sqm.		
	(Rate only - will be as per actual site requirement)				
	<b>Sub Total</b>				
<b>Part III</b>	<b>WOOD WORKS</b>				
	(Quoted Rates are for full heights and depths)				
<b>3.1</b>	Providing and fixing 35 mm ( overall) thick both side commercial type flush door shutters (decorative type) core of block board construction and frame of 1st class hardwood phenol bonded, 10mm thick wood lipping on all edges of shutters including 4 nos. aluminium butt hinges 125 mm with matching screws ,(or spiring hinge where specified) , with frames of steem beech wood sawn & fixed in position with hold fast / dash fastners including applying coat of wood preservative, polishing / synthetic enamel paint etc. of section specified in dwg, polishing where required etc. all complete as per design and drawing. ( The thickness of shutter in all the cases should not be less than 35 mm either veneered or laminated finish) (Cost of providing door seal to be included in the quoted rate).				
<b>a)</b>	35 m.m. thick with 1.0 m.m. laminate of approved colour and shade on both faces of shutter.	7.5	Sqm.		
<b>3.2</b>	Extra for providing vision panel not exceeding 0.1 sqm in all types of flush door including cost of glass panes				
<b>a)</b>	Rectangular or square	1.5	Sqm.		
<b>3.3</b>	Providing and fixing 100mm mortice latch and lock with 6 levers and a pair of brushed steel finish handle with necessary screws etc. complete (best make of approved quality).	3	Each		
<b>3.4</b>	Providing and fixing brushed steel hardwares				
<b>a.</b>	Providing and fixing tower bolt (barrel type) with necessary screws etc. complete.				
*	150 x 10mm	6	Each		
<b>b.</b>	Providing and fixing handles with necessary screws etc. complete set.				
*	125 mm	3	Each		
<b>c.</b>	Door stopper	3	Each		

	<b>Sub Total</b>				
<b>Part IV</b>	<b>FLOOR FINISHING</b>				
<b>4.1</b>	Cement concrete flooring pedestal 75mm thick as top layer over dry brick aggregate, well compacted filling, encased in brick work, 230mm thick of cc 1:2:4 (1Cement:2 coarse sand : 4 graded stone aggregate)finished with a floating coat of neat cement including cement slurry, rounding of edges and strips etc. complete. I/c making drains to slope as specified by the relevant drawing				
<b>a</b>	350mm thick fill with 20mm nominal size aggregate.at required slopes	45	sqm		
<b>4.2</b>	Providing and laying 18 mm thick cement plaster skirting (upto 30 cm height) with cement mortar 1:3 finished with a floating coat of neat cement including rounding off junctions with floor complete.	10	sqm		
<b>4.3</b>	<b>Tiles / Stone</b>				
<b>a</b>	Providing and laying colour Kota stone slab flooring, laid to required slope on a bed of 25 mm average thick cement mortar 1:4 (with coarse sand) to make up a total thickness of 50 mm, including laying slabs in cement slurry, pigmented to match the shade of slabs, 100mm high skirting (in same 19mm kota stone), grinding, rubbing and polishing complete : 19 mm thick: Grey-Green Kota Stone of slab size no les than 600x300mm	70	sq.m		
<b>4.4</b>	Providing / Fixing Ceramic tile ( basic rate Rs. 30per sqft inclusive of border where specified) for dado / wall area as per design drawings under the supervision of the project in charge	140	Sqm.		
	<b>Total</b>				
<b>Part V -</b>	<b>FINISHING WORKS</b>				
	(Quoted Rate shall be for all height & Depth and to include providing and fixing chicken wire mesh in junction RCC and brick walls for internal and external plaster works).				

5.1	12 to 15mm thick plaster to masonry & RCC walls columns etc.(l/c dumb waiter area) in cement mortar 1:4 (1 cement : 4 fine and coarse sand in equal proportion) applied, finished smooth and cured including corner / edge beads of approved material etc. complete. (RATE ONLY)	0	Sqm.		
5.2	6 mm thick plaster of paris punning on plastered surface (optional)	0	Sqm		.
5.3	Distempering (two or more coats) with oil bound distemper of approved brand to give an even shade on walls including priming coat of primer and preparing surfaces with filling materials on new plastered work along with sand papering wherever required.)FOR EXTERNAL WALL)	0	Sqm.		.
5.4	Painting with matt finish synthetic enamel paint of approved brand and manufacture on walls, including scrapping, cleaning making good the surface with putty.				.
a	Three or more coats including a coat of primer.	185	Sqm.		.
	<b>Total</b>				.
	<b>Sub Total</b>				

