

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES DEPARTMENT)

☎: (0431) 2575380 Fax: (0431) 2521416 CELL:9442631203

e-mail: kpvel@bheltry.co.in



39-300
ISO 9001

PREAMBLE

01. The scope of work includes Fabrication ,laying of pipe lines for compressed air distribution at various locations in the newly constructed factory.
02. Time is the essence of the contract. Being a time bound work, the contractor should make all efforts to complete the work in the stipulated period of Four (4) months.
03. Usually, working hours are limited to day time only. In emergency cases to carryout work during nights, it may be done so with the specific prior permission of BHEL. In such case, it is to be carried out in the presence of BHEL officials or their authorized persons.
04. The tenderers are advised to visit BHEL Factory at Tiruchirappalli and get themselves acquainted with the site conditions before submitting the offer.
05. The following eligibility criteria shall be complied to fulfill the qualification bid:-
 - a) Average annual turnover of similar works in the last three years should be 30% value of respective work.
 - b) During last Five years the contractor should have successfully completed Similar type of work or fabrication of structural /pipe lines and the proof should be enclosed.
 - c) Solvency shall be produced for at least 40% value of respective work.
06. PAN & ITCC for the past three years.
07. Contractor should cover their employees with EPF & ESI.
08. The works executed in the own name of the tenderer only will be considered for eligibility criteria.

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09. Documentary evidences (Xerox copies – attested) for turnover, works experience, P.F. ESI registration etc., all as indicated & required in the tender document, Availability of all types of Erection equipment facility, Qualified staffs availability are to be furnished without which it will not be taken into account.
10. Tender value is only approximate and liable for variation without entitling the tenderer to any compensation, till the total value of contract vary by (+ / -) 10% (ten percentage).
11. Quoted rate shall be firm throughout the contract period of 6 months and extended contract period also and no cost escalation is allowed on any account.
12. The quantity indicated in the Bill of quantity is only tentative. The contractor has to execute any item of work irrespective of the quantity without any reservation till the total value of contract exceeds by 20%.
13. The work shall be carried out as per the scope of work and related drawings.
14. After award of work the contractor has to furnish the security deposit, as per Clause 16 of THE GENERAL INSTRUCTIONS TO TENDERERS. Also it is to be noted that after award of work the contractor has to furnish 50% of security deposit before the commencement of work.
15. The contractor has to carryout the work in production shops without affecting the production by planning such work on holidays/ obtaining proper shut down.
16. The decision of Engineer-in-charge shall be final and binding on the contractor regarding clarification of items in this tender schedule.
17. The contractor shall strictly adhere to various labour laws in force.
18. The contractor shall follow norms of BHEL security system for movement of men & materials within the complex.
19. Since the responsibility for the quality, workmanship and accuracy of any work being carried out under this contract lies with the contractor, the contractor should ensure that no work is done without the presence of contractor's representative at the work spot.
20. The contractor has to submit the organization chart of their set up for the works and any change thereafter in the organization set up shall have the prior approval of BHEL.

21. The contractor should establish his own site office, handling facility, storage facility to stock installation materials, tools, machines etc., for which sufficient place will be allotted on specific request for which the rent will not be collected.
22. The tenderer has to deploy adequate labour of required categories such as, Fitters, Welders, Riggers, and Unskilled labours for field work. The technical persons with experience shall have to produce valid certificate for verification.
23. Separate non-technical persons should be engaged for arranging daily gate passes for labours entry in the gates of Factory complex.
24. The tenderer shall carryout health performance test at his cost for all the workmen engaged in the work through a registered medical practitioner and produce certificate on demand.
25. It shall be the responsibility of the contractor to see the workmen do not utilize the departmental canteen facilities. Contractor has to make his own arrangement to provide refreshment for the workmen.
26. All the works shall be executed as per the standard specifications as provided in Bill of quantities.
27. The contractor should maintain proper accounts for all mechanical/fitting accessories, other materials if any supplied by this organization and supply by the contractor and these should be available at the site of work for verification and check by the officials of this organization at any time.
28. All materials brought by the Contractor for incorporation in the work shall be got inspected and approved by the Engineer-in –charge before they are incorporated in the work.
29. The contractor should use only the materials of brand and quality as approved by BHEL.
30. The contractor should submit the programme for the completion of work and the list of equipments and laborers to be deployed for the work along with tender.

31. All materials and consumables brought by the contractor should have manufacturer's certificate.
32. Contractor's materials and tools & equipments shall have to be brought inside factory with proper invoice/voucher and make necessary entry in the security gate. They should maintain proper record for tools equipments, materials etc. brought inside the factory complex.
33. The contractor should extend fullest co-operation with the third party agencies engaged, if any by BHEL to adhere the Quality Control Procedures ensuring quality.
34. The contractor should extend fullest co-operation to the other contractors who may be doing other works in the same areas to enable them to execute their portions of work without any delay or difficulty.
35. Water, Electricity and compressed air will be provided by this organization at one point at the site of work at free of cost.
36. No advance / mobilization advance will be given.
37. Completion time and LD/Penalty clause are applicable as per General conditions of contract and enclosed annexure- I along with the general instructions to tenderers.
38. All the terms and conditions in the documents are binding on the tenderers and BHEL reserves its right to accept/ reject any or all the tenders and to award the work in full or parts to more than one agency without assigning any reasons.

