TENDER DOCUMENT

FOR

Planning, investigation, design, engineering, construction, manufacture/ supply, erection of machinery/ equipment and handing over after satisfactory performance trial run of

A

HIGH CONCENTRATION ASH SLURRY STOWING PLANT

ON

TURN KEY BASIS

AT

MADHUBAND COLLIERY,
BARORA AREA
MAY - 2009

CENTRAL INSTITUTE OF MINING AND FUEL REASERCH
(Council of Scientific and Industrial Research)
Barwa Road , Dhanbad - 826001

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PREAMBLE

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Jharia coalfields has a century old history of mining. A number of coal seams have been worked in these coal-fields over the years. The surface area has a large population density. Because of aging, coal pillars underneath the surface tend to fail causing widespread subsidence. Stabilization of the underground voids has attained paramount importance.

For this purpose, a R&D project for high concentration fly ash slurry stowing has been taken up for UG mine void filling application at XV Top & XV Bottom Seams of Madhuband Colliery, Barora Area, BCCL for filling up excavated underground mine voids by high concentration fly ash slurry. High Concentration fly ash slurry will be prepared at the surface and pumped to the mine by pipelines. This R & D Project will be implemented by CENTRAL INSTITUTE OF MINING AND FUEL RESEARCH (CIMFR) and BHARAT COKING COAL LIMITED (BCCL)

Ash will be carried by road from nearby Chandrapura Thermal Power Station of DVC in trucks / tippers and arrangement for unloading the ash to a storage space will be provided. The outlet of the storage space will be connected to the fly ash feeder system to ensure regulated ash flow as per the slurry requirement. Fly ash from the storage along with controlled dose of water will be fed to a continuous mixing system to get fly ash slurry of predefined concentration which will be stored in the same tank for continuous agitator function and storage. Ash slurry will then be fed to positive displacement type pump. The delivery end of the pipe will be routed to the underground along the incline i.e. the XV Top & XV Bottom seams workings. The delivery pipes will be laid up to the bottom most level of the mine, where stowing is intended. Related slurry making & pumping equipment modules at surface will be skid mounted so that the same can be transposed easily from one site / mine to other as far as possible.

This high concentration fly ash slurry stowing system/ plant, to be installed by the Supplier will be suitable for stowing slurry (with slurry consistency of 55-70% at an average rate of 60 m^3/hr) at a depth range of 135m to 225m with a seam gradient of 1:3.7 to 1: 3.9. During the performance trial run period of 9 months, the Supplier will be required to pump about 1,40,500 m3 high concentration fly ash slurry in the XV Top and XV Bottom seams with 2 shifts workings (@ 6 days / week) from the stowing plant installed at surface.

The total stores-package mentioned above is to be supplied by the Supplier on turn-key basis within a construction period of 12 months and performance trial run for 12 months, i.e. Total - 12+12 = 24 months. The performance trial run of the plant will be divided into two phases. In the first phase 50,000 m3 of ash would be stowed within a period of three

months. Subsequently, monitoring of the packed void will be carried out by CIMFR and a report will be submitted to DGMS for obtaining approval for continuation of filling. On approval of DGMS, the second phase of trial will commence after 3 (three) months of completion of first phase of trial. In this phase, remaining 90,500 m^3 of ash will be stowed within a period of six months.

GLOBAL NOTICE INVITING TENDER

CENTRAL INSTITUTE OF MINING AND FUEL RESEARCH

(Council of Scientific and Industrial Research)

GLOBAL NOTICE INVITING TENDER
NIT NO.- /CIMFR/ / /07-08/PUR

Director, CENTRAL INSTITUTE OF MINING AND FUEL RESEARCH (CIMFR) invites sealed tender (in two bid system – Part I & II) in six copies from reputed and experienced contractors/suppliers for the following stores on turnkey basis:

1.1 Particulars of Items:

Planning, investigation, design, engineering, construction, manufacture/ supply, erection of machinery / equipment and handling over after satisfactory performance trial run of a high concentration fly ash slurry stowing plant at Madhuband Colliery, Barora Area, BCCL on turnkey basis with the following requirements: (a) Slurry consistency: 55 to 70% by weight of fly ash, (b) Average rate of pumping: 60 m^3/hour of slurry, (c) Seam Depth range : 135 m to 225 m, (d) Slurry pumping performance trial run: Total 1,40,500 m^3 (approx.) of slurry during the performance trial run period of nine months with a pumping rate of 3300 m^3 to 3900 m^3 per week (e) Distance of slurry conveyance in pipelines from slurry pumping plant : approx. 2 Km from the pumping plant.

The supply-package will include mainly planning, investigation, design, engineering, construction, manufacture/supply, erection of machinery / equipment & commissioning of various equipments like slurry pumps, fly ash feeder, continuous mixer in retention tank with agitator, PLC & manual process control systems, communication system, instrumentation, fire fighting systems, illumination, complete with electrical, etc. and operate the plant for performance-trial- run on turn key basis.

1.2 Quantity: One (1) complete unit.

1.3 Tender Document Fee in DD: Rs. 300/- (Three hundred only).

1.4 Earnest Money Deposit (EMD) in DD/BG Rs. 15.00 Lakhs. (Rupees)

2. Completion period: Construction Time – 12 (twelve) months, Performance Trial Run period – I^{st} Phase of 3 (three) months, followed by a study period of 3 (three) months and subsequently II^{nd} Phase of 6 (six) months. Total 24 months.

3. Availability of Tender Document: Tender document including terms and conditions can be obtained from the office of the Stores and Purchase Officer,

CIMFR, Barwa Road, Dhanbad- 826 001 on written request on payment of the non-refundable and non - transferable tender document fees as stated above in the form of cross Demand Draft issued by a scheduled bank drawn in favour of Director, CIMFR, payable at State Bank of India, Hirapur Branch, Dhanbad from --.--.2009 to --.--.2009. CIMFR will not be responsible for non-receipt of the Tender Documents due to postal delay/loss in transit.

Tender Documents with detail terms & conditions can be downloaded from our website: www.cimfr.nic.in. Tender fees will not be required if it is downloaded from the website up to the tender availability period.

4. **Qualification of the Tenderer:** To qualify for award of the work, the intending tenderer must have in its name as a supplier/prime contractor experience of having successfully completed at least one or two similar nature of works during last 7 (seven) years. “Similar nature of work’ means execution of supply and Installation of High Concentration Slurry Handling Plant comprising of at least pump and automated control system on turn-key basis.

   Issuance of tender document does not mean that the parties are considered qualified. After opening of part-I of the offer, the same will be scrutinised for eligibility / qualification.

5. **Validity Period of Offer:** The rates offered in Part II should be valid for one hundred and eighty (180) days from the date of opening of Part I of the Tender.

6. **Pre – Bid meeting**: A pre-bid meeting will be held on ---/ -- /09 at 11.00 hrs at the Office of the Purchase Officer, CIMFR, Dhanbad.

7. **Receipt and opening of Tenders:** The tender complete in all respect alongwith EMD should reach to this office on or before --.--.2009 before 1.00 PM (IST). Part – I of the tender will be opened on the same day at 3.30 pm onwards in the Meeting Room of CIMFR in presence of attending bidders or their authorized representatives.

8. The required EMD as stated above in the form of DD or BG must be enclosed in the technical bid failing which the offer will be treated as non-responsive

9. Director, Central Institute of Mining and Fuel Research reserve the right to accept or reject any or all the tenders wholly or partially without assigning any reason thereof.

Stores & Purchase Officer

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

1. **SCOPE OF TENDERER:**

1.1 The Central Institute of Mining and Fuel Research (referred to as Institute in these documents) invites bids for supply, installation, testing, commissioning, performance trial run and training in the usage and administration of procurement of products mentioned in our GLOBAL NOTICE INVITING TENDER and detailed in the section "Scope of Supply " of tender document.

2. **ELIGIBLE TENDERERS:**

2.1 The invitation for Bid is open to all bidders eligible to participate as per qualifying criteria laid down separately herein after.

2.2 All bidders shall provide in Part 1, Bid Forms and Qualification Information, a statement that the Bidder is not associated, nor has been associated in the past, directly or indirectly, with the consultant or any other entity that has prepared the design, specifications, and other documents for the Project or being proposed as Engineer for the Stores. A firm that has been engaged by the Institute to provide consulting services for the preparation or supervision of the Works shall not be eligible to Bid.

3. **QUALIFICATION OF THE TENDERER**: question

3.1 All bidders shall provide in Part 1, Bid Forms and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.

3.2 If the Institute has not undertaken prequalification of potential bidders, all bidders shall include the following information and documents with their Bids (copies of all documentary evidences are to be duly authenticated by the tenderers/ constituted attorney of the tenderer with full signature and seal. All signed declarations are to be made in the tenderer's letter head):

a. copies of original documents defining constitutions or legal status, place of registration, and principal place of business; written power of attorney of signatory of the Bid to commit the Bidder;

b. i) Total monetary value of contractual/supply work performed for each of the last 5 years.

ii) Experience of having successfully executed similar work during last 7 years.

c. Experience in works of similar nature and size for each of the last five years, and details of work under way or contractually committed; and the name and address of clients who may be contacted for further information on those contracts with performance certificate for the works executed in last five years from the respective owners.

d. Major items of construction equipment proposed to carry out the Contract.

Note : The intending tenderer will have to submit a declaration in support of the authenticity of the credential submitted by them along with the tender in the form of an affidavit as per the format provided in the bid document (Annexure – A).

e. Qualifications and experience of key site management and technical personnel proposed for the contract.

f. Reports on financial standing of Bidder, such as profit and loss statement and auditor's reports for the past five years.

g. Evidence of adequacy of working capital for this Contract (access to lines of credit and availability of other financial resources).

h. Authority to seek references from the Bidder's bankers.

i. Information regarding any litigation, current or during the last five years, in which the Bidder is involved. the parties concerned, and disputed amount including status of final settlement of contracts including claims/ counter claims, liquidated damage, bonus etc., if any.

j. Proposals for subcontracting components of the stores amounting to more than 10 percent of the Price and;

k. Permanent Income Tax Account No.(PAN).

l. The bidders would give a declaration that they have not been banned or delisted by any Govt. Or Quasi-Govt. Agencies or PSU's. If a bidder has been banned by any Govt. Agencies or Quasi-Govt. Agencies or PSU's that fact must be clearly stated and it may not necessarily be a cause for disqualifying him. If this declaration is not given the bid will be rejected as non-responsive.

3.3 To qualify for award of the work: –

To qualify for award of the work the intending tenderer must have in its name as a supplier / prime contractor experience of having successfully completed at least one or two similar nature of works during last 7 (seven) years. "Similar nature of work" means execution of supply and installation of High Concentration Slurry Handling Plant comprising of at least pump and automated control system on turn-key basis.

Issuance of tender document does not mean that the parties are considered qualified. After opening of part-l of the offer, the same will be scrutinised for eligibility

/ qualification.

Note: The statements showing the value of existing commitments and ongoing work order as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Engineer not below the rank of Executive Engineer.

3.4 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

a. made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or

b. record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc.

4. **ONE BID PER BIDDER:**

4.1 Each Bidder shall submit only one Bid, either individually, or as a partner in a partnership firm or a partner in a public limited firm. A Bidder who submits or participates in more than one Bid (other than as a sub-supplier or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder's participation to be disqualified.

5. **COST OF BIDDING:**

5.1 The Bidder shall bear all costs associated with the preparation and submission of his Bid, and the Institute will in no case be responsible or liable for those costs regardless of the conduct and the outcome of the bidding process.

6. **SITE VISIT:**

6.1 The Bidder, at the Bidder's own responsibility, cost and risk, is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and execution of purchase order. The costs of visiting the Site shall be at the Bidder's own expense.

6.2 It shall be deemed that the tenderer has visited the site/area and got fully acquainted with the working conditions and other prevalent conditions and fluctuations thereto whether he actually visits the site/area or not and has taken all the factors into account while quoting his rates and prices.

6.3 Site Investigation Reports: The Supplier, in preparing the bid, shall rely on his/their Site Investigation Report, supplemented by any information available to the Bidder.

7. **The BIDDING DOCUMENTS:**

7.1 The set of bidding documents includes the goods and services required, bidding procedures, specifications, terms and condition of supply are also prescribed in the bidding document:

Section 1 Global Notice Inviting Tender
Section 2 Instructions to Bidders
Section 3 Technical Bid Forms and Qualification Information
Section 4 Scope of Supply
Section 5 Technical Specifications
Section 6 Terms and Conditions of Supply
Section 7 Financial Bid Form including price
Section 8 Forms of Securities
Section 9 Tender Drawings

The bidder is expected to examine all instructions, forms, terms and conditions in the bidding document. Failure to furnish all information required or submission of bid not substantially responsive to the bidding documents in every respect will be at the bidder's risk and may result in rejection of its bid.