RENOVATION & EXTENSION OF KITCHEN & DINING AREAS						
<b>ELECTRICAL WORKS DINING &amp; KITCHEN AREA</b>						
S.NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT(Rs)	
<b>A</b>	<b>ELECTRICALS</b>					
I	wiring for the following light / power / utility points.					
1	One point controlled by one switch KITCHEN	Each	13			
2	Two point controlled by one switch KITCHEN	Each	10			
5	Wiring for 6 AMPS light plug point KITCHEN	Each	5			
6	wiring for 16 Amp power plug point KITCHEN	Each	5			
6	wiring for Industrial socket with 16 AMP MCB control in a steel box stove enamel painted KITCHEN	Each	3			
7	Wiring for circuit wiring from MCB D.B. to first light point. KITCHEN	Each	2			
	<b>Sub Total</b>					
<b>b</b>	<b>FITTINGS AND FIXTURES</b>					
1	Fixing only the following fixture/fitting complete with bulbs,t-lights ,chokes etc.					
1.1.	Strip fluorescent light, with single tube 4' long box suspended from ceiling (exposed) of GEWISS, SURYA OR EQUIVALENT MAKE	Each	15			
1.2	P/ fixing fan (48" dia) in ceiling	Each	5			
	<b>Sub Total</b>					
	<b>GRAND TOTAL</b>					

**RENOVATION & EXTENSION OF KITCHEN & DINING AREAS**

<b>LPG PIPING SYSTEM</b>						
Sn	ITEM DESCRIPTION	UNI T	QT Y	RATE (Rs.)	AMOUNT (Rs.)	
1	Providing black steel pipes to IS 1239 (heavy) seamless or ERW nomalized including all fittings e.g. coupling, bends, elbows, teex, etc. Weled joints,painting with one coat of ready mixed red oxide primer and two or more coats of synthetic enamel paint to give an even shade and testing complete					
	Size : 25 mm NB	Mtr	5			
	: 15 mm NB	Mtr	10			
2	Providing standard mild steel flanges ASA - 150 raised face welded to pipes complete with 1.5 mm thick compressed asbestos gaskets, nuts, bolts and washers as per ANSIE 1.5 RF class 300 ratings					
	Size : 25 mm NB	Set	2			
	: 15 mm NB	Set	10			
3	Providing Carbon steel/bronzes ball valve forged or cast steel body as per per ANSIE 16.5 rating for LPG services. The valve should be anti static fire safe.					
	Size : 25 mm dia	Nos	2			
	15 mm dia	Nos	10			
4	Providing high pressure regulator, multi million BTU, 1" BSP inlet/outlet inlet pressure C-150 psig and delivery pressure 0-40 psig of make Venez/United	Nos	1			
5	Providing manifold as per design complete with shutoff valve required on each arm. Suitable for connecting 5 nos. LP Gas Cylinders in 2 x 5 gas bank	set	1			
6	Providing 2nd stage high/low pressure regulators 5/0.5 psi	Nos	5			
7	Providing non-return valve on manifold branch	nos	10			

	for each cylinder					
8	Providing pressure gauge with isolation of 4" dia	Each	2			
9	Providing compact valve adaptors for pin type cylinders	Each	10			
10	Flexible cylinder pigtails FECV x FECV 660mm long	Each	10			
11	Providing MS adaptor MECV/Bull nose/FECV nuts/union joints.	Lot	1			
12	Providing brass adaptors 1/2" x MECV 1" x MECV	Lot	1			
13	Flexible burner poptail 36" long with 3/8" BSP nuts etc.	Each	8			
14	Making "No smoking" sign board and "Danger Zone" sign board	Lot	1			
15	Painting of exposed pipes with two or more coats of synthetic enamel paint of approved shade as per pipe colour code including painting of legends in English and Devnagari with direction arrows.	Lot	1			
16	Cylinder storage cabinet fabricated out of rigid mild steel angle frame work and paneled with 18/20 swg. Mild steel sheet suitable for connecting 10 nos. LP gas Cylinders, on cantilever structure as per design and consultants approval painted with two coats of primer and two coats of light grey synthetic enamel paint.	LOT	1			
17	Installation, Welding, Pressure testing of complete system and issue of pressure test certificate as per IS 6044	LS	1			
	<b>GRAND TOTAL</b>					

<b>RENOVATION &amp; EXTENSION OF KITCHEN &amp; DINING AREAS</b>					
<b>BOQ FOR WATER SUPPLY AND SANITARY WORK</b>					
<b>S. No</b>	<b>Description</b>	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Amount</b>
<b>1.0</b>	<b>SUB HEAD I : SANITARY FIXTURES</b>				
1.1	Providing and fixing 15mm dia C.P. brass single hole hot and cold mixer with swinging spout, wall mounted complete including cutting and making good the walls wherever required.				
a)	Long body	6	each		
1.2	Providing and fixing 15mm dia C.P. brass angle valve with C.P. copper connecting pipe 375m long with nuts and washers, C.P. brass wall flange complete including cutting and making good the wall wherever required.	6	each		
1.3	Providing and fixing C.P. brass concealed stop cock with wall flange.	6	each		
1.4	Providing and fixing C.P soap dish of approved size, design, and manufacture including cutting the wall & making good the same.	1	each		
1.5	Providing and fixing first quality white vitreous china wash basin oval shape, counter top mounted of reputed make 550x400mm(HINDWARE or equivalent) including suppling and fixing of specially fabricated M.S. brackets, painted with two or three coats of enamel paint of approved shade over a coat of primer, 15mm dia C.P. brass single pillar tap, C.P. brass chain and rubber plug, 32mm C.P. brass waste and C.P. brass cast bottle trap and pipe to wall with C.P. brass flange and rubber adopter for waste connection complete including cutting & making good the wall wherever required.				
a	Wash basin	1	each		
1.6	Providing and fixing 600x20mm size C.P. brass towel rail with C.P. brackets fixed to wooden cleats with C.P. brass screws etc. including cutting and making good the wall wherever required.	1	each		
<b>TOTAL OF SUB HEAD I</b>					
<b>2.0</b>	<b>SUB HEAD II : SOIL, WASTE, RAIN WATER AND VENT PIPES</b>				