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BHE: M&S:MECH.CONT. PLNG: 01

Date:01.04.2009

Sub: Fabrication and Laying of pipe lines for Compressed air distribution at various locations in the newly constructed factory

Ref: Enquiry No:9240900053

Dated 13.04.2009.

*** **

Tender of the following work should be submitted in a sealed cover consisting of three inner sealed covers such as 1) EMD cover, ii) Qualification and technical bid cover & iii) Price bid cover, all super scribing the name of work, enquiry number etc.

- 1) EMD cover shall contain requisite EMD in the form of DD. Tenderers who had already remitted one time EMD should furnish the details of cash receipt No. date, on the top of EMD cover. Tender without EMD / one time EMD reference will be summarily rejected and the qualification bid & price bid shall not be considered.
- 2) Qualification bid cover shall contain duly filled in qualification bid document signed by the tenderer in all the pages with documentary evidences for pre-qualification such as experience, value of work executed in the similar nature of work etc. Any bid without proper documentary evidence for pre-qualification shall not be considered for further evaluation.
- 3) Technical bid; One set of **un priced bid** of Contract Work Schedule duly signed by the tenderer for accepting the work content (BOM) should be submitted along with the qualification bid for technical evaluation.

Regd. Office: BHEL House, Siri Fort, New Delhi - 110 049

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- 4) The price bid cover shall contain price bid document duly filled in and signed by the tenderer in all the pages. The tenderer has to quote most competitive rates for all the items given in the Bill of Quantities in price bid. The completed qualification bid and price bid along with requisite EMD of Rs1,00,000 /- for this work in the form of Demand Draft in favour of BHEL shall reach the office of the undersigned on or before 07.05.2009 at 14.30 Hrs. Tenderers who had already remitted one time EMD should furnish the details of cash receipt no..... date..... on the top of EMD cover. EMD in any other form will not be accepted. The qualification bid will be opened on the same day at 15.00 hrs. In case of opening day falls on holiday or happened to be declared as a holiday the receipt and opening of the tender shall automatically fall on the same timing of the next working day. Date and time of opening of the Price Bid shall be intimated only to the bidders those who have qualified after evaluation of the qualification bid. You / Your authorized representative may participate in the tender opening.

Clarification if any, can be obtained from the undersigned.

Kindly acknowledge the receipt of the entire set of tender document.

Thanking you,

Yours faithfully,
For Bharat Heavy Electricals Limited,

Encl:

- 1) General Instruction to tenderers
- 2) Price bid (BOM)

Deputy General Manager
Planning & Contracts
Maintenance & Services

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NOTICE INVITING TENDER

01.	Name of work	Fabrication and Laying of pipe lines for Compressed air distribution at various locations in the newly constructed factory
02.	Estimated Cost	Rs. 36 Lakhs.
03.	Earnest Money Deposit	Rs. 1.00 Lakhs.
04.	Completion Time	FOUR (4) MONTHS (From the date of commencement of the work which will be reckoned from the date handing over the site to the contractor)
05.	Last Date for Receipt of Tenders	14.30 Hrs on 07/05/2009
06.	Date of Qualification & Technical Bid Opening	15.00 Hrs on 07/05/2009
07.	Date of Price Bid Opening	Will be intimated to those who are qualified separately.
08.	Guarantee Period	12 (Twelve) Months from the date of actual completion of the entire work and handed over to Bharat Heavy Electricals Limited.

The Tender documents can be down loaded from BHEL website / govt. website at free of cost.

Tender document contains 16 Pages in qualification Bid and 8 pages in Price Bid including Bill of Quantities. Drawing etc.

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BHARAT HEAVY ELECTRICALS LIMITED