8. **CLARIFICATI0N OF BIDING DOCUMENTS:**

8.1 A prospective Bidder requiring any clarification of the bidding documents may notify the Institute in writing or by cable ("cable" includes telex and facsimile) at the Institute's address indicated in the Notice Inviting Tender. The Institute will respond to any request for clarification received earlier than 15 days prior to the deadline for the submission of Bids. Copies of the Institute's response will be forwarded to all purchasers of the bidding documents, including a description of the inquiry but without identifying its source.

8.2 Pre-bid meeting: **A pre-bid meeting will be held on…….at 11.00 hrs at the office of the Purchase Officer, CIMFR, Dhanbad to clarify the issues and to answer questions on any matter that may be raised at that stage. Technical suggestions from the bidders in the interest of this project will be welcomed. The firms will have to arrange their visit at CIMFR of their own. However, Guest House accommodation (on chargeable basis) may be provided to the participating representatives of the invited firms.**

9. **AMENDMENT OF BIDDING DOUCMENTS:**

9.1 Before the deadline for submission of Bids, the Institute may modify the bidding documents by issuing addenda based on the inputs and out come of the pre-bid meeting as per clause 8.2 above.

9.2 Any addendum thus issued shall be part of the bidding documents and shall be communicated in writing or by cable to all purchasers of the bidding documents. Prospective Bidders shall acknowledge receipt of each addendum by cable to the Institute.

9.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Institute shall extend, as necessary, the deadline for submission of Bids, in accordance with Sub-clause 19.2 below. And the same is also to be communicated simultaneously to all the purchaser of the bidding document.

10. **LANGUAGE OF BID:**

10.1 All documents relating to the Bid shall be in the English language.

11. **DOCUMENTS COMPRISING THE BID:**

11.1 The bids are to be submitted in three separate inner sealed envelopes

a) Earnest Money Deposit
b) Technical and Commercial Bid
c) Financial Bid

All the inner sealed envelopes will then be placed in one outer envelope, sealed and marked properly as per Clause 18 and submitted to the Institute at its address before the deadline for submission of the bid as described in Clause 19.

11.2 **TECHNOLOGY PROPOSED:**

Bidders should submit along with their tenders a comprehensive technical scheme describing all the equipment with broad specification, general layout of the plant showing the arrangement & equipment in plan, elevation, spares/tools of tackles instruments, details of process control in PLC and manual modes, slurry and other pumps, fire fighting system, communication system, illumination of the plant, electrical drives / transformers cables set, operational and other requirements during performance trial run etc. to meet the requirements as described. They should provide all drawings & schemes to enable the Institute to assess the tender strictly in terms of the tender document. They should also include and submit the following details in a sequential manner.

a) List of all equipment, PLC / manual control systems, instrumentations etc. with major parameters/specifications along with dimensioned general layout drawings.
b) Constructional equipment to be used.

c) Manpower to be deployed during construction and performance trial run.

12. **BID PRICES:**

12.1 The order shall be for the whole Works as described in Sub-Clause 1.1(Section: Global Notice Inviting Tender), based on the scope of supply as detailed in the bidding document.

12.2 The Bidder shall submit rates and prices for all items of the Works described in the scope of supply. Corrections, if any, shall be made by crossing out, initialing, dating and rewriting.

12.3 All duties, taxes, and other levies payable by the Supplier under the order, or for any other cause shall be included in the rates, prices and the total Bid Price submitted by the Bidder. All incidentals, overheads, leads, lifts, carriages etc. as may be attendant upon execution and completion of supply as stipulated in the bidding document shall also be included in the rates, prices and total Bid price submitted by the bidder.

12.4 The rates and prices quoted by the Bidder shall be fixed for the duration of the delivery period of supply and shall not be subject to variations on any account except to the extent variations allowed as per the conditions of the supply indicated in the bidding document.

13. **CURRENCIES OF BID AND PAYMENT:**

13.1 The unit rates and prices shall be quoted by the Bidder entirely in Indian Rupees.

14. **BID VALIDITY:**

14.1 Bid shall remain valid for a period not less than one hundred and eighty days after the deadline for bid submission specified in Clause 19. A bid valid for a shorter period shall be rejected by the Institute.

14.2 In exceptional circumstances, prior to expiry of the original time limit, the Institute may request that the bidders may extend the period of validity for a specified additional period. The request and the bidder's responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid but will be required to extend the validity of his bid security for a period of the extension and in compliance with Clause 15 in all respects.

15. **BID SECURITY / EARNEST MONEY DEPOSIT:**

A. The bidder shall furnish, as part of his bid, a Bid Security/Earnest Money of the amount as shown in NIT for this particular supply. Bid Security/EMD will be required to be deposited in the form of irrevocable BG/DD (from Scheduled Indian Bank as such acceptable to the Institute) with validity 180 days beyond the validity of the Bid in the format given in the Bid Document. Demand Drafts will also be acceptable as Bid Security/ Earnest Money drawn in favour of Director, CENTRAL INSTITUTE OF MINING AND FUEL RESEARCH on any Scheduled Bank payable at its branch at Dhanbad.

B. **Any Bid not accompanied by an acceptable Bid Security / EMD shall be rejected by the Institute as non-responsive.**

C. The Bid Security / EMD of the unsuccessful Bidder shall be refunded within 15 days of placement of purchase order.

E. The Bid Security/Earnest Money may be forfeited:

a. If the Bidder withdraws the Bid after Bid opening during the period of Bid validity; or

b. In case, a successful Bidder fails within the specified time limit to return the purchase order after signing the same; or

c. If the Bidder does not accept the correction of Bid Price pursuant to clause 25.2 of Instruction to Bidder.

16. The Bid Security/EMD deposited with the Institute will not carry any interest.

17. **FORMAT AND SIGNING OF BID:**

17.1 The Bidder shall prepare the bidding documents comprising the Bid as described in Clause 11 of these instructions to Bidders.

17.2 All documents of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder, pursuant to Sub-Clauses 3.2. All pages of the Bid document shall be initialed by the person or persons signing the Bid.

17.3 The Bid shall contain no alterations, or additions, except those to comply with instructions issued by the Institute or as necessary to correct errors made by the Bidder, in which case such corrections shall be initiated by the person or persons signing the Bid. Erasing or overwriting in the bid document may disqualify the bidder.

17.4 The Bid shall contain no alterations, or additions, except those to comply with instructions issued by the Institute or as necessary to correct errors made by the Bidder, in which case such corrections shall be initiated by the person or persons signing the Bid. Erasing or overwriting in the bid document may disqualify the bidder.

18. **SEALING, MARKING OF BIDS:**

18.1 Sealing and Marking of Bids

i) The bids shall be submitted in three separate sealed envelopes addressed to The Director, Central Institute of Mining & Fuel Research, Barwa Road, Dhanbad - 826001, District:- Dhanbad, JHARKHAND, INDIA which shall be marked as "EMD", "Technical-Commercial Bid" and "Financial Bid" mentioning Tender Number, Description of Item and Date of Opening and all the three envelopes should be put inside one big envelope.

ii) The Envelopes shall indicate the name and address of the bidder to enable the bid to be returned unopened in case it is declared late and delayed.

Telex, cable, facsimile and unsigned bids will not be considered and rejected.

19. **SUBMISSION OF BIDS – DEADLINE:**

19.1 Bids must be received by CIMFR at the address given in Section-I not later than the time and date specified on the cover page. In the event of the specified date for the submission of bids being declared a holiday for CIMFR, the bids will be received up to the appointed time on the next working day.

19.2 The Director, CIMFR may at his discretion extend the deadline for submission of bids by amending the bid documents, in which case all rights and obligations of the purchaser and bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

20. **LATE BIDS/ DELAYED BIDS:**

20.1 Any Bid received by the Institute after the deadline for submission of bids prescribed by CIMFR will be rejected and/or returned unopened to the bidder.

21. **MODIFICATION AND WITHDRAWAL OF BIDS:**

21.1 In a two Bid system – Part I (EMD and Technical & commercial bid) & Part II (Financial bid). The Technical & Commercial Bid will be opened and analysed first for acceptability by the Institute. Respective tenderers may be called for discussion and may be allowed to modify their technical bids to suit the technical requirement. Tenders not reaching the threshold technical level shall be rejected.

The bidders who finally emerge as technically acceptable shall be allowed to withdraw their price bid and send again a revised bid in a sealed envelops or to adhere to the original price bid sent. Each Bidder's modification or withdrawal notice shall be prepared, sealed, marked and delivered in accordance with the provisions Clause 11, 17, 18 and 19 with the outer and inner envelopes additionally marked 'MODIFICATION' or 'WITHDRAWAL', as appropriate.

22. **BID OPENING:**

22.1 The EMD envelope (Part I) will be opened first by the Institute. If the EMD is submitted as per requirement, then the Institute will open technical–commercial Bids (Part I), including modification made pursuant to Clause 21, in the presence of the bidders' or their representatives who choose to attend at the time and in the place specified in Clause 19. In the event of the specified date of Bid opening being declared a holiday for the Institute, the Bids will be opened at the appointed time and location on the next working day.

22.2 After examination and evaluation of part I of the bids in accordance with Cl. 24 of these instructions, financial bids (part II) of only those bidders which are found to be technically qualified to undertake the job shall be opened in the presence of their representative, who are willing to participate, on the specified date, time and venue.

23. **CLARIFICATION OF BIDS:**

23.1 To assist in the examination, evaluation and comparison of Bids, the Institute may, at the Institute's discretion, ask any Bidder for clarification of the Bidder's Bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, telex, or facsimile **and no change in substance of the bid shall be sought**, offered or permitted.

24. **EXAMINATION OF BIDS AND DETERMINATION OF RESPONSIVENESS:**

24.1 Prior to the detailed evaluation of Bids, the Institute will determine whether each Bid:

a. Meets the eligibility criteria defined in Clause 3;
b. Has been properly signed;
c. Is accompanied by the required securities; and
d. Is substantially responsive to the requirements of the Bidding documents.

24.2 A substantially responsive Bid is one which conforms to all the terms, conditions & specifications of the Bidding documents without material deviation or reservation. A material deviation or reservation is one:

a. Which affects in any substantial way the scope, quality, or performance of the works;
b. Which limits in any substantial way, inconsistent with the Bidding documents, the Institute 's rights or the Bidder's obligations under the Contract; or
c. Whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

24.3 If a Bid is not substantially responsive, it may be rejected by the Institute at its sole discretion.

25. **CORRECTION OF ERRORS:**

25.1 Bids determined to be substantially responsive will be checked by the Institute for any arithmetical errors. Arithmetic errors will be corrected by the Institute as follows:

a. Where there is a discrepancy between the amounts in figures and in words, the amounts in words will prevail; and
b. Where there is a discrepancy between the unit rate and the total price that is obtained by multiplying the unit rate and quantity, the unit rate as quoted shall prevail.
c. Discrepancy in totaling or carry forward in the amount quoted by the contractor shall be corrected.

The tendered sum so corrected and altered shall be substituted for the sum originally tendered and considered for acceptance instead of the original sum quoted by the tenderer along with other tender/tenders. Rounding off to the nearest rupee should be done in the final summary of the amount instead of in totals of various sections of the offer.

25.2 The amount stated in the Bid will be adjusted by the Institute in accordance with the above procedure for the correction of errors and, shall be considered as binding upon the Bidder. If the bidder does not accept the correction of error, its bid will be

26. **EVALUATION AND COMPARISON OF BIDS:**

26.1 The Institute will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause 24.

26.2 The comparison shall be of all inclusive prices of goods, services, inclusive of all cost as well as taxes paid or payable and the warranty period asked for.

26.3 Bidders shall state their bid price for the payment schedule. Bids will be evaluated on the basis of this base price. Bidders are however, permitted to state an alternative payment schedule and indicate the reduction in bid price they wish to offer for such alternative payment schedule. The purchaser may consider the

alternative payment schedule offered by the selected Bidder **but it may not be binding on purchaser.**

26.4 The Institute reserves the right to accept or reject any variation, deviation, or alternative offer and other factors that are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the bidder shall not be taken into account in Bid evaluation.

26.5 If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of supply to be performed under the purchase order, the Institute may require the Bidder to produce detailed price analyses for any or all items of the work, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed.

27. **AWARD CRITERIA/ PLACEMENT OF PURCHASE ORDER**:

27.1 Subject to Clause 26, the Institute will place the purchase order on successful techno-commercially evaluated bidder whose Bid has been determined to be **substantially responsive** to the Bidding documents and has been determined as the **Lowest evaluated Bid** provided further the bidder is determined to be qualified to execute the purchase order satisfactorily. Institute shall be the sole judge in this regard.