2.1	Providing and fixing G.I. pipe to IS: 1239 (medium class) complete with G.I. fittings and clamps and hinges including cutting and making good the walls and ceiling for waste pipes from wash basins, sinks, overflow, kitchen equipment waste connections and condensate drainage, as directed by the Engineer-in-charge.				
a)	50mm dia	3	Metre		
2.2	Providing and fixing Sand Cast 'P' or 'S' trap of self cleaning design with or without vent with provision for connecting G.I inlet fittings complete including cost of cutting and making good the walls and floors wherever required.	6	Each		
2.3	Providing and fixing G.I reducer/hopper/elbow (Floor Drain) of 100 x 50mm, complete as per instructions of the Engineer in charge.(grating and G.I pipe to be paid separately)	2	Each		
2.4	Providing and fixing 125mm chromium plated grating with ring and S.S anti cockroach basket and two S.S screws of approved design with grating screwed down to the ring with s/s screws and embedding and setting ring into the floor with cement mortar .	2	Each		
<b>TOTAL OF SUB HEAD II</b>					
<b>3.0</b>	<b>SUB HEAD III : WATER SUPPLY</b>				
<b>0</b>					
3.1	Providing and fixing G.I. pipes (I.S. 1239 medium class) complete with G.I. fittings, i.e tees, elbows, sockets, clamps etc. (for internal works, exposed and in chase) for HOTwater supply including cutting and chasing in walls and floors and repairing these in good conditions in cement mortar 1:2, and or as per instructions of Engineer-in-charge.Including painting and wrapping with polythene tape and bitumanistic paint as per requirement(of Jindal Hissar or Surya Roshni or equivalent )				
a)	15mm dia	50	Metre		
b)	20mm dia	15	Metre		
c)	25mm dia	10	Metre		
d)	32mm dia	5	Metre		

3.2	Providing and fixing G.I. pipes (I.S. 1239 medium class) complete with G.I. fittings, i.e tees, elbows, sockets, clamps etc. (for internal works, exposed and in chase) for HOTwater supply including cutting and chasing in walls and floors and repairing these in good conditions in cement mortar 1:2, and or as per instructions of Engineer-in-charge.Including painting and wrapping with polythene tape and bitumanistic paint as per requirement(of Jindal Hissar or Surya Roshni or equivalent )				
a)	15mm dia	45	Metre		
b)	20mm dia	15	Metre		
c)	25mm dia	10	Metre		
d)	32mm dia	5	Metre		
3.3	Providing and fixing thermal insulation over hot water pipes (internal) with 9mm thick 'kaiflex' thermal insulation tubing, a elastomeric flexible material having hermetic blister closed cell structure of expanded synthetic rubber having density of 60-90 Kg/m <sup>3</sup> over pipes of following sizes including all required accessories complete as per Manufactuer's specifications and finishing it with 6mm thick rough plaster of 1:3 Mix ( 1 Cement : 3 Coarse Sand)				
a)	For 15mm dia pipe or equivalent dia	45	Metre		
b)	For 25mm dia pipe or equivalent dia	10	Metre		
3.4	Providing and fixing forged brass lever operated ball valve of full flow with forged brass ball (Machined to mirror smooth finish with hard chrome plated) and spindle with setting and gland of superior quality having minimum working pressure of 10 kg/cm <sup>2</sup> etc. complete in all respect.				
b)	20mm dia	1	Each		
d)	32mm dia	1	Each		
<b>TOTAL OF SUB HEAD III</b>					

B.H.E.L. - HRD DIVISION					
RENOVATION & EXTENSION OF KITCHEN & DINING AREAS					
BOQ FOR DRAIN THROUGH GRATING					
S.n.	Description	Quantity	Unit	Rate	Amount
1	Providing & Fixing Drain through grating of Stainless Steel, with MS angle frame (chrome plated), of width 300mm wide, as per detailed design drawing	11	R.M.		
				TOTAL	