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HIGH PRESSURE BOILER PLANT

TIRUCHIRAPALLI – 620 014

TAMILNADU / INDIA

244-84

M & S CONTRACTS (Mechanical)
GENERAL INSTRUCTIONS TO TENDERERS

01. Sealed Tenders enclosed for the work are hereby invited from valid and experienced contractors. In similar kind of work.
02. Tenders should be addressed to the DGM / M&S. Bharat Heavy Electricals Limited. Tiruchirapalli- 620 014 the full name and address of the Tenderer and the name of the work being noted on the cover with tender No & due date of opening.
03. All entries in the tender documents should be made in one ink. Erasure and overwriting are not permitted. All cancellations and insertions should be duly signed by the Tenderer concerned.
04. Tenderers should fill in all the required particulars in the blank spaces provided for this purpose in the tender documents also sign each and every page of the tender document including the drawing attached there to while submitting their tender.
05. Unit rates should be quoted in figures as well as in words with reference to each item and for all the items shown in the attached schedule. These rates shall be for the furnished work in site. Amount of each item and the totals page by page as also the grand total amount of the whole contract should also be filled in by the Tenderers.
06. Rates for each item of the tender schedule should be quoted in Rupees and paise only, In case any difference in rates quoted to figures and in words, the lower of the rates will be taken as the tendered rate.
07. Quantities shown in the attached schedule are only approximate and are liable to variation without ending the contract to any compensation, provided the total value of the contract does not vary by more than 20% (Twenty percent)
08. In quoting their rates the tenderers are advised to take into account all factors including any fluctuations in market rates etc. No claim will be entertained on this account after acceptance of the tender or during the currency of the contract.
09. Before tendering, the tenderers are advised to inspect the site of work and its environments and be well acquainted with the actual working and other relevant conditions, position of materials and labour. , General Instructions to Tenderers, Drawings and specifications and all other documents which form part of the agreement to be entered into.

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TENDERERS ARE REQUESTED TO COVER THEIR EMPLOYEE UNDER PF/ESI/CONTRACT LABOUR REGULATIONS ACT:

10. Rates quoted shall include all royalties, terminal taxes, Octroi duties, General or provincial Excise tax, Sales Tax and any other taxes livable under the state or Central Government Rules. The Bharat Heavy Electricals Limited, Tiruchirapalli will not entertain any claim what so ever in this respect.
11. Quoted rate shall be firm throughout the contract period of 6 months and extended contract period also and no cost escalation is allowed on any account.
12. Should a tenderer find discrepancies or omissions in the drawings or any of the tender documents should be in doubts as to their meaning; he should at once address the authority inviting the tender for clarifications. Every endeavor is made to avoid any error which can materially affect the basis of the tender but the successful tenderer shall taken upon himself to provide for the risk or any error which may be subsequently discovered and shall make no subsequent claim on account thereof.
13. In the event of tender being submitted by the firm, the tender must be signed separately and legibly by each partner or member of the firm or in their absence, by the person holding the power of attorney on behalf of the firm concerned. In the latter case, a copy of the power of attorney duly attested by a Gazetted Officer must accompany the tender.
14. Every tender must be accompanied by Demand Draft for the amount mentioned in this tender notice as Earnest Money Deposit, pledged to BHEL, Tiruvermbur in any of the forms mentioned in para 15 of the General Instructions to tenderers. This Earnest Money Deposit will be refunded to the unsuccessful tenderers within 15 days on finalizations of the award of work. In the case of successful tender, the earnest Money Deposit will be retained as part of the Security Deposits for satisfactory completion of the work in accordance with clause 16 of the General Conditions of contract as amended up to date.

Note : “Cheque, Currency Notes or Money Order will not be accepted in lieu of the Demand Draft referred to above”.

15. EARNEST MONEY DEPOSIT:

The Earnest Money Deposit shall be furnished in the form of Demand Draft only. EMD shall not carry any interest.

16. SECURITY DEPOSIT:

1. The amount of security Money to be deposited for proper fulfillment of the contract will be as follows:

- | | |
|------------------------------------------------------------------------|---------------------------------------------------------------|
| a. For Contract Valued up to
Rs. 10.00 Lakh. | 10% of the Contract value |
| b. For Contract Valued above
Rs. 10.00 Lakh upto
Rs. 50.00 Lakhs | 1 lakh plus 7.5% on the balance of
the Contract value. |
| c. For Contracts valued above
Rs. 50.00 Lakhs | Rs.4 lakhs + Plus 5% on the
balance of the contract value. |

2. The contractor whose tender may be accepted shall, within seven days of receipt by him of the notification of acceptance of his tender, deposit with BHEL, Unit: Tiruverumbur, the prescribed sum as per Clause 16 (i) above towards Security Deposit.

- a. Shall be furnished in the form of Demand Draft in favour of BHEL.
- b. Securities available from Post offices such as National Savings Certificates, Kisan Vikas Patra etc. (Certificates should be held in the name of the contractor furnishing the security and duly pledged in favour of BHEL, Trichy and discharged on the back).
- c. Bank Guarantee from Nationalized, scheduled Banks / Public Financial Institutions as defined in the Companies Act subject to a maximum of 50% of the total security deposit value. The balance 50% has to be remitted either by cash or in the other form of security. The bank guarantee format should have the approval of BHEL.
- d. Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act . The FDR should be in the name of the contractor, A/C BHEL, duly discharged on the back.
- e. Security deposit can also be recovered at the rate of 10% from the running bills. However in such cases at least 50% of the Security Deposit will be collected before start of the work and the balance 50% may be recovered from the running bills.
- f. EMD of the successful tenderer shall be converted and adjusted against the security deposit.

NO INTEREST SHALL BE ALLOWED ON SECURITY DEPOSITS. BHEL, shall not be responsible for any loss of securities due to liquidation or any other reason whatsoever or any depreciation in the value of the Securities while in their charge or for any loss of interest thereon.