28. **NOTIFICATION OF AWARD AND SIGNING OF PURCHASE ORDER:**

28.1 The Bidder, whose Bid has been accepted, will be notified of the award by the Institute prior to expiry of the Bid validity period by cable, telex, or facsimile confirmed by registered letter. This letter (hereinafter and in the Conditions of Supply called the "Purchase Order") will state the sum that the Institute will pay the Supplier in consideration of the execution, completion and maintenance of the stores by the Supplier as prescribed.

28.2 One copy of the Purchase Order is to be signed by the successful Bidder as a token of acceptance of purchase order and returned to the Institute.

29. **DEEMED EXPORTS**

29.1 If the bidder has quoted any item/items under the deemed exports then it will be the responsibility of the Bidder to get all the benefits under deemed exports from the Government. The Institute's responsibility shall only be limited to the issuance of required certificates like Excise Duty exemption certificate, concessional Custom Duty certificate, Road Permit etc. The quotation of the Bidder will be unconditional and phrases like "Subject to availability of deemed exports benefit" will not find place in it.

30. **Pond ash & water sample** : The bidders will test the pond ash sample which will be available from the ash ponds of Chandrapura Thermal Power Station regarding fly ash properties (which will be brought by the trucks) e.g. composition, particle size, specific weight, temperature, pH value, etc. for designing the stowing system. The water available near the pit head which will be used for making the slurry may also be tested, if necessary at their own cost.

31. The tenderer(s) shall also state what technical / supervisory personnel he / they will be employing for supervising the work during construction and trial run of the plant.

Position	Name	Total post Qualification Experience (years)	In Similar Works (Years)	As Manager or Section Leader of Similar Works (years)
Manager for the supply work / Alternative name				
Site engineers of resp. disc. Alternative names				
Cost controller Alternative name				
Quality Assurance Engineer Alternative name				
Site supervisors of resp. disc. / Alternative names				

The applicant must have suitably qualified personnel to fill the following key positions for the work. The applicant will supply information on a prime candidate and an alternate for each positions both of whom, wherever possible meet the experience requirements as specified in format above:

32. Canvassing in connection with the tenders in any shape / form is strictly prohibited & tenders submitted by tenderers who resort to canvassing shall be liable to rejection.

33. **DOWNLOADING OF TENDER DOCUMENT AND SUBMISSION OF TENDER**

33.1 **The Institute shall not be responsible for any delay / difficulties / inaccessibility of the downloading facility for any reason whatsoever. The downloading facility shall be available during the period of sale of tender paper.**

33.2 The bidders will be required to submit an undertaking that they will accept the tender documents as available in the website and their tender shall be rejected if any tampering in the tender document is found to be done at the time of opening of tender and the undertaking shall be submitted in a separate envelope marked “Undertaking” and not with part – I / EMD.

33.3 In case of any discrepancy between the tender documents downloaded from the website and the master copy available in the office, the latter shall prevail and will be binding on the tenderers. No claim on this account will be entertained.

Annexure – A

Format for Affidavit

Non-judicial Stamp Paper

AFFIDAVIT

I, …… Partner/Legal Attorney/ accredited Representative of M/s. ……., solemnly declare that :

1. We are submitting Tender for the Supply Work ……. ……. against Tender Notice No. ……. dated …… .

2. None of the Partners of our firm is relative of employee of Central Institute of Mining and Fuel Research.

3. All information furnished by us in respect of fulfillment of eligibility criteria and qualification information of this Tender is complete, correct and true.

4. All documents / credentials submitted along with this Tender are genuine, authentic, true and valid.

5. If any information and document submitted is found to be false / incorrect at any time, department may cancel my Tender and action as deemed fit may be taken against us, including termination of the purchase order, forfeiture of all dues including Earnest Money and banning/ delisting of our firm and all partners of the firm etc.

Signature of the tenderer

Dated ……

Seal of Notary

TECHNICAL BID FORMS

&

QUALIFICATION INFORMATION

TECHNICAL BID FORMS & QUALIFICATION INFORMATION

Technical Bid Form

(To be submitted on the firm's Letter Head and signed by an authorized person)

To,

The Director,
Central Institute of Mining & Fuel Research,
P.O. DHANBAD,
Barwa Road,
DHANBAD - 826001
INDIA

Ref: Tender No. CIMFR/PUR/--(--)2009 date: --.--.2009

Sir,

Having examined the bidding documents, the receipt of which is hereby duly acknowledged, we, the undersigned offer to supply and deliver goods as per the schedule of requirements and in conformity with the said bidding documents. We undertake, if our bid is accepted, to deliver the goods in accordance with the delivery schedule specified in the bidding documents.

If our bid is accepted, we will submit the BG/DD towards the Earnest Money Deposit along with Part – I of the bid, upto the completion of the supply including performance trial run.

We agree to abide by this bid for a period of 180 (One hundred eighty) days after the date fixed for opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period. We declare that

1) We are the manufacturers/authorized agents/distributor of_____

_____

that we/our principals are equipped with adequate machinery for production, quality control and testing of offered products manufactured/developed and used by us.

2) We hereby offer to supply the Goods/Services at the price at the rates mentioned in the Financial Bid.

3)We enclose herewith the complete Technical Bid as required by you. This includes:

Technical Bid Form

- ü Copy of the Last Audited Balance Sheet of the company
- ü Income Tax Registration Certificate/PAN No.and latest Income Tax Clearance Certificate
- ü Proof of Manufacturer's authorization
- ü Photocopy of Warranty Service Provider Agreement between the manufacturer and the Service Provider.
- ü Statement of Deviation from the technical specifications
- ü Details of local service centers
- ü Copies of relevant work orders
- ü Details of supplies of identical or similar equipment made to other Government / Semi-government/ PSU/ Reputed Organization/CSIR Labs/ Institutions for the preceding seven years together with price eventually or finally paid.

4) We have carefully read and understood the terms and conditions of the bid document and the conditions of the contract applicable to the bid document and we do hereby undertake to supply as per these terms and conditions.

5) Certificate that the bidder is a Sole proprietorship firm and the person signing the bid document is the sole proprietor/constituted attorney of the sole proprietor, or

A partnership firm, and the person signing bid document is a partner of the firm and he has authority to refer to arbitration disputes concerning the business of the partnership by virtue of the partnership agreement/by virtue of general power of attorney, or

A company and the person signing the document is the constituted attorney.

(NOTE: Delete whatever is not applicable. All correction/deletions should invariable by duly attested by the person authorized to sign the bid document)

6) We do hereby undertake take, until a formal work order is prepared and executed, this bid, together with your written acceptance thereof and placement of letter of intent awarding the work order, shall constitute a binding contract between us. Dated this day 2009

Signature of Bidder

Details of enclosures.

Full Address _____

Telephone No. :

Telegraphic Address:

Fax No _____

E-Mail

COMPANY SEAL

STATEMENT OF DEVIATIONS FROM TECHNICAL SPECIFICATIONS AND SCHEDULE OF REQUIREMENTS

Following are the Technical deviations and variations from the Technical specifications and Schedule of Requirements. These deviations and variations are exhaustive. Except these deviations and variations, the entire work shall be performed as per your specifications and documents.

Sl	**Item**	**Statement of**

Signature of the Bidder

Name:

Date:

Place:

Address:

Company Seal

MAINTENANCE INFRASTRUCTURE FACILITIES INCLUDING ADDRESSES OF THE LOCAL SERVICES CENTRES

LOCATION	ADDRESS OF SERVICE CENTRE	NAME OF THE CONTACT PERSON	Total No. of qualified service engineers	Remarks

Signature of the Bidder

Name:

Date:

Place:

Address:

Company Seal

QUALIFICATION INFORMATION
(The information to be submitted by all the Bidders)

1. Individual Bidders

1.1 Constitution or Legal status of Bidder (attach copy)

Place of registration: _____

Principal place of business: _____

Power of Attorney of signatory Bid: (attach)

1.2 Details of the turnover during last 3 (three) years :

Annual Turnover Data (Construction only)		
Year	Turnover in Rs.	Remarks

1.3 Details of experience for similar nature and complexity of work in last 7 (seven) years :

Use a separate sheet for each contract (Attach performance certificates from concerned customer).

1. Number of supply/contract :
   Name of supply/contract:
2. Name of the employer :
3. Employers address :
4. Nature of work and special features if any :
5. Contract role (check one)
   1. Sole contractor/Supplier 2. Subcontractor 3. Partner in joint venture
6. Value of the total contract/ Supply :
7. Date of award :
8. Date of completion with original schedule and slippage, if any.
9. Specified requirements:
   a) Concrete: b) Structural steelworks: c) Equipment:

1.4 Sub-Supplier/Consultants and firms proposed to be involved:

(Attach performance credentials including Bio-data of design personnel of Consultants)

Section of work	Approx. value of Subcontract	Sub-supplier (Name & Address)	Experience in Similar works

1.5 Information on Bid Capacity. (Works for which bids have been submitted and work which are yet to be completed) as on the date of this bid :

a. Total value of work executed in last five years (year wise);

b. Details of existing commitments and ongoing works.

c. Details of Works for which bids already submitted.

1.6 Financial reports of the last five years: balance sheets, profit and loss statement, auditors report etc. (copies to be submitted and the following format be filled up)

Financial information In Rs.	Actual : Previous five years					Projected : Next two years	
	1	2	3	4	5	6	7
1. Total assets							
2. Current assets							
3. Total liabilities							
4. Current liabilities							
5. Profits Before tax							
6. Profits after tax							

1.7 Evidence of access to financial resources to meet the qualification requirements:

Cash in hand, liquid assets, unencumbered real assets, lines of credit and other financial means etc. sufficient to meet the construction cash flow (the copies to be submitted and the following format to be filled up)

Source of financing	Amount in Rs.
1.	
2.	

1.8 Details of the bankers:

Banker	Name of the banker	
	Address of the banker	
	Telephone	Contact name and title
	Fax	Telex

1.9 Information about litigations, if any, in which bidder is involved:

Year	Award FOR or AGAINST applicant	Name of the client, Clause of Litigation and Matter of dispute	Disputed Amount in Rs.

1.10 Details of the major construction equipment to be used for the work :

	Equipment type and capacity	Make and model	Minimum number
1			
2			

1.11 Details of additional construction equipment to be purchased new for the project, indicating delivery times required in the form given below:

	Equipment to be purchased new -type and capacity	Make and model	Delivery period	Number
1				
2				

1.12 Personnel capabilities

Position	Name	Total post Qualification Experience (years)	In Similar Works (Years)	As Manager or Section Leader of Similar Works (years)
Manager for the supply work Alternative name				
Site engineers of resp. disc. Alternative names				
Cost controller Alternative name				
Quality Assurance Engineer Alternative name				
Site supervisors of resp. disc. Alternative names				

The applicant must have suitably qualified personnel to fill the following key positions for the work. The applicant will supply information on a prime candidate and an alternate for each positions both of whom, wherever possible meet the experience requirements as specified in format above:

1.13 The bidder should list transport available for personnel, construction, plant, stores and machinery. Where transport is to be subcontracted/ sub-supplied the proposed arrangements should be clearly demonstrated.

1.14 The bidder should provide full details of his plant and maintenance facilities together with the full details of laboratory personnel, workshop personnel including fitters, mechanics, machinists etc.

1.15 Permanent Income Tax Account No.(PAN)

1.16 DETAILS OF EARNEST MONEY/PERFORMANCE SECURITY

Deposit of Earnest Money by:

Draft No. Bank Guarantee Details:

Drawn on: Name of Bank:

Amount (Rs.): Amount of BG:

Bank Guarantee valid upto:

1.17 Other details

(a) Details of registration/enlistment with Government Organizations/ PSUs/ Subsidiaries of Coal India Ltd.

(b) Certificate of registration as per statutory requirement under Sales Tax, Contract Labour Laws etc. as may be applicable

Signature of the Tenderer

NOTE: Separate sheets may be attached to furnish details if necessary.

SCOPE OF SUPPLY

SCOPE OF SUPPLY

1. 0 Scope of Supply:

Planning, investigation, design, engineering, constructions, manufacture/supply, erection of machinery/equipment along with instruments, process control systems, fire fighting systems, communication system, illumination complete with electrical, etc and handing over after satisfactory performance trial run of a High Concentration Fly Ash Slurry Stowing (HCFASS) plant at Madhuband Colliery, Barora Area, BCCL on turnkey basis.