**RENOVATION & EXTENSION OF KITCHEN & DINING AREAS****SUBJECT: KITCHEN EQUIPMENTS(EXHAUST HOOD)****BILL OF QUANTITIES**

<b>S.N</b>	<b>Eqpmt no.</b>	<b>Item Description</b>	<b>SIZE (IN MM)</b>	<b>Qty/No</b>	<b>Rate (Rs.)</b>	<b>Amount (Rs.)</b>
1	34	Providing and installation of Exhaust Hood made of SS sheet with good quality, S.S filters complete with required ducting as per manufacturers specification.	2400x950	2		
2	35	Providing and installation of Exhaust Hood made of SS sheet with good quality, S.S filters complete with required ducting as per manufacturers specification.	1800x850	2		
3	36	Providing and installation of Exhaust Hood made of SS sheet with good quality, S.S filters complete with required ducting as per manufacturers specification.	1800x850	1		
4		Providing and installation of hangars and cross braced framing system to prevent swaying in the hoods	LS	1		
5		Providing and installation of Exhaust ducting made of G.I. / Al. sheet of standard make and quality, complete with connections and jointing from each exhaust vent to the external face / terrace of the building (as per architects / consultants approval) as per approved design.	20M	1		
6		Providing & Installation of Axial centrifugal blower or reputed make, of capacity 15,800 CMH with 5.0 HP motor - duly positioned, installed and fixed / grouted where required, with necessary padding and checks for vibration dampening as per approved drawings		1		

7		Providing & Installation of Air curtains of approved make and size complete as per manufacturers specifications	1200x200 x300	2		
8		P/F Exhaust fan 300 mm dia. With self shutting louvres, Nutek or equivalent make.	300x300	1		
		<b>GRAND TOTAL (In Indian Rs.)</b>				
9		Providing & Installation of Fresh Air system, to cater to 2500 CFM, with online silent blower of adequate capacity of reputed make, complete with all ducting, clamping, vibration dampeners, and fixing / grouting, SS vents with adequate jalis and filter protection at openings, with relevant ducting as per hood requirement, complete as per vendor shop drawings to be submitted to indicate final vent path, to be approved by respective consultant.	LS	1		
		<b>GRAND TOTAL (In Indian Rs.)</b>				





**NOTES:-**

1. THE NUMBER OF NUTS OF EACH ASSEMBLY SHALL BE AS PER THE DRAWING. THE NUTS SHALL BE PROVIDED AT THE POINTS OF SUPPORT AND AT THE POINTS OF CHANGE OF DIRECTION. THE NUTS SHALL BE PROVIDED AT THE POINTS OF CHANGE OF DIRECTION. THE NUTS SHALL BE PROVIDED AT THE POINTS OF CHANGE OF DIRECTION.

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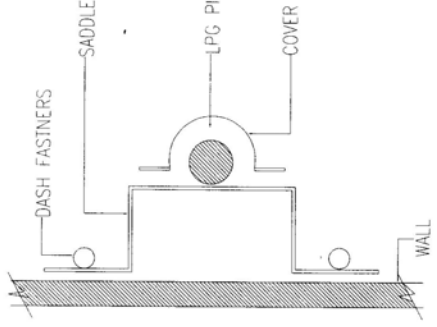
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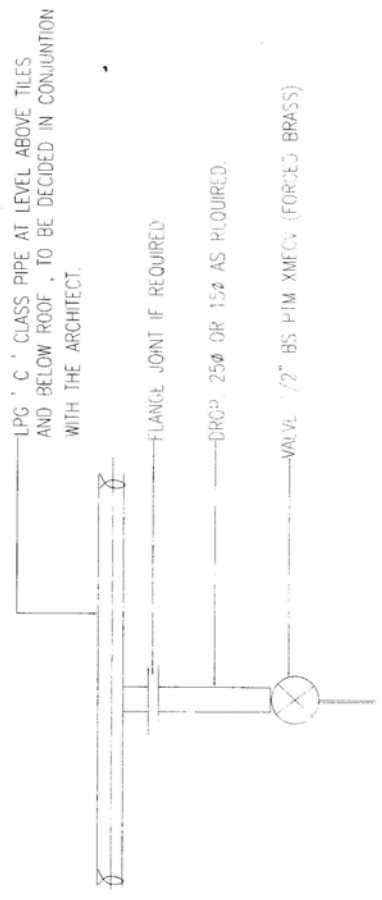
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① LPG PIPE CLAMPING DETAILS