NOTE: Acceptance of Security Deposit against Sl. No. (iv) and (vi) above will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.

3. All compensation or other sums of money payable by the contractor to BHEL under the terms of this contract or under any other contract with BHEL, may be deducted from the Security Deposit or realized by the sale of the securities or from the interest arising there from or from any sums which may be due or may become due to the contractor payable by BHEL, on any account whatsoever against this contract or any other contract with BHEL and in the event of his Security Deposit being reduced by reason of such deductions or sale as aforesaid, the Contractor shall within seven days thereafter make good in cash or in securities endorsed as aforesaid, any sum or sums by which the security Deposit has been so reduced.
4. Security Deposit may be refunded on completion of the work and after the expiry of the maintenance period. In case no maintenance period is applicable, then 100% of security Deposit will be refunded after payment of final prescribed format.
17. Unless the Contractor, whose tender is accepted, signs the contract agreement within seven days (7 days) of the date of the order directing him to do so, the amount of Earnest Money Deposit already deposited by him will be forfeited and acceptance of the tender withdrawn.
18. If after opening of tenders, a tenderer revokes his tender or increases his earlier quoted rates or after acceptance of his tender does not commence the work in accordance with the instructions of the Engineering-In-Charge, the Earnest Money Deposited by him will be forfeited and acceptance of his tender withdrawn. In only, a part of the work included in the tender withdrawn. In only, a part of the work included in the tender has been awarded to the tenderer and the tenderer refuses to take up the work the amount of Earnest Money to be forfeited will be based on the value of the contract so awarded.
19. The BHARAT HEAVY ELECTRICALS LIMITED, reserve the right to reject any or all the tenders received or accept any tender or part thereof without assigning any reason therefore. In the case of acceptance of the part of tender, time for completion may also be reduced to the extent considered appropriate by the accepting officer.
20. Tenders not submitted on the prescribed forms are liable to be rejected.

21. The Contractors not borne on the approved list of contractors of this organization must submit the following documents simultaneously with their super scribed.
(Testimonials of Shri Messer's)

In connection with tender, for the work of _____

1. A certificate to establish that the tender is an independent contractor working on his won.
2. At least 2 certificates from responsible officers of Govt. or firms of repute. Regarding the tenderer's capacity to undertake and carryout the work tendered for or similar work satisfactorily.
3. A certificate from a Bank of Standing of Magistrate regarding the tenderer's financial position.
4. License details of the firm and that of the contractor & his employees.

NOTE: a.) Copies of testimonials unless attested by a Gazetted Officer will be accepted.
b.) Non-submission of the above documents simultaneously with the tenders may result in the tender being rejected.

22. The tenders should be accompanied by a list of contracts already held by the contractor at time of submission of the tender and giving the following particulars:
a) The value of each contract.
b) The balance of work remaining to be done on the same.

23. Tenders submitted by Post should be sent by "Registered Post with Acknowledgement Due". These should be posted with due allowance for any delay in postal delivery. Tenders received after the due date of opening of tenders are liable to be rejected.

24. The Contractor's responsibility under this contract shall commence from the date of work order.

25. If a tenderer expires after the submission of his tender or after the acceptance of his tender, the BHEL may at their discretion cancel such tender.

26. The BHARAT HEAVY ELECTRICALS LIMITED, will not be bound by any power of attorney granted by the tenderer or by changes in the composition of the firm. We made subsequent to the execution of the contract. They may, however, recognize such power of attorney and changed after obtaining proper legal advice, the cost of which will be charge above to the contractor concerned.

27. If the tenderer deliberately gives wrong information in his tender BHEL, reserve the right to reject tender at any stage.
28. Words imparting the singular number shall also be deemed to include the plural number and vice the context so required.
29. The general and Special Conditions of Contract are complementary to each other and where they are in conflict, the special conditions shall prevail.
30. The expenses for completing and stamping the agreement shall be paid by the contractor.
31. Tenderers shall not increase their quoted rates, in case the BHEL, negotiable for reduction of rates. Such negotiations shall not amount to cancellation or withdrawal of the original offer and the rates originally quoted shall be binding on the tenders for the period of three months from the date of opening of tenders.
32. All contractors will have to produce PAN/income tax clearance certificate from the Income Tax concerned along with their tender. These contractors whose Income is not taxable will be required to give affidavit for their income on the prescribed form. If the successful tenderer fails to produce the PAN/income tax clearance certificate within the stated period, the earnest money deposit and the Security Deposit of the tenderer may be forfeited and the contract terminated.
33. The contractor shall insure the work against loss or damage to the contractor works, temporary work and materials erected in performance of the contract on "all risks" basis from the time of arrival on site until taken over by BHEL on completion of the contract.