The major duty parameters of the proposed high concentration fly ash slurry stowing system / plant and other elements of the scope of work are as follows:

a) The stowing plant will be suitable for

a.1 Unloading the fly ash from tippers / trucks to the storage hopper. The fly ash mixed with bottom ash will be as available from ash pond of Chandrapura Thermal Power Station (CTPS).

a.2 Storing 100t of fly ash (mixed with bottom ash) in a storage hopper and 300te of fly ash (mixed with bottom ash) on a ground storage with provision of a pay loader for feeding the storage hopper from the ground storage and provision of arresting foreign material in the system. Storing water at the plant site with adequate storage capacity. Top covering of both the storage hopper and ground storage. The ground storage area will be adjacent to the storage hopper/bunker. The system is to be so designed so as to prevent formation of rat-hole in storage hopper and the hopper should facilitate smooth flow of ash to the discharge end.

a.3 Conveying arrangement of ash from the storage hopper/bunker to the weighing arrangement for slurry preparation

a.4 Preparing slurry / mixture of fly ash and water with a provision of fly ash feeder & weighing arrangement for controlling the slurry consistency within **55 -70 %** by weight of dry fly ash and storing the slurry so prepared in a tank with continuous agitating facility to deliver a homogenous mixture of pre-defined consistency of **55-70%** by weight and quantity of average 60m^3 / hour.

a.5 Pumping capability of the plant will be average 60 m^3 per hour fly ash slurry with consistency within **55 – 70 %** by weight from surface to the underground voids for stowing with steady & controlled flow rate through a pipeline. The related slurry pump(s) will have to generate enough pressure head so as to deliver the fly ash slurry to the coal seams in a depth ranging from 135m to 230m with gradient 1in 3.7 to 1 in 3.9. Total pipeline distance will be about 2 km (approx.) having 4 to 5 nos. 90^0

bends. The accuracy of feed to the pipeline may be within + / - 10% of the rated capacity. **The provision of pipeline flushing / cleaning during major shut down will have to be provided. Arrangement for back-up power in the vital part of the plant will have to be provided**. The plant will have to pump about 1,40,500m^3 of slurry at a pumping rate of average 60 m^3 / hour & within 3300m^3 to 3900m^3 of slurry per week with 2 shifts / day & six days per week.

a.6 The total process & flow control will be handled by PLC alongwith front-end CRT display with an option for individual manual operation mode/control.

a.7 High Concentration Fly ash slurry stowing plant will operate with average 2 shifts/ day and 6 days / week working during the performance trial run.

a.8 All surface equipment will be grouped in modules and will be skid / frame mounted as far as practicable so that these can be transported easily from one site / mine to other.

a.9 All pollution control measures should be incorporated in the design & operating system of the plant. All dust control measures by a dedicated system at surface will be provided by the Supplier.

a.10 The pipes, valves, instruments, special hoses/gaskets/joints/fittings, anti-abrasive pipe lining /coatings, etc, as may be required for the stowing pipe-lines will be provided by the Supplier.

b) Performance Trial run of the plant.

b.1 After commissioning the high concentration fly ash slurry stowing system / plant at Madhuband Colliery, BCCL, the supplier will run the plant on performance trial basis for a period of **3 months continuously in I^{st} Phase and 6 months continuously in II^{nd} phase; total 9 (nine) months** for actual stowing purpose. The performance trial run of the plant will be divided into two phases. In the first phase 50,000 m^3 of ash would be stowed within a period of three months. Subsequently, monitoring of the packed void will be carried out for a period of three months by CIMFR and a report will be submitted to DGMS regarding the same. On successful completion of the first phase trial and after obtaining approval of DGMS for continuation of filling, the second phase of trial will commence. In this phase the remaining 90,500 m^3 of ash will be stowed within a period of six months. During the performance trial period of 9 (nine) months the plant will be required to pump about **1,40,500m^3** of slurry at a pumping rate of average 60 m^3 /hr & within 3300m^3 to 3900m^3 of slurry per week (2 shifts / day & six days per week). In no case, the performance trial run period will be reduced below 9 months.

b.2 During the performance trial run the supplier will provide the following data obtained from the plant trial run operation to the Institute:

b.2.1 The rate of packing of void with variation in depth of discharge.

b.2.2 Optimum ratio of fly ash and water by volume with regards to packing.

b.2.3 Consumption of wearable parts of the pump & other major equipment per 1000 m^3 of slurry pumped.

b.2.4 The direction of flow of slurry when it is allowed to flow freely at underground gallery junctions through the pipe line.

b.2.5 Void packing efficiency under the specific site conditions.

The frequency / time schedule etc. of supplying the above data will be mutually decided during execution of the work.

c) Supply of Data relating to effective operational stability of the High Concentration Fly ash slurry stowing Plant.

c.1 After award of work, during plant design and commissioning, the Supplier will have to furnish following data to the Institute

- Results of rheological study (rheograms), viscosity etc.
- Results of pipe loop test, if any, which includes parameters like flow rate (critical and maximum), head loss (pressure gradient), pipe diameter and material etc., pumping data (specific energy consumption, discharge pressure with corresponding rate) for slurry of different concentration (by wt), slump or viscosity etc.

2.0 Completion period:

Construction Time – 12 (twelve) months,

Performance Trial Run period – I^{st} Phase of 3 (three) months, followed by a study period of 3 (three) months and subsequently II^{nd} Phase of 6 (six) months.

Total - 24 months.

In no case, the performance trial run period will be reduced below 9 months.

3.0 The Supplier shall strictly adhere to the specifications laid down on section "**TECHNICAL SPECIFICATIONS**" in this document during execution of the work subject to modification by the Head of Department, Mine Stowing & Filling Department or his representative.

4.0 The **Pay Loader** for handling ash from ground-storage to storage hopper shall be of 2.3 cu.m bucket capacity and price shall be quoted separately in the price bid format.

5.0 Training and transfer of know how to Institute/BCCL personnel shall be undertaken by the Supplier during assembly, commissioning and also during performance trial run of the stowing plant.

6.0 FIRE FIGHTING SYSTEM:

For fire fighting, suitable arrangement, such as independent water distribution, pipelines, pumps, separate water storage tank etc. shall be provided. Different types of fire extinguishers as per requirement shall be considered for installation of all strategic points as per BIS.

7.0 Provision of **monorails** over equipment is to be made for maintenance purpose.

8.0 Construction of road, drainage and area grading / development for the plant is within the scope of the supply of the tenderer as per specifications mentioned in the "Technical Specification" Section.

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

The Supplier while executing the purchase order must adhere to the following specifications / requirement subject to modification by the Head of Department, Mine Stowing & Filling Department or his representative.

1.0 All equipment, structure, pipelines, etc. shall be painted with adequate nos. of coatings as per relevant BIS/ISO standards.

2.0 The plant, machinery, equipment and their component parts shall be of 'proven' and reputed make and comply with the relevant Indian standard specifications wherever they have been laid down up till now in other cases they shall comply with the equivalent internationally accepted standards like British / American / DIN etc. with necessary modifications as applicable to Indian condition. The plant, machinery, equipment etc. may be accepted by the Institute on individual merit.

3.0 The planning and design of the high concentration fly ash slurry stowing plant shall be amply reliable, efficient and economical. Every equipment and machinery to be supplied by the Supplier to fulfill the requirements of the proposed fly ash slurry stowing plant shall be specified clearly giving size, capacity, make, materials of construction and other details. Sufficient number of standby equipment shall be provided for all strategic units. As far as applicable, units shall be such as to enable interchangeability with the other units and thus reduce the quantity of spares requirement subject to the condition, however, that these shall be of adequate capacity and size for the duty involved.

4.0 The feeder(s), belt conveyors and piston pump should be provided with variable speed drives with minimum 30 percent variability on the negative side.

5.0 If during actual construction, change in soil strata is encountered, design and construction of the foundation etc. shall be modified accordingly by the Supplier without any extra cost. Excavation in all kinds of soil / rock and their leads and lifts and back filling as per approved design requirements with all leads and lifts are included in the supplier's scope of work.

6.0 Structural steel, reinforcement steel and cement shall be of tested quality. Concrete cubes shall be taken regularly as directed by the Engineer and tested. Other construction materials like bricks, sand, road metal, stone chip, paints, etc. of approved standard quality and strength as well as fasteners shall also be arranged by the Supplier.

7.0 All materials, which may be offered for use in the works shall be of first class quality and of such kind as is generally used for first class work conforming to the latest BIS Code.

8.0 All welding shall be carried out in the best and most modern practice if not otherwise specified, in accordance with the latest relevant BIS Codes. All welding shall be strictly in accordance with the details shown on the approved drawings.

9.0 All measurements, dimensions, weight, etc. shall be indicated in metric system.

10.0 Preparation of welding edges shall be carried out by machine grinding or flame cutting. Machine and manual flame cut edges shall be substantially smooth, regular and free from grooves and slot.

11.0 All surface equipment will be grouped in modules as far as practicable and will be skid / frame mounted so that these can be transported easily from one site / mine to other.

12.0 Due to **railway and bridge limitations**, the dimensions of each individual equipment module / package to be shipped / transported shall be limited to the inside measurement of standard box container, i.e. length = 5.8m, width=2.3m, height =2.25m, weight = 18 metric ton. Mention shall be made by the bidders if otherwise is proposed for any equipment module. The equipment supplied under the contract may be delivered in a P-K-D (partly knocked down), C-K-D (completely knocked down) or assembled condition provided that the maximum size does not exceed the above mentioned limit.

13.0 The Supplier shall also include such information as the future availability and source of spare parts, consumables and standard components (mechanical & electrical /control/ instruments) used with the equipment / plant for ensuring adequate and regular supply of such spare parts even after the expiry of the contractual period.

14.0 **INSTALLATION AND ERECTION** :

a. All the mechanical / electrical equipment installation will be under the supervision of an experienced, competent and qualified engineer in the line.

b. All installations of mechanical / electrical equipment along with its accessories and materials shall conform to the relevant current Indian Standard specification and code of practice. Where no Indian specifications are available same shall conform to BIS/DIN/US/Equivalent International Standards or generally accepted sound engineering practice.

c. All the mechanical / electrical equipment associated in the system will be provided with sufficient space around in for easy approach to the equipment

and for ease of operation, maintenance and inspection.

d. All the mechanical / electrical equipment along with its accessories will be properly secured with proper locking arrangements and other means to minimize noise and vibration of the equipment and its different components.

e. All the equipment will be provided with proper safety enclosures with sufficient moving space and all the rotating parts will be covered by suitable enclosure / safety guards.

15.0 **BROAD SPECIFICATION FOR ELECTRICALS** are given below**:**

15.1 **POWER SUPPLY:**

Power is proposed to be supplied at 6.6 KV to the Supplier for the proposed Fly Ash Stowing Plant at Madhuband Colliery. The Supplier shall have to tap power from the nearby 6.6 KV pole. The step down transformers (indoor type) are to be provided with required incomers and outgoing breakers for operating the equipments at 433V. Outgoing terminals of breakers will also have energy meter for recording energy consumption in the plant. The **sub-station building has been already constructed**. Further distribution shall also have to be done by the Supplier. The system shall have to be designed by the Supplier in accordance with IS specifications and complete with necessary protections as required. Supplier shall have to house various equipments in electrical / plant building. Its floor shall have to be at least about 300mm above the plant floor level. The power to various equipments shall be through MCC(s) of suitable rating. The stand-by power to the vital units should be fed through a second incomer to the MCC(s) with provision to isolate the other units. All motors maximum upto 160KW will be of 415V. However, no HT drive has been considered in this scheme.

In order to ensure a standard power factor of 0.95, bank(s) of 415V capacitors with automatic switching on/off arrangement for the correction of power factor in stages through suitable type of correction relay have been envisaged. The design, manufacturing and testing of capacitor banks shall comply with relevant IS specifications.

15.2 **CONTROL SCHEME:**

Tenderer shall have to design the control scheme for the proposed plant with PLC system which shall be housed in a Control Room wherefrom operations of the plant shall be controlled. The Control Room shall be complete with window type air conditioner of suitable capacity. The Control Room and the MCC Room shall be adjoining to each other on the same floor.

The centralised control shall have to ensure the optimum operating conditions with required automation for the plant for optimum stowing of the ash in the underground mine.

15.3 **COMMUNICATION:**

The following communication systems are proposed to be put in place to ensure efficient operation of the proposed plant:

a) Administrative and service telephonic communication between operating personnel in the proposed plant, the underground and pit-top office. The equipments to be used in the underground shall be as per DGMS specifications.

b) Hand held high frequency walkie talkie sets are also proposed to be provided to key executives and supervisors for quick and effective communication.

15.4 **ILLUMINATION:**

Adequate level of illumination as specified in the relevant IS specifications has been envisaged in the plant areas for both inside and outside (in the immediate vicinity of the plant.) The lighting system with high pressure sodium vapour fixtures (high bay fixtures wherever required as per layout) shall be fed from 3 phase-4 wire main lighting switch board which shall be fed LT power from a 433 / 400V lighting transformer with necessary protections.