② LPG PIPELINE DROP DETAILS



**MCH ASSOCIATES**  
ENGINEERS ARCHITECTS

BIHARAT HEAVY ELECTRICAL LIMITED - NOIDA

EXTENSION & RENOVATION OF DINING & KITCHEN AREAS

DETAIL ON PIPE CLAMPING & LPG CONNECTION

Scale: 1:10  
Date: 10/10/2023  
K-10

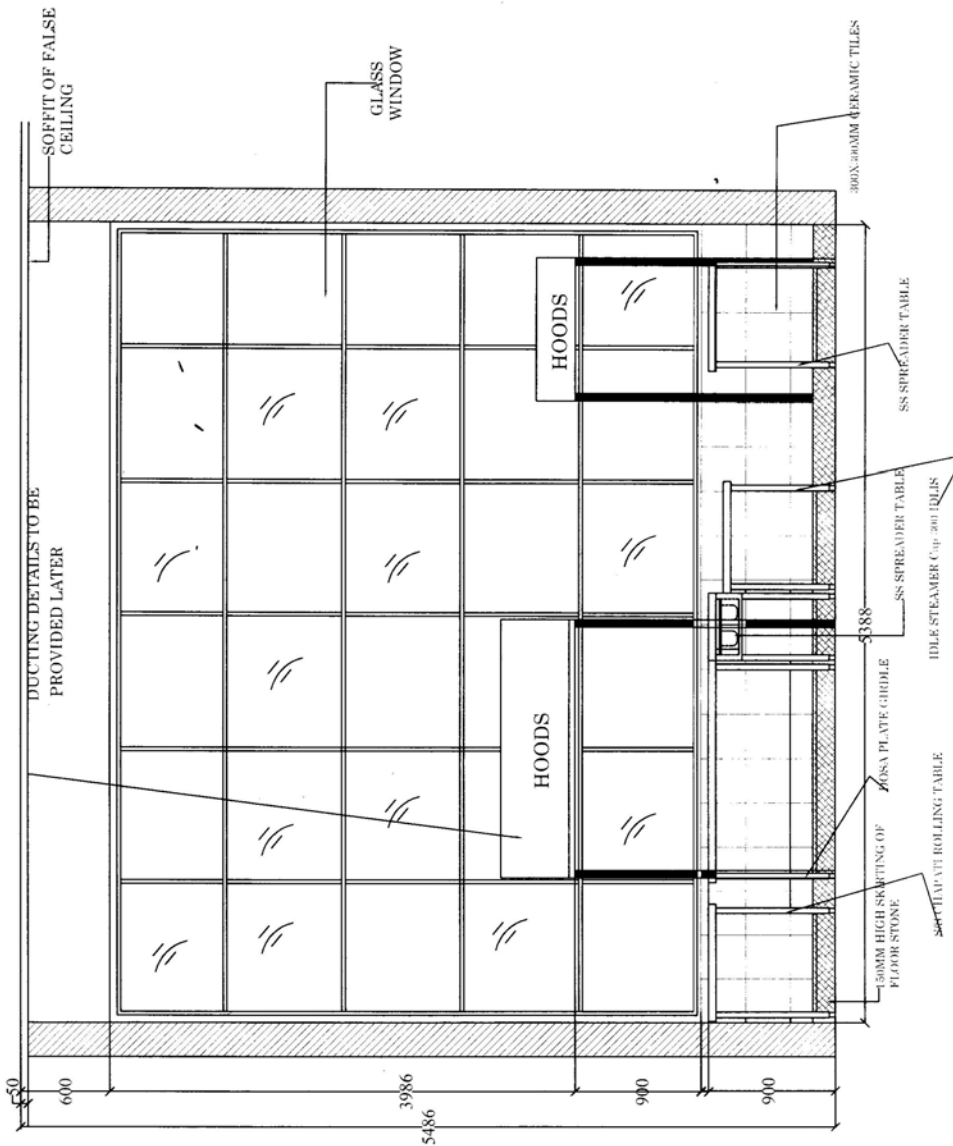






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**WALL ELEVATION (A) WITH EQUIPMENT  
(WITH TILE UPTO HEIGHT 900MM)**

NO.	DATE	REVISION

ARCH ASSOCIATES  
 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

**BHARAT HEAVY ELECTRICAL  
 LIMITED - NOIDA**

**EXTENSION & RENOVATION  
 OF  
 DINING & KITCHEN AREAS**

**WALL ELEVATION**  
 10/10/2020  
 K-19a  
 ARCHANA

**NOTES:-**

1. THE DRAWING IS THE PROPERTY OF ANCH ASSOCIATES AND SHALL BE KEPT IN CONFIDENCE. IT IS TO BE USED ONLY FOR THE PROJECT SPECIFIED HEREIN.
2. PLEASE CO-ORDINATE THIS DRAWING WITH ALL OTHER RELEVANT DRAWINGS OF ALL THE SERVICES.
3. IT IS ADVISED TO READ THE DIMENSIONS ONLY ON THIS DRAWING AND NOT TO TAKE ANY DIMENSIONS FROM THE NOTICE OF THE ARCHITECT.
4. CERTAIN DIMENSIONS MAY VARY AS PER ACTUAL SITE CONDITIONS AND THE ARCHITECT SHALL BE BOUND TO THE NOTICE OF THE ARCHITECT.