The cover shall also include wherever necessary the risks of testing including breakdown or explosion of plant and machinery undergoing testing, trial and commissioning operations. The insurance shall also specifically cover removal of debris cost. The Sum insured shall represent the estimated full value of the contract works inclusive of value of free supply materials by BHEL, transport charges, customs dues, express freight, overtime charges, cost of erection, value of constructional plants and machinery, removal of debris and escalation of costs where the contract includes a maintenance period. The insurance cover shall specifically include the contractor liabilities during the maintenance period. The insurance shall

be effected in the name of BHEL and the contractor shall submit to BHEL a draft of the insurance policy for approval. The insurance shall also be extended to cover third party personal injury and property damage for a sum to be specified by BHEL. The policy when issued will be lodged with BHEL together with receipts of premium for such insurance and the contractor shall maintain such policies in force until the obligations of the contractor are fully discharged.

If the contractor fails to comply with the term of this conditions the Accepting Officer may insure the work and may deduct the amount of premium from any money that may become payable to the contractor or may at his discretion refuse payment of any advances to the contractor until the contractor shall have complied with the terms of this condition. This provision does not, however absolve the contractor of his responsibility for taking up the insurances. The contractor is therefore, primarily responsible for taking up the insurance in time.

34. All the materials supplied by the contractor should conform to the relevant IS/BS Specifications and agreeable to the engineer-in-charge.

35. Any covering letter and comments of the contractor should be submitted in duplicate along with the offer.

36. For all sheet metal fabrication, pre-treatment of all metals with acid and rust preventing chemical has to be carried out and two coats of red oxide and one coat of stove enameling paint has to be applied by spray painting.

37. Contractor should have separate Registration Code No. for EPF & ESI.

38. SAFETY MEASURES:

list containing the name of persons who are working, their age, designations, pay, nature of work is to be furnished immediately on receipt of work order, in triplicate.

- a. The work should be carried out in the presence of contractors Supervisor and prior permission should be obtained from the concerned supervisor and the section before starting the work.
- b. While erecting the cranes, poles, etc. proper safety precautions such as supporting the poles, tying with ropes suitable lifting tackles etc. are to be adhered.
- c. While working at heights, proper platform ladder, safety belts, etc. should be used.
- d. The necessary safety equipments such as gloves, lineman's belts etc. should be used.
- e. Any other safety measure as necessitated by the nature of work should be strictly followed
- f. If Contractor's workmen are found to violate the safety regulations punitive action will be taken by with-holding a sum of Rs. 100/- to Rs. 500/- for each such violation.
- g. These safety measures shall be deemed to form an integral part of the work order/agreement.

39. THE GENERAL INSTRUCTIONS TO TENDERERS shall be deemed to form an integral part of the work to be entered into.

General instructions to Tenderers-(Annexure- I)

1.TIME:

Time is the essence of the contract and is specified in the tender document or in each individual work order.

As soon as possible after the contract is let or any substantial Work Order is placed and before work under it is begun, the Engineer –in-charge and the contractor shall agree to a Time and Progress Chart. The Chart shall be prepared in direct relation to the time stated in the Tender documents or the work order for the completion of the individual items thereof and/or the contract or Order as a whole. It shall indicate the forecast of the dates for the commencement of the various trade processes or sequences of the work, and shall be amended as may be required by agreement between the Engineer-in-charge and the Contractor within the limitation of the time imposed in the tender documents or order.

In the absence of any specific Time and Progress Chart to be agreed to between the Contractor and the Engineer –in – charge, the contractor shall ensure and maintain uninterrupted progress of the work such that the entire work shall be completed within the time imposed in the tender documents or Order and that the proportion of work completed up to any time in relation to the entire work to be done under the Contract or Order shall not be less than the proportion that the time elapsed bears to the total time of completion provided in the Tender documents or Order.

The Contractor shall suspend the execution of the work, or any part or parts thereof whenever called upon in writing by the Engineer-in-charge to do so, and shall not resume work thereon until so directed in writing by the Engineer-in-charge. The Contractor will be allowed on extension of time for completion not less than the period of suspension but no other claim in this respect for compensation or otherwise howsoever will be admitted. This may also be extended to allow for alteration of work made by the deviation order.

2. COMPLETION

The works shall be completed to the entire satisfactions of the Engineer-in-charge and in accordance with the Contractor's forecast of Time and Progress where operative, and all unused stores and materials, tools, plant, equipment, temporary Buildings, and things shall be removed and the site and work cleared or rubbish and all waste materials and delivered up clean and tidy to the satisfaction of the Engineer-in-charge at the Contractor's expense on/or before the Schedule date of completion.

The BHEL shall have power to take over from the Contractor from time to time such sections of the work as have been completed to the satisfaction of the Engineer-in-charge.

The Engineer-in-charge shall certify to the Contractor the date on which the work is completed and the state thereof.

The Engineer-in-charge shall also certify to the Contractor the state of the work at the end of the maintenance period, where applicable.

The Engineer-in-charge shall also certify to the Contractor the state of the work at the end of the maintenance period, where applicable.