Lighting of the existing roads, stores, workshop, office etc. has not been envisaged in this scheme.

Independent emergency lighting arrangement through a bank of sub-station duty batteries (with battery charger) and corresponding independent fluorescent lighting fixtures at strategic points with automatic on / off arrangements has been envisaged for the plant. However, the lighting of the underground system, pathways / galleries associated with this system is not included in the scope of the tenderer.

15.5 **EARTHING:**

Grounded neutral shall be adopted for the for the purpose of earthing of the proposed plant. The earthing system will conform to IS-3043 and will be in accordance with IE Rules with neutrals of the transformers connected separately and solidly by two separate and distinct earthing conductors to independent earth pits. Frame of every transformer, motor and other electrical apparatus used for high, medium as well as low voltage accessories shall be earthed by two distinct and independent conductors (in addition to cable armouring where there are cable connections). The proposed plant building shall be provided with lightning

arrestors with independent earthing pits and grid as per IS specifications. GI wire wherever used for earthing shall be terminated through lugs only. The earthing systems for transformer neutral, lightning protection and general earthing of equipments shall be totally independent of each other. The size of the earth electrode shall not be less than 100mm dia., 3.5 m. length and of heavy duty G.I. pipe.

15.6 **CABLES & CABLE ACCESSORIES :**

Aluminium conductor cables will be used for all equipments / accesssories in the plant for all voltages except where a cross-section required will be less than 4 sq. mm. In such cases where cross-sectional area will be less than 4 sq. mm size, solid copper conductor cables will be used. This will include cables used for the control circuits as well, size for which shall be not less than 2.5 sq. mm. PVC cables shall be used for LT and control circuit. All cables shall conform to the relevant IS specifications.

All cable terminations shall be done using cable lugs and double compression nickel plated brass cable gland only. Cable end boxes, junction boxes, cable markers, cable identification tags, cable protection pipes shall also be utilised. During cable selection, cable sizes shall be derated in accordance with the layout condition and ambient temperature of 50^0C. All cables shall be laid in single layer over cable trays, in trench as required as per IS specifications. Separate trays shall be used for LT / lighting and control cables. The cables shall be neatly clamped on the trays.

15.7 **MOTORS:**

All motors shall be continuously rated, squirrel cage, TEFC, induction type with class ‘B’ insulation, high torque, suitable for 3 phase, 50 cycles/sec, 415V power supply & conform to relevant IS specifications. The motors shall be horizontal foot mounted type. They shall be suitable for direct-on-line starting or assisted starting as required. All motors shall be with IP-55 enclosure and have cable entry for PVC insulated, PVC sheathed armoured cable with aluminium conductor. The motors with only standard frame size shall be used. Space heaters suitable for 240V, 50Hz single phase supply system shall be provided for motors of 90KW and above capacity. For motors below 90KW, space heater shall be required if it is meant for use in damp areas.

15.8 **SAFETY APPLIANCES:**

Safety appliances like hand gloves, discharge rods, caution boards (for 415V), rubber mats, shock treatment charts, fire extinguishers, fire buckets at all places

like sub-station, MLC room(s), MCC room(s), control room(s) etc. required as per IE Rules have been envisaged for the proposed plant to ensure complete safety of operation & maintenance personnel.

15.9 **POWER POINTS FOR WELDING, HAND LAMPS & MACHINE TOOLS FOR MAINTENANCE AT SITE:**

Suitable no. of 3 phase, 4 wire 100 amps, 415V rating welding plug & sockets with protective fuse and controlling switches; 5/16 amps, 230V with neutral and earth single phase power points / sockets with controlling switches have been envisaged for the proposed plant.

15.10 **MOTOR CONTROL CENTRE (MCC):**

The new MCC(s) considered for the proposed plant shall be of single front drawout type, of suitable rating for 3 phase 415V system and conforming to the relevant IS specifications have been considered. The incomer to the MCC shall be through drawout type air circuit breaker with necessary protections. Suitable no. of motor feeders of adequate ratings as required per layout and having isolator, HRC fuses, contactor, overload relay, SPP, interlocking relay etc. and a few vacant cubicles of different sizes shall be considered. The MCC(s) shall conform to IP-54 degree of protection and shall be as per the provisions of the various IS specifications. Its bus-bars and supports shall be designed to withstand thermal and magnetic stresses corresponding to 50KA fault level for one second. All internal control wirings shall be with 660V grade PVC solid copper conductor of 2.5 sq.mm. size. The wiring shall be complete with engraved plastic ferrules. The fuses in the motor feeders shall be suitably time lagged for motor duty operation. The MCC(s) shall have two nos. of suitability rated 415V / 110V control transformers – one operating and one standby. The MCC room and control room shall be side by side on the same floor. The floor levels of all the new electrical rooms shall be about 300 mm above the industrial floor.

15.11 Entire electricals (supply as well as erection) shall be conforming to Indian Electricity Rules and the relevant Indian Standard specifications. Provision as per DGMS Rules as applicable shall also be adhered to. Ambient temperature of 50^0 C is to be considered for design.

16.0 **BROAD SPECIFICATION FOR CIVIL WORKS** are given below:

16.1 Storage Hopper shall be of MS construction. Covering should be done with side open structural CGI Sheeting roof shed.

16.2 Ground storage of ash having capacity of 60 m^3 shall have brick paving with side open 1 mm thick CGI sheeting shed including louvering arrangement as per

requirement of site.

16.3 Ramp (if required) shall be min. 7m wide and with a max. gradient of 1:15.

16.4 HCFASS Plant is to be provided with Side open CGI sheeting shed of minimum 1mm thickness, along-with 5 ft high brick cladding including cement plaster at sides. Cemented concrete floor (1:2:4) including neat cement finish over a required thickness of ordinary cement concrete (1:3:6) 75 mm thickness should be provided all around. The bricks used for all the above mentioned work should be of Ist class quality.

16.5 Construction of access / service Road to High Concentration Stowing Plant and ground storage facility for ash, Drainage and Area grading/development for the Plant is within the scope of work of the Tenderer with the following specification:

16.5.1 **Road**: 3.35 m. wide single lane with bituminous pre-mix surface.

The road crust structure shall be of W.B.M. construction with bituminous topping. The thickness of crust shall be designed on the basis of class A loading and actual CBR value of sub-soil. The offered specification and thickness shall not be less than the specification as given below, the laying procedure of the roof is as per IS standards:

S. No	Item	Thickness
1.	Bituminastic sheet with paving asphalt 30/40.	4 cm.
2.	WBM base course with stone aggregate 63 mm to 40 mm size.	15 cm.
3.	WBM sub base course with stone aggregate 90 mm to 40 mm size.	18 cm

16.5.2 **Surface Drainage**: Surface drainage should be provided as per site requirement.

Brick masonry open surface drain of width 22.5 cm and depth 30 cm with bricks of class designation 75 in cement mortar 1 : 4 (1 cement : 4 fine sand) including earth excavation, 10 cm thick bed concrete 1 : 4 : 8 (1 cement : 4 fine sand : 8 graded stone aggregate 40 mm nominal size) and 25 mm thick cement concrete 1 : 2 : 4 (1 cement : 2 course sand : 4 graded stone aggregate 12.5 mm size) for filling haunch including 12 mm thick cement plastering (1 cement : 4 course sand) with a floating coat of neat cement inside the drain, its top and exposed side including disposal of surplus earth as required complete.

16.5.3 **Development of Land**: Required area is to be indicated by the Tenderer.

16.6 **MCC-CUM-CONTROL ROOM:**

The construction will be of RCC with brick work in cement mortar 1:1. PVC flooring of 2mm thickness for Control room and 2mm thickness of rubber mat for MCC

room over the cement concrete floor and brick work. Both rooms should be built side by side on same floor. Floor level will be 300mm above industrial floor. Wall should be cement plastered in 1:6, Wall and ceiling will be painted in oil bound distemper (3 or more coat over prime coat after applying Plaster of Paris of 1mm thickness. The control room will be provided with air conditioner of suitable capacity. The floor area of both the room are to be indicated in the bid .

16.7 **Conveyor Gantry**: the belting should be covered, the walk way width should be minimum 700mm and the walk way floor should be minimum 6mm chequered plate.

16.8 **Materials and Workmanship Specification**

16.8.1 **Cement**

Cement shall be either ordinary Portland cement conforming to IS: 8112-1989 or Portland Blast furnace slag cement conforming to IS: 455-1989. It shall be fresh and fit for use.

16.8.2 **Stone Aggregates**

The aggregates shall be obtained from crushing of sound stones and the physical quality in respect of size, gradation and strength shall conform to the provision of IS: 383-1970.

16.8.3 **Fine Aggregates**

Fine aggregates (sand) shall be either river sand or pit sand and the quality shall conform to the provision of IS: 383-1970. The preparation, placing and curing of concrete shall conform to the provision of IS: 456-1978.

16.8.4 All other works not mentioned herein shall be carried out as per provision of latest IS codes.

16.8.5 **STRUCTURAL WORKS**

16.8.5.1 **General Description of Structures**

The following gives only general description of structural units. The structural works shall not be limited to these but shall be guided by technical/technological aspects for the total scope of the work. Working platforms at different places depending on requirement should be provided

16.8.5.2 **Technical Specification**

16.8.5.2.1 **Design parameters**

The steel structures envisaged here shall be designed as per IS: 300-1984 Superimposed loads shall be considered in accordance with IS: 875-1987 in addition to technological loads. Buildings shall be designed for wind loads. Wind load on structures shall be considered as per IS 875-1987. All

structural steel work shall be of welded construction.

16.8.5.2.2 **Materials**

i)Structural steel

All structural steel shall be of tested quality. Mild steel shall conform to IS: 2062, Gr.A - 1992 for rolled sections and plates up to 20mm thickness or IS: 2062, GRB -1992 for plates and sections above 20mm thickness. Mild steel used in gutters and collector pipes shall conform to IS 2062, GR.A - 1992, copper bearing quality. Medium or high tensile steel shall conform to IS: 8500- 1992. Roof shall be in galvanized corrugated steel sheets conforming to IS: 27- 1992 and the fasteners shall conform to IS:730 -1978.

The Supplier shall submit test certificate conforming to appropriate standards of all steel materials used for fabrication. All structural steel shall be free form rust, scales, lamination, cracks, fissures and other surface defects.

ii) Welding

The welding and the welded work shall generally conform to IS: 816 – 1969 and IS: 9595 - 1980 unless otherwise specified. As much work as possible shall be welded in shops and the layout and sequence of welding shall be so arranged as to eliminate distortion and shrinkage stresses. Electrodes shall conform to IS: 814 - 1991.

iii) Painting

All the fabricated and erected structures shall be duly inspected and shall be made defect free. All fabricated structures shall receive two coats of approved make red oxide zinc chromate primer as per IS: 2074 - 1992 and the finishing paint on erected structures shall be a minimum of 2 coats of aluminum paint conforming to IS: 2339 - 1963 or synthetic enamel paint conforming to IS:2932 - 1993. Care is to be taken in painting the structures, which are subjected to corrosion and rusting.

iv) Fabrication, Erection, Testing and Commissioning

Fabrication, erection, testing and commissioning of steel structures shall be in accordance with IS: 800- 1984 & IS: 215 -1974.

17.0 **MAKE OF EQUIPMENT**

All the equipments and the accessories quoted for the supply of the Plant shall be of **reputed make as approved by the Institute**. Tenderer is to indicate the make of the equipment in the Bid. However, the Institute is to be satisfied with the furnished evidence and justification in support of the performance of any such particular ‘make’ of equipment quoted by the tenderer.

18.0 **The complete technical specifications with description of mechanical, electrical and instrumentation equipment should be furnished in the following format**:

i) Provision of arresting foreign material before the storage bunker/hopper inlet.

ii) Storage bunker / hopper

(a)	Capacity of bunker / hopper (t)	100
(b)	Material of construction	MS
(c)	Any other features	To be provided
(d)	Liner (type & thickness)	To be provided

iii) Ground Storage

(a)	Type	To be provided
(b)	Nos	To be provided
(c)	Capacity (t)	300
(d)	Any other features	To be provided

iv) Pay Loader for Re-handling

(a)	Nos	1
(b)	Bucket Capacity (m^3)	2.3
(c)	Any other features	To be provided

v) Fly ash feeder/ discharge at bunker outlet-

(a)	Type of discharge / feeding	To be provided
(b)	Nos.	To be provided
(c)	Material of construction	To be provided
(d)	Capacity of discharge / feeding, tph	To be provided
(e)	Motor kw, RPM	To be provided
(f)	Any other features	To be provided

vi) Conveying fly ash from hopper to mixing tank

(a)	Type	To be provided
(b)	Nos.	To be provided
(c)	capacity, tph	To be provided
(d)	Lift, m	To be provided
(e)	width, mm (if belt used)	To be provided
(f)	Speed, (m/s)	To be provided
(g)	Motor kw, RPM	To be provided
(h)	Any other features (details if belting used)	To be provided

vii) Provision of fly ash feeder & weighing arrangementt.