DATE	NO.	REVISION TO	BY

DATE	NO.	REVISION TO	BY

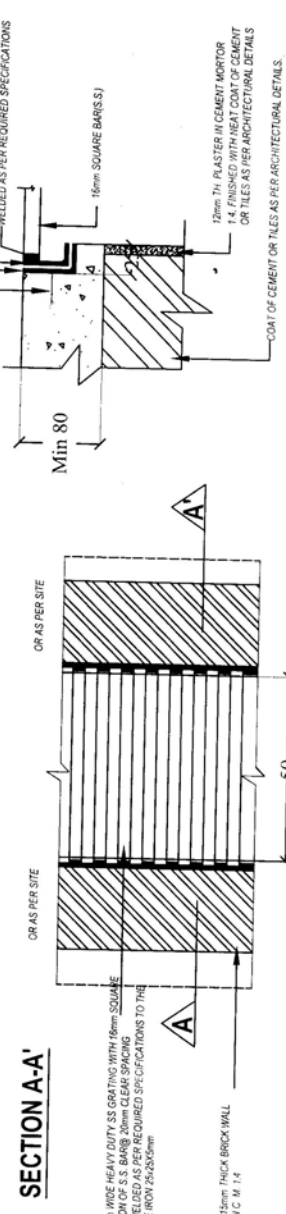
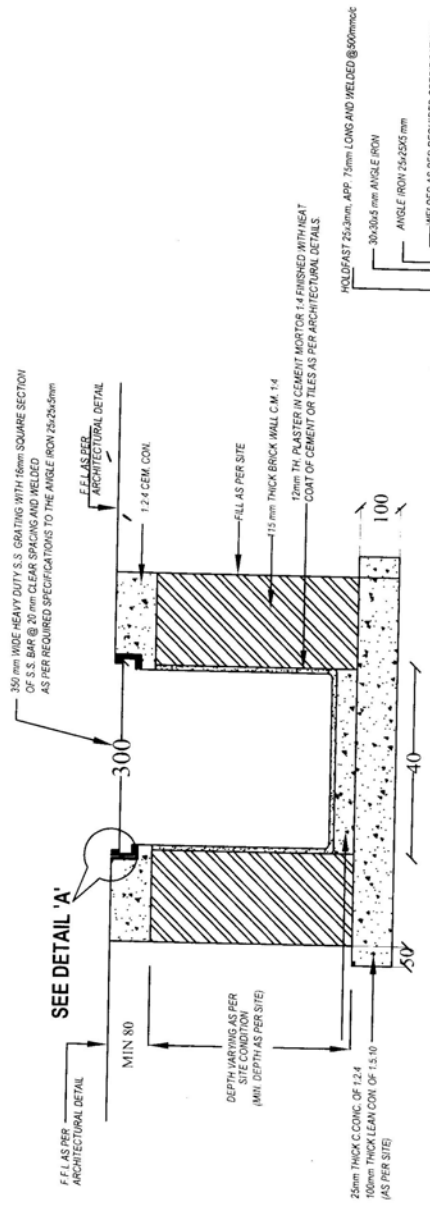
ANCH ASSOCIATES  
 ARCHITECTS  
 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 378, 380, 382, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 462, 464, 466, 468, 470, 472, 474, 476, 478, 480, 482, 484, 486, 488, 490, 492, 494, 496, 498, 500, 502, 504, 506, 508, 510, 512, 514, 516, 518, 520, 522, 524, 526, 528, 530, 532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 564, 566, 568, 570, 572, 574, 576, 578, 580, 582, 584, 586, 588, 590, 592, 594, 596, 598, 600, 602, 604, 606, 608, 610, 612, 614, 616, 618, 620, 622, 624, 626, 628, 630, 632, 634, 636, 638, 640, 642, 644, 646, 648, 650, 652, 654, 656, 658, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 684, 686, 688, 690, 692, 694, 696, 698, 700, 702, 704, 706, 708, 710, 712, 714, 716, 718, 720, 722, 724, 726, 728, 730, 732, 734, 736, 738, 740, 742, 744, 746, 748, 750, 752, 754, 756, 758, 760, 762, 764, 766, 768, 770, 772, 774, 776, 778, 780, 782, 784, 786, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806, 808, 810, 812, 814, 816, 818, 820, 822, 824, 826, 828, 830, 832, 834, 836, 838, 840, 842, 844, 846, 848, 850, 852, 854, 856, 858, 860, 862, 864, 866, 868, 870, 872, 874, 876, 878, 880, 882, 884, 886, 888, 890, 892, 894, 896, 898, 900, 902, 904, 906, 908, 910, 912, 914, 916, 918, 920, 922, 924, 926, 928, 930, 932, 934, 936, 938, 940, 942, 944, 946, 948, 950, 952, 954, 956, 958, 960, 962, 964, 966, 968, 970, 972, 974, 976, 978, 980, 982, 984, 986, 988, 990, 992, 994, 996, 998, 1000