3.COMPENSATION FOR DELAY

If the contractor fails to maintain the required progress in terms of condition 1(TIME) or to complete the work and clear the site on or before the contracted or extended date period of completion, he shall, without prejudice to any other right or remedy of the BHEL on account of such breach, pay as agreed compensation an amount calculated as stipulated below or such smaller amount as may be fixed by the BHEL on the contract value of the work for every week that the progress remains below that specified in condition 1(TIME) or that the work remains incomplete.

This will also apply to items or groups of items for which separate period of completion has been specified. For this purpose the term 'Contract Value' shall be the value at contract rates of the work as ordered.

- a) Completion period (as originally – @ 1 Percent per week.
Stipulated) not exceeding 6 months.
- b) Completion period (as originally- @ ½ percent per week.
Stipulated) exceeding 6 months and
Not exceeding 2 years.
- c) Completion period (as originally- @ ¼ percent per week
Stipulated) exceeding 2 years.

Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed the under noted percentage of the contract value or of the contract value of the item or group of items of work for which a separate period of completion is given:

- d) Completion period (as originally – @ 10 Percent.
Stipulated) not exceeding 6 months.
- e) Completion period (as originally- @ 7½ percent.
Stipulated) exceeding 6 months and
Not exceeding 2 years.
- f) Completion period (as originally- @ 5 percent

SCOPE OF WORK:

Fabrication and laying of pipe lines in over head for compressed Air Distribution from compressor house to the Newly constructed Shop floor under CAS –II.

PART 'A'

SCOPE:

Fabrication and laying of pipe lines in over head from the compressor house to New plant to distribute compressed air. The approximate length of this pipeline from compressor house to entry point of production building is 500 metres.

This main distribution pipeline(Dia.12 inch pipe) to be laid on the vertical supports already available.

This main pipeline will be laid in conjunction with the LPG pipeline already laid on the vertical supports and it should be clamped suitably.

The above main line of dia.12 inch should be connected to the pipe of dia. 8 inch, which will act as sub- header in the production building. The length of this dia. 8 inch pipe line will be around 1200 metres.

This sub- header dia. 8 inch pipe will feed the internal distributing pipeline of dia. 4 inch pipe. The length of this dia. 4 inch pipe line for bay distribution inside the production shops will be around 4000 metres.

To estimate the exact dimension the respective building layout DRG. NO:BHE;CP:00:363/08 REV-01 should be referred.

III. The pipe sizes selected for the distribution is as follows.

A). Main header pipe from the compressor house after the common header is Dia. 12 Inches

- B). Sub header pipe from the main header (12") pipe will be 8 Inches.
- C). Bay wise distribution pipeline in over head will be Dia. 4 Inches.
- D). Column wise drop line pipe size will be Dia. 1 Inches.

The air conveying pipeline to be laid over the support structure suitably.

One end of the pipeline should be connected to the control valve at the compressor house after the common header as mentioned in part 'A'.

The other end at the respective production shops should be connected to respective sub-header pipe (8 inch dia. pipe) also have suitable control valves

The pipe size selected for the internal bay distribution pipeline from the main header is of Dia.4 Inches
These overhead lines inside the production building should be suitably supported.

This support should be in conjunction with the pipeline support available for LPG and oxygen gas .

This pipeline should be routed along the bay in such a way that it should not disturb the gantry crane and power line meant for overhead cranes.

Drop lines from this Dia. 4 Inches over head line will be Dia.1 Inch. The length of this drop lines will be around 8 meters(max). This drop line should also be supported on to the vertical column with 'U' clamp provision.

The end of this pipeline will be fitted with one ball valve of 1 Inch.
The ball valve will have screwed ends.
The number of such drops will be around 300 Nos.

Dia.NB 20mm pipe as Drop lines along the entire distribution network (one drop in a distance of 60 meters) to be provided as moisture drain. The number of moisture drains shall be around 125 numbers. The maximum length of this drop line will be 8 metres.

The end of this drop line will have one ¾ Inch ball valve with screwed end as control valve.

Pressure gauges to indicate the line pressure of air to be provided with suitable connectors onto the distribution pipeline as instructed by the pipeline in-charge.

The working pressure of compressed air line will be 7 Kg/Sq.cm .

The pipeline so laid should be tested for any possible leak to a pressure of 11.0 Kg/Sq.cm before commissioning. If any leak is noticed it has to be repaired and re-tested.

The pipe line laid should be cleaned thoroughly wherever required and painted with one coat of red-oxide paint and two coats of enamel paint .

Flow direction of air to be painted on the pipeline at strategic points as instructed by the pipeline in-charge.

IV. SCOPE OF BHEL:

BHEL will supply all the raw material like pipe, plate material, components like control valves, pressure gauges required for the fabrication and laying free of cost.

BHEL will supply electric power, water, working shed free of cost.

V. SCOPE OF VENDOR:

The service provider should make their own arrangements for the requirements like bends, elbows, flanges, (All with schedule # 150 Rating).

The service provider should make their own arrangements for all the necessary consumables like fasteners, gaskets, kerosene, paint, Welding consumables like welding electrodes, oxy-acetylene gas.