(a)	Type of feeder	To be provided
(b)	Nos.	To be provided
(c)	Capacity, tph	To be provided
(d)	Motor kw, RPM, efficiency	To be provided
(e)	Weighing arrangement type	To be provided
(f)	Nos.	To be provided
(g)	Weighing arrangement capacity, tph	To be provided
(h)	Any other features	To be provided

viii) Water pumping for slurry preparation

(a)	Nos.	1 operating +1 stand by
(b)	Capacity, cum/hr	To be provided
(c)	Head (m)	To be provided
(d)	Motor type kw, RPM, efficiency	To be provided
(e)	Duty	Continuous
(f)	Max Part. Size.-mm	To be provided
(g)	Any other features	To be provided

ix) Continuous Mixing system.

(a)	Nos.	To be provided
(b)	Material of Construction	To be provided
(c)	Capacity, cum/hr	To be provided
(d)	Motor type kw, RPM, efficiency	To be provided
(e)	Mixer flushing arrangement	To be provided
(f)	Any other features	To be provided

x) Slurry retention tank and agitator

(a)	Type of tank	
(b)	Nos. of Slurry retention tank	To be provided
(c)	Type of Slurry agitator , motor rating etc.	To be provided
(d)	Nos of Slurry agitator	To be provided
(e)	Capacity of tank (m^3)	To be provided
(f)	Material of Construction of tank	To be provided

xi) High Concentration Piston Pump

(a)	Nos.	
(b)	Capacity,	To be provided
(c)	Head, m	To be provided
(d)	Slurry density	To be provided
(e)	Motor , kw, RPM, efficiency and avaibility	To be provided
(f)	Duty	Continuous
(g)	Max Part. Size.-mm	To be provided
(h)	HC slurry Pump flushing arrangement	To be provided
(i)	Suction strainer type & Nos.	To be provided
(j)	Pulsation damper type & Nos.	To be provided
(k)	Discharge pressure	To be provided
(l)	Capacity	To be provided
(m)	Part usage Rate	To be provided
(n)	Make	To be provided
(0)	Any other features	To be provided

xii) Delivery Pipe Range (Slurry)

(a)	Pipe length	2 Km
(b)	Pipe Diameter(internal & external) (mm)	To be provided
(c)	Pipe material	To be provided
(d)	Pipe support	pedestal type
(e)	Any other features	To be provided

xiii) Pipe Range (water)

(a)	Pipe length	To be provided
(b)	Pipe Diameter(internal & external) (mm)	To be provided
(c)	Pipe material	To be provided
(d)	Pipe support	To be provided
(e)	Any other features	To be provided

xiv) Fire Fighting System

(a)	Type	To be provided
(b)	Nos	To be provided
(c)	Make	To be provided
(d)	Motor kw	To be provided

xv) Dust Control System

(a)	Types	To be provided
(b)	Nos.	To be provided
(c)	Capacity, cum/hr	To be provided
(d)	Head, m	To be provided
(e)	Motor kw, RPM	To be provided
(f)	Max. particle size	To be provided
(g)	Any other features	To be provided

xvi) Back up power(Plant)

(a)	Nos	To be provided
(b)	Type	To be provided
(c)	Capacity (KVA)	160
(d)	Make	To be provided
(e)	Ratings	To be provided

xvii) Back up power(PLC)

(a)	Nos & Type	To be provided
(b)	Capacity (KVA)	To be provided
(c)	Make	To be provided
(d)	Ratings	To be provided

xviii) Plant Control

(a)	Nos	To be provided
(b)	Type	To be provided
(c)	Make	To be provided
(d)	Ratings	To be provided

xix) Instrumentation (surface)

(a)	Nos	To be provided
(b)	Type	To be provided
(c)	Make	To be provided
(d)	Ratings	To be provided

xx) Communications

(a)	Nos	To be provided
(b)	Type	To be provided
(c)	Make	To be provided

xxi) Any other equipment like monitoring devices (**pressure transmitter/transducer**, **rehometer, densitymeter etc.)**

TERMS AND CONDITIONS

OF SUPPLY

GENERAL TERMS AND CONDITIONS

PART - I

1. **Submission of Tenders:** Sealed tenders must be submitted in an envelope duly super scribing "Tender/File Ref.No., Description of item and Date of Opening" addressed to Director. Central Institute of Mining & Fuel Research, Barwa Road, Dhanbad - 826001 JHARKHAND, INDIA in the Tender Box kept in the Office of the Stores & Purchase Officer, CIMFR, **upto 1.00 PM (IST) on --.0-.2009 positively. Request for extension of** submission date of tenders will not be considered.

2. Late/delayed **tenders:** Late/delayed tenders due to any reason whatsoever will not be accepted / considered at all under any circumstance.

3. **Opening of Tenders:** The tenders received will be opened at **03.30 P.M.** on **--.0-.2009** in the presence of the authorised representatives, if any, of quoting firm (one member only) at this office. **Request for extension of** opening date of tenders will not be considered.

4. **Earnest Money Deposit:** Tenderers shall have to deposit EMD of amount mentioned in our Global / Open Tender Notice in **Indian Rupees** or in equivalent amount in foreign currency in the form of Crossed Demand Draft/BG only in favour of Director. CIMFR, Dhanbad, issued by Scheduled/Nationalised Bank payable at Dhanbad, India, with a validity period of 180 days along with their tenders (with Technical Bid only).**Tenders received without earnest money will not be** entertained/ considered at all and rejected summarily. Tenders received along with EMD in the form of Cheque/Cash will not be accepted/ considered and rejected.

   Firms registered with DGS&D and NSIC may be exempted from payment of EMD if the stores being quoted is actually manufactured by them and the stores are registered with these agencies. Firms registered with these agencies selling products of other companies and not manufacturing the stores being quoted by them are not allowed exemption from payment of EMD. Firms are to submit a legible photocopy duly attested, of Registration Certification of the stores manufactured and registered with DGS&D and NSIC for availing EMD exemption before opening of Technical-Commercial Bids, otherwise tender submitted by them will not be considered and rejected summarily.

5. The EMD of the successful bidder will be returned immediately after satisfactory supply, installation, testing, commissioning, demonstration and final acceptance of the plant or may be adjusted with the Performance Bank Guaranty as per mutual understanding between the Institute and successful bidder.

6. **Validity of Tender:** The quotations shall be valid for a minimum period of **180(one hundred and eighty) days from the date of opening of tenders.**

7. S.T.Registration No./ITCC/Distributorship/Dealership/Service Provider Certificates: Tenderers must attach a legible photocopy of the following documents positively along with their tenders.

   i) CST/Local Sales Tax Registration Certificate,
   ii) Latest Income Tax Clearance Certificate.
   iii) AuthorisedDistributorship/AuthorisedDealership/AuthorisedRetailership/Authorised Service Provider Certificate from the manufacturers.

8. **Forfeiture of EMD:** The earnest money deposited (EMD) will be forfeited if the vendor withdraws or amends, impairs and derogates from the tender in any respect within the period of validity of tender or fails to furnish the Performance Bank Guaranty as per Clause No.1 (Part II of Terms and Conditions).

9. Tenderers should note that they should offer their best products pertaining to Technical specifications given.

10. Tenderers should clearly indicate whether they are Original Equipment Manufacturers or authorized distributors/dealers/suppliers on behalf of manufacturers. Brand names & Model Nos. of all equipments and components offered should necessarily be mentioned.

11. Tenderers should furnish the experience of their organization in the area of manufacturing and/or supply of similar equipment.

12. Tenderers should indicate the names (along with addresses, Telephone nos., Fax No., Contact person, dates of supply, etc.) of various Government, Public Sector Departments and other organizations where they have supplied and installed the similar equipments and are duly maintaining them.

13. Tenderers should furnish all details of Performance Certification/Bench marking of their Equipments by recognized National/International Institutes Govt. Organizations as applicable.

14. All prices shall be quoted clearly both in figures and words duly taking into account all concessions provided by the Govt. of India as on the date of tender. In case of discrepancy in Unit and Total prices, unit price shall be taken to be final price for the purpose of calculations.

15. Tenders incorporating additional conditions are liable to be rejected.

16. CIMFR is an R&D organization under CSIR, Ministry of Science & Technology, Govt. of India. Therefore it is requested to quote concessional rates applicable to the R&D organizations since the equipment is required for research purposes.

17. This Institute is eligible for payment of concessional customs duty under OGL Scheme. Actual User-Condition (Non-industrial-R&D institution).

18. Offers for stores vaguely described as "Best Indian Make", "Foreign Make" will be ignored while considering the tenders.

19. Details of Equipments supplied to CSIR Labs/Institutes: The tenderers who have supplied identical or similar equipment to other CSIR Labs/Institutions have to furnish the details of such supplies for the preceding three years along with the prices eventually or finally paid positively.

20. Complete details including final specifications of the equipments offered/quoted should be furnished along with brochures/literature mentioning all features with the offer (Technical Bid).

21. Tenderers should indicate whether they are the OEMs/. Authorised Distributors/Authorised Dealers/Authorised Retailer of the equipments offered and have valid license to sell Equipment.

22. **INDIAN AGENT'S COMMISSION:** If the Tenderer have any Agent in India, please indicate specifically whether the amount of agency commission payable to the agent is included in the FOB Price or not. **The Indian Agents Commission will be paid in Indian Rupees only within thirty days from the date of commissioning and final acceptance of the whole system by CIMFR, Dhanbad-826 001, India. The role played by the Indian Agents in rendering assistance to Tenderer's customers may also be specified**.

23. The tenders are liable to be cancelled if any of the conditions noted herein are not complied with. Hypothetical, ambiguous and conditional tenders will not be entertained at all and rejected summarily.

24. Every tenderer is expected before quoting his rates, to peruse the requirements of materials / workmanship under specification / requirements and condition of supply and to inspect the site / area of the proposed work. It shall be deemed that tenderer has visited the site / area and got fully acquainted with the working conditions and other prevalent conditions and fluctuation thereto, whether be actually visits the site /

area or not and have taken all the factors into account while quoting his rates. The rates quoted should be inclusive of all taxes, duties, incidentals, over-heads, leads, lifts, carriage etc., as may be attended upon execution and completion of the items.

25. Director, CIMFR reserves the right to accept or reject any tender in whole or in part thereof without assigning any reason.

GENERAL TERMS AND CONDITIONS

PART - II

1. Performance Bank Guarantee: (PBG)

   The successful Bidder may furnish an unconditional Performance Bank Guarantee valid up to sixty (60) days after the expiry of warranty period from a Scheduled/Nationalised Bank in India in favour of the Director, CIMFR, Dhanbad against the retention money i.e. 10% of the total order value, immediately after satisfactory supply, installation, testing, commissioning, demonstration and final acceptance of the plant.

2. **REFUND OF PERFORMANCE BANK GUARANTEE:** The Performance Security Deposit will be returned to the successful vendor after sixty days from the date of the completion of warranty period and no interest would be paid thereon.

3. **WARRANTY**: Equipments/Plant should be under free **ONSITE comprehensive warranty** for a minimum period of one year from the date of completion of satisfactory performance trial run and final acceptance (i.e. after twenty four months from commencement of delivery) of the products. A satisfactory service during the warranty period is defined as 95% uptime. In case 95% uptime is not provided, the warranty period would be extendable by a period which is equivalent to the period during which 95% uptime was not provided. The bidder will also ensure that the spares are available at least for three years after the warranty period for the operation and maintenance of the equipments supplied. **The firms giving the warranty offer less than one year must specify the equivalent amount to be charged for additional warranty/per year which will be added to the price quoted for deciding Lowest Tender. Failing to quote the same will lead to rejection of the bid. This must be strictly complied.**

4. **CUSTOM DUTY AND EXCISE DUTY:** Our Institution is eligible for payment of concessional Custom Duty and exempted from payment of Excise duty.

   a) In case of Imports, it must be on FOB price in Indian currency. Indian Agency Commission/Technical Service Charges, if any, must also be shown separately and shall be payable in India in Indian Rupees only. Kindly indicate Indian Agent's address, their kind of services and percentage Agency Commission (which will be reduced from invoice and paid in Indian Rupees Only). Also quotation should indicate whether Agency Commission is included / excluded in the FOB price. Also the CIF price must be quoted. The price for clearance of Customs and

transportation to our site must be quoted separately in the price bid. The rate should be FOR destination.

b) In case of Domestic, the offer should contain the basic price and percentage of Excise Duty separately since the Institute is exempted from payment of Excise Duty.