**BHARAT HEAVY ELECTRICAL LIMITED - NOIDA**

**EXTENSION & RENOVATION OF DINING & KITCHEN AREAS**

**TYPICAL DRAIN DETAIL (WITH GRATING)**

DATE: 15/07/2021  
 SCALE: 1:10  
 SHEET NO: K 15  
 PROJECT: BHARAT HEAVY ELECTRICAL LIMITED - NOIDA



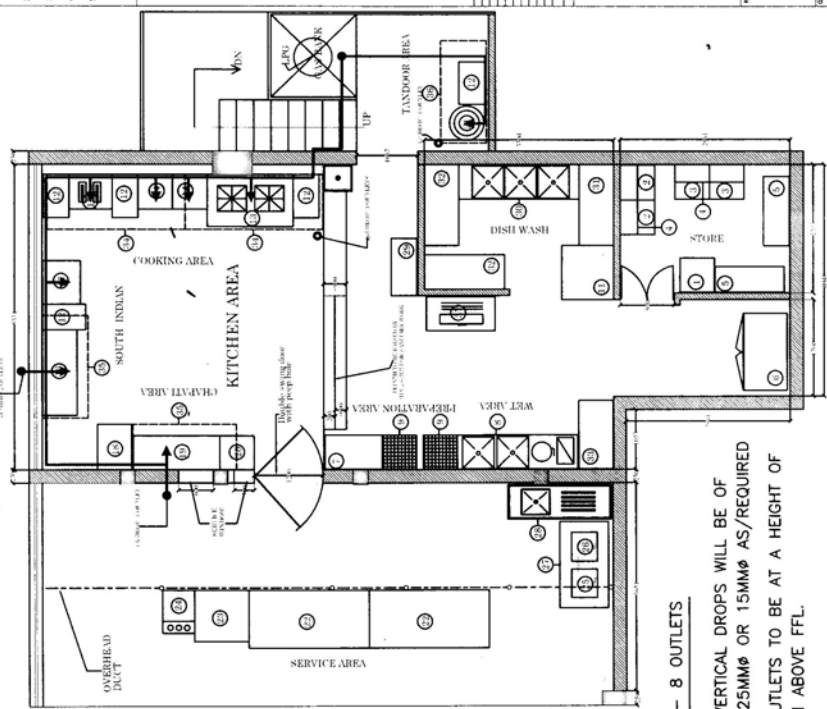
**DETAIL - A**

**PLAN**





NOTES:-  
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.  
 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.  
 3. IT IS ADVISED TO READ THE DIMENSIONS ONLY ON THIS DRAWING AND NOT TO SCALE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.  
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.  
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 8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.  
 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.  
 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITIES.



TOTAL- 8 OUTLETS

- ★ THE VERTICAL DROPS WILL BE OF SIZE 25MMØ OR 15MMØ AS/REQUIRED
- ★ ALL OUTLETS TO BE AT A HEIGHT OF 750MM ABOVE FFL.

NOTE :- LPG ROUTING -AT CEILING LEVEL (APPROX) 2050MM ABOVE FFL/AS PER SITE

- DROPS---4NOS
- 1st DROP - 1 OUTLET
- 2nd DROP - 4 OUTLETS
- 3rd DROP - 2 OUTLETS
- 4th DROP - 1 OUTLET

NO.	ISSUES	DATE	STATUS

PROJECT CHAIRMAN: **ARCHITECTS**  
 ARCHITECTS: **ARCHITECTS**  
 ADDRESS: **ARCHITECTS**  
 CONTACT: **ARCHITECTS**  
 PROJECT NO: **ARCHITECTS**  
 DATE: **ARCHITECTS**  
 SCALE: **ARCHITECTS**  
 SHEET NO: **ARCHITECTS**  
 TOTAL SHEETS: **ARCHITECTS**  
 PROJECT TITLE: **ARCHITECTS**  
 CLIENT: **ARCHITECTS**  
 PROJECT LOCATION: **ARCHITECTS**  
 PROJECT TYPE: **ARCHITECTS**  
 PROJECT STATUS: **ARCHITECTS**  
 PROJECT VALUE: **ARCHITECTS**

**NOTES:-**

1. THIS DRAWING IS THE PROPERTY OF ARCH ASSOCIATES AND IS NOT TO BE COPIED OR USED WITHOUT THEIR PRIOR PERMISSION.
2. PLEASE CO-ORDINATE THE DRAWING WITH ALL OTHER DRAWINGS.
3. IF A CHANGE IS TO BE MADE TO THE DRAWING ONLY ON THIS DRAWING AND NOT SCALE THEN.
4. ANY DIMENSIONS & LOCATIONS WILL BE BROUGHT TO THE NOTICE OF THE ARCHITECT.
5. ANY DIMENSIONS & LOCATIONS WILL BE BROUGHT TO THE NOTICE OF THE ARCHITECT.