The service provider should bring in their own tools and tackles including welding machine with electrode holder, cable, oxy-acetylene regulators with rubber hoses, and lifting tackles necessary for the execution of the work.

The service provider should make their own arrangements for the requirement of crane facility and vehicle required for the movement of material for the execution of the work.

The service provider should also bring necessary personal protective equipments like safety shoes, hand gloves and safety belt to work at height, so as to work safely.

Rate should be quoted per metre basis for each size of pipe separately, the different pipe sizes are namely Dia 12" sub header, Dia 8" distribution header, Dia.4" bay distribution line, Dia 1" drop line and assembling the required air tapping components.

The service provider should visit the site to acquaint themselves with the work content.

VI. GENERAL CONDITIONS:

- 1)The welding procedure to weld joints will be issued by BHEL..
- 2)The pipeline routing will vary to suit the site and production requirement; hence the service provider should accommodate these changes as informed.

ANNEXURE:

TOTAL LENGTH OF BUILDING	310 M
TOTAL WIDTH OF BUILDING	240 M
TOTAL NUMBER OF BAYS	07 NOS.
TOTAL NO. OF COLUMNS IN ONE BAY	20 NOS.

PIPE SIZES SELECTED FOR COMPRESSED AIR

1. MAIN HEADER DIA. 12 INCHES	= 500 M
2. MAIN HEADER DIA. 8 INCH ES	= 1200 M
3. O.H. DIST. LINE IN BAYS DIA.4 INCHES	= 4000 M
4. DISTRIBUTION DROP LINE DIA.1"	= 2800 M.
5. Moisture drain drop line Dia. ¾ Inch	= 1000 M

.CONTROL VALVES:

CONTROL VALVE FOR BAY ISOLATION 8" VALVE	= 4 NOS.
CONTROL VALVE FOR BAY ISOLATION 4" VALVE	= 20 NOS.
CONTROL VALVE FOR USER 1 Inch.S.S. BALL VALVE	= 300 NOS.
QRC FOR USER POINT	= 600 NOS.
CONTROL VALVE FOR MOISTURE DRAIN NB 20MM BALL VALVE	= 125 NOS.

6. PRESSURE GUAGES = 14 NOS

Fabrication and assembly of pipe supports.

Pipe clamp fabrication and fixing.

Prepare the required number of flanges to suit the valves.
The number of flanges may be around 50 numbers. All the flanges are to be Raised face.

Welding the flanges onto the pipe.

Mounting of valves in the pipe and Fabrication of bends.

Mounting of Pressure gauges on the laid pipeline by providing suitable stub as required.

Internal compressed air distribution pipeline from the main header to individual application point should be provided.

Individual drop line from the over head line of Dia. 4 inches should be provided.

The diameter of this drop line will be Dia.1 inch.
This individual drop line will have a length of 8meter approx.

The end of this individual drop line should have suitable tapping facility.

This tapping will contain one control valve with screwed end.
This control valve should have the provision to fix quick release coupling.

The number of these drop lines will be 300 nos.

Moisture drain line in the main distribution line one number after a distance Of 60 meters to be provided.

The pipe size of this drop line will be Dia. NB 20 mm.
The end of this drop line will be provided with one ball valve (Dia.NB20 mm) Leak testing the laid pipeline hydraulically to a pressure of 11 Kg/Sq.cm