5. **PRICES:** The price quoted should clearly mention whether

a) FOR destination /Dispatching Station by registered road transport.

b) FOR free delivery at this office Stores including Packing & Forwarding, freight, insurance charges, etc.

c) Where there is no mention of the above, the offers will be rejected as incomplete.

d) In case of Imports, the quotation should be for FOB price only. Packing and Forwarding, Air/Ocean Fright, inland transportation, insurance charges are to be quoted separately.

6. **TAXES:** The percentage rate of sales tax, resale tax, duties/levies and any other charges etc, should be clearly indicated in the tender, wherever chargeable. The packing charges must be included in the rates. **CIMFR is not authorized to issue C/D Forms.** However, the concessional rate of central sales tax is admissible to Research Institutions from certain States is also applicable to this Institute and necessary Concessional Sales Tax Certificate will be issued. The supplier should submit documentary proof while claiming octroi, naka etc. charges.

7. **DELIVERY:** The Plant as a complete package is to be delivered on successful completion of performance trial run within or on 24th month of issue of purchase order.

8. **PAYMENT TO SUPPLIER:** Payment shall be made through an Account Payee cheque drawn on State Bank of India, Hirapur Branch, Dhanbad-826001, India within thirty (30) days from the date of submission of the bill. Bill(s) in triplicate duly pre-receipted with Rs. *1/-* revenue stamp will have to be presented for claiming payments.

9. **Liquidated Damages (LD): The LD clause of 01% per week subject to maximum 10% of the order value will be imposed on delay in delivery of the Plant**. The L.D may further be revised and enhanced as per the descretion of the Competent Authority, CIMFR on violation of the contractual terms of any form. Director, CIMFR reserves the right to go ahead with the procurement of ordered stores from any another supplier without giving any prior notice and cancel the

purchase order. In such case, any additional impact on CIMFR over and above that contained in the Purchase Order shall be recovered from the successful vendor from the payment to be made by CIMFR or any of the CSIR Labs. to them towards earlier supplies, EMD or otherwise.

10. Only legal and authorised copy of Software Packages with all original manuals, installation and performance guide, etc. complete in all respects are required to be supplied.

11. Equipment supplied will include all Operational and Maintenance Manuals, tutorials, reference manuals, installation and performance guide, etc. complete in all respects. Connecting cable and/or any other part/device which is essentially required for making the equipment operational is required to be supplied along with the equipment and no additional cost.

12. Tenderers will also indemnify CIMFR against all possible damage due to any Copyright violation by them.

13. Tenderers will replace equipments in toto, in case of any malfunctioning or other similar problems arise after supply of the equipment.

14. **RESPONSIBILITY:** The responsibility lies with the successful tenderer, if any damage or loss to the property of the Institute occurs while undertaking and executing the purchase order.

15. **SHORTAGE OF SUPPLIES:** Suppliers will have to make the good the shortages, if any, which is revealed after opening the packages. The Stores, which are spoiled/damaged during transit due to faulty packing will have to be replaced by the suppliers. The product should have warranty for workmanship, performance and service for a minimum period of twelve months from the date of acceptance of replacement of spares/parts during warranty period. The replacement should be done free of all costs including to and fro Air Freight, packing, forwarding and insurance charges.

16. **DEFECTS AND LIABILITY PERIOD:** Twelve months from the date of completion, installation and commissioning, performance trial run of the Plant as certified by CIMFR, Dhanbad, India.

17. **DAMAGE AND UNACCEPTED SUPPLY:** The material found to be damaged and declared rejected should be collected by the supplier at their own risks and costs within 21 days from the date of intimation by CIMFR, otherwise ground rent will

be **charged**.

18. Goods should not be dispatched until firm Purchase Order is received by the successful vendor.

19. **FACILITIES TO BE PROVIDED BY THE INSTITUTE/BCCL**.

Institute/BCCL shall provide the following facilities to the Supplier:

i) Land at site with approach. The location of the land / layout (surface and underground) of Madubhand colliery and approach road to the site are shown in Plate -1, 2, 3 & 4 of the Section "Tender Drawings".

ii) Fly ash (pond ash) will be supplied from the Chandrapura Thermal Power Station in trucks / tippers covered with tarpaulin at a rate to commensurate with the requirement of the plant with 2 shifts per day, 6 days per week working during the performance trial run period.

iii) Electrical power (as and when available from DVC) at 6.6 KV, 3 phase, 50Hz. AC mains at one point at the site for construction & performance trial run purpose at the prevailing rate of Barora Area, BCCL.

iv) A water tank of 4 lakh gallon capacity fed directly by UG main pumps is available for storage at surface. This water shall be used for making the fly ash slurry.

v) UG Stowing personnel which includes barricade erection/site preparation personnel, pipe fitter with helper

vi) Cap lamps & other safety equipment required in the UG.

20. **MOBILISATION ADVANCE :**

No Mobilisation advance will be given, except for the supply of Equipments and Machinery as per clause 21 (C1) mentioned hereinafter.

21. **TERMS OF PAYMENT:**

i) The Supplier may at intervals of not less than one month submit interim claims / bills for payment on account of work done. The minimum billing amount should not be less than Rs. 5 Lakhs The Supplier shall also submit the following simultaneously with the interim bills :

1. The quantum of work scheduled to be done during the period;
2. The quantum of work actually done by him and
3. The cumulative lag / surplus in work over the proposed schedule of works.

ii) The Engineer shall arrange for scrutiny and certification of the claim and forward them to the bill passing authority and ensure scrutiny and payment in an expeditious manner.

iii) All such payments would be of the nature of secured advance adjustable against the supply value. Cost of all materials, services etc. provided to the Supplier by the Institute for the execution of works and other dues accrued so far shall also be recovered from the on account bills.

iv) An amount shall be deducted from each and every interim bill at **10% (ten percent)** of the gross value of the bills as **Retention Money**, which may be released after completion of successful trial run of the plant against submission of a Performance Bank Guarantee of equivalent amount and valid upto sixty days after the completion of warranty period.

v) Notwithstanding anything stated above, no escalation whatsoever shall be payable for any work done after the stipulated completion date. Payments would be made by the Accounts Officer, CIMFR against interim bills endorsed on the bills by the Engineer / Authorised Representative.

A) Payment for Planning, Investigations, Designing & Engineering :

i) For Planning, System designs, Engineering designs, arrangements, layouts, instruments, process control systems etc. for High Concentration Fly ash Slurry Stowing plant as a whole 80% of the price of planning, investigation, design & engineering on approval by the Institute.

ii) 10% of the price upon commencement of performance trial run of the Plant.

B1) Payment for Civil & Foundation Works :

i) 80% of the price shall be due and payable upon presentation of Supplier's invoice /bills based on the works actually executed and duly certified by the Engineer of the Institute.

ii) 10% of the price upon commencement of performance trial run of the Plant.

B2) Payment for fabrication and erection of structural steel works, including sheeting etc.:

i) 60% of the price shall be due and payable upon presentation of Supplier's invoice /bills based on works **fabricated** and brought to site and duly certified by the Engineer of the Institute alongwith the certificate of quality of steel used.

ii) 20% of the price shall be due and payable upon presentation of Supplier's invoice /bills based on works erected and duly certified by the Engineer of the Institute.

ii) 10% of the price upon commencement of performance trial run of the Plant.

C1) Payment for Supply of Equipment and Machinery including electrical / communications / control / automation etc.:

i) Interest free 20% advance against submission of Bank Guarantee of equivalent amount from Indian Scheduled Bank may be considered for release after placement of order

ii) 50% of the price for supply of equipment and machinery against inspection of equipment at site and declared acceptable by the Institute.

iii) 10% of the price for equipment and machinery on erection and commissioning.

iv) 10% of the price upon commencement of performance trial run of the Plant.

C2) Payment for erection / installation and commissioning of plant & machinery:

i) 80% of the price shall be due and payable upon presentation of Supplier's invoice / bills based on works actually executed and duly certified by the Engineer of the Institute.

ii) 10% of the price upon commencement of performance trial run of the Plant.

D) Payment for performance trial run:

i) 80% of the price shall be due and payable upon presentation of Supplier's invoice / bills based on **performance trial run** actually executed and duly certified by the Engineer of the Institute.

ii) 10% of the price upon commencement of performance trial run of the Plant.

General :

Any sum due from Supplier on account of security deposits, issue of stores, secured advance, recovery of electric charges, rental etc., shall be deducted from the on account bills.

22. **TAXES ON PAYMENT TO SUPPLIER :**

Income Tax and all other any, which may be due shall be to the account of Supplier. The Institute shall make recoveries from payments as per the statutory requirements, as in force from time to time, and provide the Supplier with certificates of recoveries and remittances on this account.

23. **ESCALATION :**

As this is a short duration project, no escalation will be considered.

24. Obtaining of approval of DGMS, Pollution Control Board or any other statutory body in India if any will be the responsibility of the Supplier without any cost to the Institute.

25. **BREACH OF TERMS & CONDITIONS :**

In the event of failure to complete the works within the stipulated date/period as per the scope of work and specifications mentioned in the work order, and in the event of the breach of any of the terms and conditions mentioned in the work order, as mutually agreed, the Institute shall be entitled to exercise any option given hereunder.

a) to recover, from the Supplier as agreed liquidated damages, a sum not exceeding 1% of the supply value per month or part of a month during which the work remains incomplete. The aggregate of such compensation(s) shall not exceed 10% of the total supply value

or

b) to cancel the work order or a portion thereof, and if so, at the cost of the defaulting Supplier

or

c) the Institute may get the work or part thereof, which has not been completed by the Supplier, completed by any other agency, and also whenever under this Purchase order any sum of money is recoverable or payable by the original Supplier, the Institute shall be entitled to recover such sum by appropriating the same in part or in whole from any sum due or which, at any time thereafter, may become due to the said Supplier in this or any other supply. Should this sum be not sufficient to cover the full amount recoverable, the original Supplier shall pay the Institute on demand the remaining balance. The original Supplier shall not be entitled to any gain on any such work.

26. **SPARES AND TOOLS :**

A Commissioning spares :

a) The Bidder's price shall include the cost of commissioning spares to cover the replacement during commissioning and subsequent operating period of the plant till completion of the performance trial run. The spares left over after the performance tests will be handed over to the Institute free of cost. For all the fast wearing parts such as rubber ring, rubber seal etc. sufficient sets of spares will be included in the list of commissioning spares. Any additional spares over and above this list required for commissioning shall be provided by the Supplier free of cost to the Institute.

b) Commissioning spares for imported items (if applicable) shall be procured along-with original equipment, and offers for the spares will be obtained along-with the offer for original equipment.

c) The cost of imported (if any) and indigenous commissioning spares will be included in the quoted price.

d) A complete list of all the commissioning spares indigenous as well as imported (if any) proposed to be supplied at site within quoted price, shall be submitted by the Bidder alongwith the Tender in Part I. The list will be treated as indicative to the extent that any other spares not contained in the list but necessarily required during commissioning, shall also be supplied by the Supplier at no extra cost to the Institute.

B Supply of Tools and Tackles :

The Supplier shall undertake to supply to the Institute all tools and spares required for operation and maintenance of the plant & equipment supplied by him throughout its life span at reasonable price.

27. **PACKING MARKING & DESPATCH :**

A Packing :

i) The Supplier shall provide for securely packing and protection of equipment so as to avoid damage or loss during storage and transport by rail / road / sea.

ii) Each package shall contain a Packing Note quoting the name of the Supplier, number and date of order, name of office placing the order, nomenclature of stores, drawing reference, number of items in the package etc.

iii) The Supplier shall be entirely responsible for loss, damage or depreciation to the stores due to faulty protection or insecure packing or for any other case whatsoever.

As soon as the stores are dispatched the Supplier shall send advance information by way of telex / Fax telegram to the Engineer with confirmation copies by post to the Engineer. The Supplier shall be solely responsible for taking delivery of the stores from Railway / Transporters and transporting the same to site at his cost.

B Marking :

All packages shall be marked in English as per instruction given in capital letters:

Director, CIMFR, C/o Project Officer, Madhuband Colliery, Barora Area, BCCL.

Order No. :

Supplier's Name :

Case No. :

Gross dimensions in mm. Gross & Net Weight in Tones. Brief description of contents with drawing reference. Suggested sling marks. Top side of the case and other particulars.

C Despatch :

All materials are to be despatched by rail (or lorry if so advised by the Engineer) and consigned to: Director, CIMFR C/o Project Officer, Madhuband Colliery, Barora Area, BCCL.