DATE	NO.	ISSUED TO	FOR

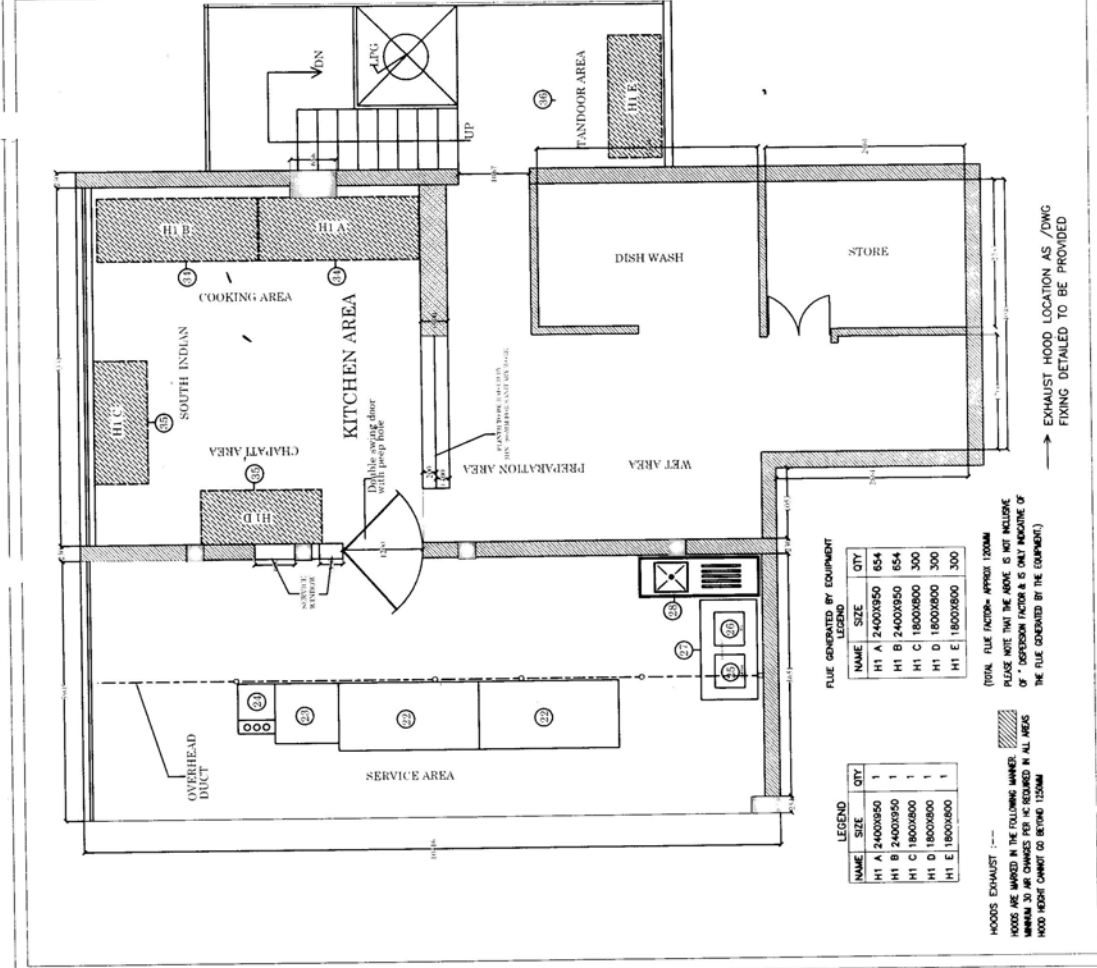
ARCH ASSOCIATES  
 ARCHITECTS & INTERIORS  
 101, MARKET STREET, 2ND FLOOR,  
 CHANDIGARH - 160002

CLIENT  
**BHARAT HEAVY ELECTRICAL LIMITED - NOIDA**

PROJECT  
**EXTENSION & RENOVATION OF DINING & KITCHEN AREAS**

LOCATION OF EXHAUST HOOD

SCALE: 1:100  
 DATE: 10/07/2008  
 DRAWN BY: K-08  
 CHECKED BY: ARCHANA



FLUE GENERATED BY EQUIPMENT

NAME	SIZE	QTY
H1 A	2400X950	654
H1 B	2400X950	654
H1 C	1800X800	300
H1 D	1800X800	300
H1 E	1800X800	300

LEGEND

NAME	SIZE	QTY
H1 A	2400X950	1
H1 B	2400X950	1
H1 C	1800X800	1
H1 D	1800X800	1
H1 E	1800X800	1

HOODS EXHAUST :-  
 HOODS ARE MARKED IN THE FOLLOWING MANNER.  
 MINIMUM 30 MM CHANGES PER HOUR REQUIRED IN ALL AREAS.  
 HOOD HEIGHT CANNOT GO BEYOND 1200MM

TOTAL FLUE FACTOR= APPROX 1200MM  
 PLEASE NOTE THAT THE ABOVE IS NOT INCLUDE OF "DISPOSITION FACTOR" IS ONLY INCLUDING OF THE FLUE GENERATED BY THE EQUIPMENT.

EXHAUST HOOD LOCATION AS /DWC  
 FINISH DETAILED TO BE PROVIDED