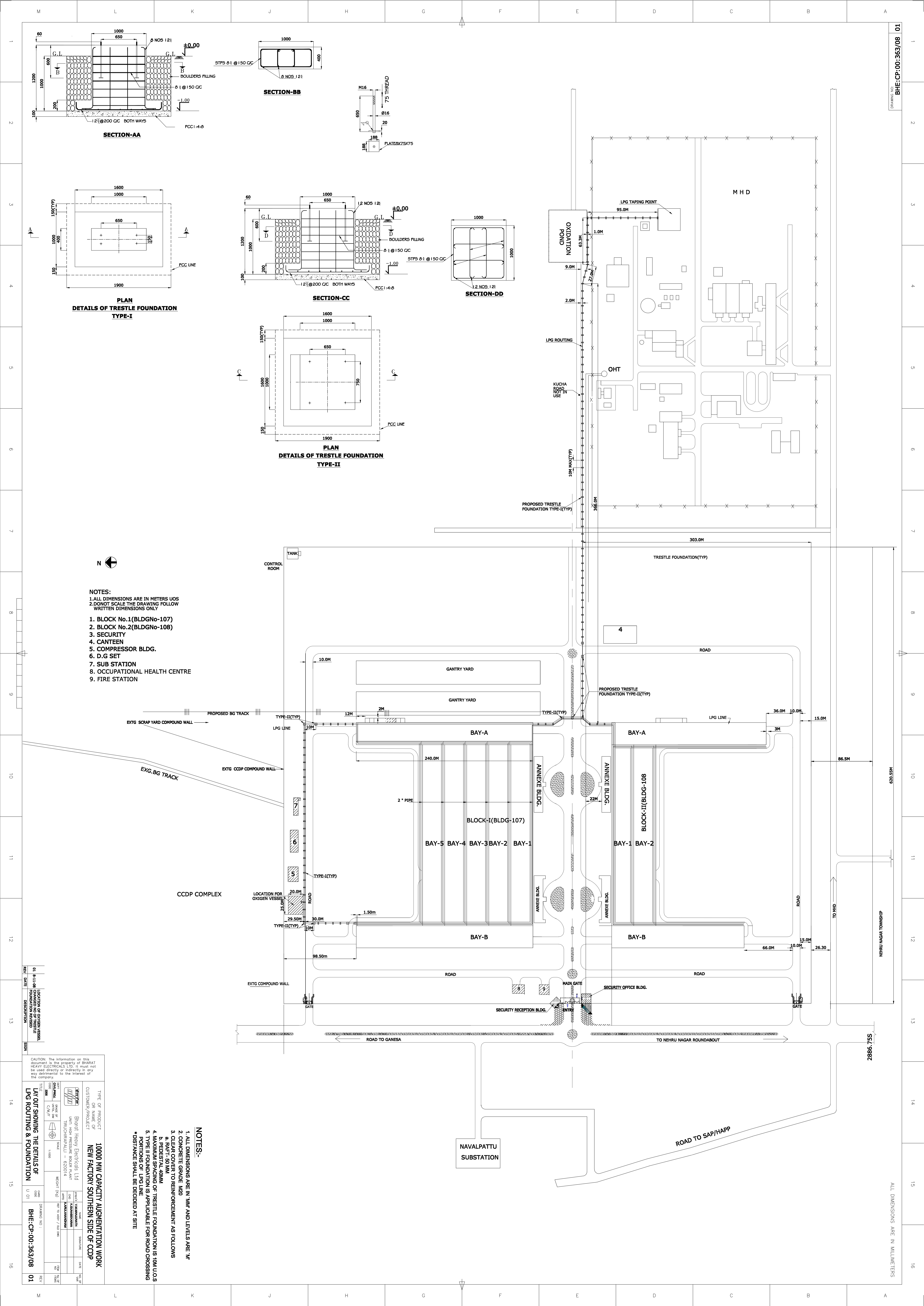
With suitable vent provision to relieve the pressure and bleed out the En trapped water.

Fabrication and Laying of pipe lines for Compressed air distribution at various locations in the newly constructed factory

Ref: Enquiry No:9240900053

Dated 13.04.2009.

Sl.no	Description	unit	qty	Rate in Rs.	Value in Rs.
1	DIA. 12INCHES PIPE LINE	metres	500		
2	DIA. 8 INCHES PIPE LINE	metres	1200		
3	DIA. 4 INCHES PIPE LINE	metres	4000		
4	DIA. 1 INCH PIPE LINE	metres	2800		
5	DIA.NB 20 MM PIPE LINE	metres	1000		
6	ISOLATION 8" VALVE	Nos.	4		
7	ISOLATION 4" VALVE	Sets	20		
8	PRESSURE GUAGES	Nos.	14		
9	1 INCH.S.S. BALL VALVE	Nos.	300		
10	QRC FOR USER POINT	Nos.	600		
11	Control valve for moisture drain NB 20mm Ball valve	Nos.	125		
	Total value in Rupees.				



- NOTES:**
1. ALL DIMENSIONS ARE IN METERS UOS
 2. DONOT SCALE THE DRAWING FOLLOW WRITTEN DIMENSIONS ONLY
 1. BLOCK No.1(BLDGNo-107)
 2. BLOCK No.2(BLDGNo-108)
 3. SECURITY
 4. CANTEEN
 5. COMPRESSOR BLDG.
 6. D.G SET
 7. SUB STATION
 8. OCCUPATIONAL HEALTH CENTRE
 9. FIRE STATION

- NOTES:-**
1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE M
 2. CONCRETE GRADE M20
 3. REINFORCEMENT TO BE ENFORCED AS FOLLOWS
 4. MAXIMUM SPACING OF TRESTLE FOUNDATION IS 10M U.O.S
 5. TYPE II FOUNDATION IS APPLICABLE FOR ROAD CROSSING
- *DISTANCE SHALL BE DECIDED AT SITE

REV	DATE	DESCRIPTION
01	01-11-20	LOCATION OF OXYGEN VESSEL
02	01-11-20	LOCATION OF OXYGEN VESSEL
03	01-11-20	LOCATION OF OXYGEN VESSEL

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way without the prior written approval of the company.
TYPE OF PRODUCT: 1000 MW CAPACITY AUGMENTATION WORK
CUSTOMER/PROJECT: NEW FACTORY SOUTHERN SIDE OF CCDP
DESIGNER: Divyot Heavy Electricals Ltd
CHECKER: Divyot Heavy Electricals Ltd
DATE: 01/11/20
SCALE: 1:1000
WEIGHT (KG):
NO OF SHEETS: 01
TOTAL SHEETS: 01
DRAWING NO: BHE:CP-00:363/08
REV: 01