28. **INSPECTION, TESTING & TAKING OVER :**

A Inspection & testing during manufacturer / site work:

i) The Institute or its duly Authorised Representative, shall have at all reasonable times access to the Supplier's premises or works and shall have the power at all reasonable items to examine, inspect and call for tests of the materials and workmanship during the manufacture and assembly in the Supplier's premises of works. If a part of the plant, is being manufactured not at Supplier's premises but at other premises, the Supplier shall obtain for the Institute or its duly authorised representative permission to examine inspect or test as if the equipment were being manufactured at Supplier's own premises. The cost of all the above said tests and any other tests shall be borne by the Supplier.

ii) The Supplier on being requested shall present sufficient documentary evidence that the materials used in the manufacture of the equipment will meet the specification, requirements. With respect to materials used for construction of the plant and equipment such as structural steel, mild steel, cast iron, cast steel, etc. or special materials like alloy steel, bearing materials etc. the Supplier shall produce requisite test pieces on which tests were carried out by the manufacturer at the time of examination. With respect to large casting or forging or critical structural joints the Supplier shall arrange for necessary X-ray and ultrasonic tests to be carried out at his own cost. Such test shall be carried out free of cost to the Institute and should the Supplier himself be not in a position to carryout the test, he shall arrange to get these tests done by Government approved test house and the cost for such tests shall be to Supplier's account.

iii) The Institute or its duly Authorised Representatives shall have the right to be present at all test carried out and arranged by the Supplier, if called for. Samples and specimens shall become the Institute's property.

iv) The Supplier shall in writing notify the Engineer in an appropriate manner as to the progress of the contract particularly before any assembly in order that the inspections or tests can be carried out as may be required to ascertain without in any way affecting the Supplier's liability, whether the materials and / or services are in conformity with the requirement of the contract.

v) The Supplier shall give reasonable notice in writing together with his own inspection report as may be acceptable to the Engineer but not less than fifteen (15) days in advance of any material being ready for testing or inspection specifying the period likely to be required for such testing and the Engineer or his Authorised Representative shall (unless the inspection or the test in writing is voluntarily waived by the Engineer), on giving 24 hours previous notice in writing to the Supplier to attend at the Supplier's or sub-Supplier's works as the case may be, attend and witness the testing as soon as possible from the date on which the materials are notified as being ready for testing or inspection, failing which visit the Supplier shall proceed with the tests and shall forthwith forward to the Engineer duly certified copies of the reports.

vi) In all cases, where examination, inspection and testing are to be carried out whether at the premises of Supplier or sub-Supplier, the Supplier, except where otherwise specified, shall provide, free of charges to the Engineer, such labour, materials, electricity, fuel, water, stores, apparatus and instruments as may be reasonably required to carry out efficiently such tests of the equipment in accordance with the Supplier and shall give facilities to the Engineer or his Authorised Representative to accomplish witness such testing.

vii) When the tests have been satisfactorily completed at the Supplier's or sub-Supplier's work, the Engineer shall forthwith issue a certificate to that effect. If a final test certificate cannot be issued, a preliminary or provisional certificate shall be issued, if the tests were not witnessed by the Engineer or his representative, the certificate shall be issued on receipt and scrutiny of the test report from the Supplier but not latter than fifteen (15) days after the receipt of the test report by the Engineer. No equipment shall be assembled or painted with prime coat or dispatched before such certificates have been issued. The satisfactory completion of these tests or the issue of the certificates shall not bind the Engineer to accept the equipment should, if on further tests, after erection be found not be comply with the contract.

B Taking over :

a) As soon as the works have been completed in accordance with the Purchase order (except in minor aspects that do not affect their use for the purpose for which they are intended) and have passed the tests on completion of performance trial run, the Engineer shall issue a certificate thereof called a provisional acceptance certificate, in which he shall certify the date on which the works have so completed and have passed the said tests and the Institute shall deemed to have taken over the works on the site so certified, but the issue of a provisional acceptance certificate shall not operate as an admission that the works have been satisfactorily completed in every respect.

b) The various units of the plant shall deemed to be taken over by the Institute after the provisional acceptance. Taking over in no way relieve the Supplier of his obligation under the Purchase order. “Taking Over” means only physical custody.

29. **Preliminary Acceptance** :

As soon as the erection of a unit of equipment alongwith all associated auxiliary facilities is completed, the Supplier shall at his risk and cost notify the Institute in writing of the proposed date of commencement of preliminary acceptance tests after getting himself satisfied about the same. The Institute may jointly with the Supplier’s representative proceed with the preliminary tests (duration not exceeding 5 days), which are to prove that the unit has been COMPLETELY DELIVERED, PROPERLY ERECTED AND IS FIT TO BE OPERATED FOR PERFORMANCE TRIAL RUN. As soon as the tests have been carried out and results are found to be to the satisfaction of the Institute, then Institute will issue a certificate of preliminary acceptance.

a) The Supplier shall be responsible for supplying all labour, testing equipment and associated materials for any test to be carried out at site.

b) Supplier shall supply all consumables such as lubricants, grease, hydraulic fluids, chemicals, paper etc. required during the start up, for the first fill & during performance trial run. However, Supplier shall furnish the specification including equivalent brand names and quantities of all consumables sufficiently in advance for subsequent use.

30. **Performance Trial Run and Provisional Acceptance** :

i) On completion of satisfactory start up operation and preliminary acceptance, the Supplier shall start the performance trial run. The Supplier shall notify the Institute in writing of the proposed date of commencement of performance trial run one month before the date of proposed trial run. Every item of stowing equipment as

well as the stowing plant as a whole shall undergo performance trial run for the period mentioned elsewhere in this document. Under no circumstances, the trial run period will be reduced below the specified period. The manpower for demonstration of performance trial run shall not be more than the strength of normal operation recommended by the Supplier and accepted by Institute.

ii) During the performance trial run the plant will be under the supervision of the Supplier.

iii) The stowing plant shall be deemed to have concluded the performance trial run satisfactorily if during the entire duration of trial run the stowing plant has delivered the guaranteed specified output and operated at guaranteed specified capacity, utilising quantity and quality of materials, utilities, fuel and supplies as mentioned in this document & as guaranteed by the Supplier if any.

iv) On satisfactory completion of the performance trial run of the stowing plant, the Institute will normally issue a provisional acceptance certificate provided that the Supplier undertakes to rectify the defects if any, which do not influence normal operation but which are nevertheless present in the stowing plant and which are indicated in writing by the Institute at the earliest possible time. Such certificate, however, shall be deemed to be on account, and shall in no way release the Supplier from his liabilities and responsibilities in respect of the plant as a whole. In special circumstances and at the Institute's discretion, Provisional Acceptance Certificate may be issued for a part of the stowing plant.

31. **Final Acceptance** :

i) Final acceptance certificate of the plant as a whole will not be issued until proof is rendered of satisfactory integrated operation i.e. to say, that the plant is capable of giving the guaranteed performance and output as stated in this document.

ii) Until such time as the supply of drawings, documents, and information required are completed, Institute will not issue the final acceptance certificate.

32. **DRAWINGS, DESIGN, SPECIFICATION, MANUALS, ORDER COPIES, TEST CERTIFICATES, OPERATING, INSTRUCTIONS ETC**. :

The following will be provided in stages:

A. Tender Drawings :

The following will be submitted by Bidder along with his Tender to enable the Institute to assess the Tender:

i) Layout drawing and general arrangement drawings. The Tenderer should give sufficient details of the proposed equipment, bunker, process control systems, pumps, compressors, instruments, valves, etc.

ii) Single line diagram stowing HT/LT power distribution, communication & PL control and manual control systems etc.

iii) Manufacturer's leaflets, illustrated literature of major bought out items etc. as deemed necessary to assess the Tender.

B Drawings for Approval:

The Supplier will submit the following to the Institute in six copies for approval.

B.1 Stowing Plant General:

a) Lay out drawings, general arrangement drawings, cross-sectional drawings including cross-sectional elevation. The general arrangement and sectional drawings shall include overall dimension, major dimension, location of equipment centerlines, working point elevational & functional clearance requirements, important clearance dimension etc. The auxiliaries also shall be included in the drawing. These drawings should also include constructional features, item-wise weight of equipments, accessories etc.

b) **Plant & Equipment** :

The layout drawings shall show disposition of all equipment including accessories and control panels, instrument panels etc., with dimension, clearance etc.

c) **Instrumentation** :

For instrumentation work, this category of drawings will include instrumentation, flow diagram, G.A. drawings of instrumentation and lay out & GA drawings of control panel room buildings.

d) **Electrics** :

For electrics, layout drawings will show locations of all electrical equipment including switches gear, motors, control gears, limit switches, solenoid valves, earthling mains etc. single line interlocking and sequence diagram for control signaling and communication systems, location of devices switch on gear, control panel desks etc. including sectional views.

e) The details shall include complete cabling drawings giving details of power and control cables, terminal details, entry and exit details layout of trenches, cable rocks / tunnels conduits etc.

List of motors, pumps and list of other equipment shall be furnished along with their cable schedule also will be provided.

f) **Drawing for Approval by Statutory Authorities** :

Drawing requiring approval by Statutory Authorities such as IBR, explosives Inspectorate, Electrical Inspectorate, Inspectorate of Factories, Directorate of Mines Safety, Pollution Control Boards, etc. shall be submitted to the Institute first and after approval by the Institute, the final drawing will be submitted to the Statutory Authorities.

g) 3D drawing of layout of equipment and instrument to be submitted after receiving the order and before submission of final drawing

B.2 Civil & Structural Drawings:

a) **Layout Drawings** :

Supplier shall submit layout drawings of giving relevant dimensions of building and its location with access / service road etc. It will also include the location of equipment with clearance dimension etc. This category will also include electrical buildings such as that for sub-station, switch room etc.

b) **Excavation Drawing** :

Excavation & foundation outline drawing shall include load data in various floor considering all types of load viz. deal load, wind load, live load, wheel load, including seismic effect etc. soil bearing capacity, specific design criteria such as thermal protection, acid / alkali resistance measures etc.

c) **Detailed Drawing** :

The above drawings (a) & (b) will be followed by concrete from drawings giving all details required for construction such as dimensions & details of foundations, columns, beams, slabs, floors, details of reinforcements, bar bending schedule etc. from underside of foundation upto top of building. The drawing shall include size and specification of all foundations / anchor bolts, sleeves, inserts, supports and other items which will be embedded in concrete.

B.3 Steel structural buildings

Regarding layout plan, foundation floors etc. of the steel structural buildings the Supplier shall follow the same procedure as provided in civil and structural drawings. For superstructure, Supplier shall submit the arrangement & detail drawings giving plan, elevation I sections at various locations with details of columns, truss, platforms, beams, connections / fixing etc. All load data such as wheel load for EOT crane, wind load, dead load etc. shall be shown in the Tabular from. Structure / Building must be safe against all kinds of loading and design calculation sheet shall be submitted alongwith drawings. Type and particulars of sheeting shall also be furnished.

B.4 Equipment GA and Detailed Drawing, Documents:

Supplier shall submit assembly, sub-assembly, sectional & detailed drawings of equipment with all dimensions and details for dismantling & re-assembly, procurement of spares, replacements etc. The drawing shall include complete material specification and other details as grade of finish, heat treatment, tolerance etc. as applicable. For electrical equipment it will include coil dimensions, size & section of conductors, type & size of insulation, process of impregnation etc. Performance data as graph, characteristic curves, and other data / information shall also be furnished.

B.5 The drawings / documents submitted for approval shall be returned by the Institute as "Approved / Approved except as noted / Disapproved" within 21 days of receipt thereof.

B.6 Approval given by the Institute to any drawing / document shall not relieve the Supplier of any of his obligations under the Contract, including successful operation of the stowing system.

B.7 Drawings / documents submitted by the Supplier shall be thoroughly checked by him before submission and should be neat & legible. All drawings / documents should be submitted in one lot for approval, non-compliance of which may delay the approval. All reference drawing Numbers, if any, must be mentioned in each drawing Submitted for approval. The drawing shall be complete with the "Bill of Materials".

B.8 Drawings / documents etc. shall be submitted for Institute's approval in a sequential manner starting with the layout / cross sectional drawings, machinery clearance diagram for various sections of the plant followed by design calculations, equipment data sheets, GA / Arrangement Drawing etc. for various equipment, machines, service etc.

B.9 One print each of the drawing / documents approved by the Institute would be returned to the Supplier within the stipulated time of 30 days from the date of submission of the same. However, drawing/ documents which would be approved subject to comments, shall be revised by the Supplier accordingly and 5 (five) prints each of the revised drawings / documents shall be submitted by the Supplier for Institute's approval within 14 (fourteen) days from the date of the submission of the same. Five copies of the final approved drawings will be submitted to the Institute with in 14(fourteen) days.

B.10 Drawings / documents which are found to be deficient / incomplete by the Institute and as such not approved, shall be revised by the Supplier in line with

the modification / revisions suggested by the Institute and revised drawings shall be submitted for approval by the Institute within 14 (fourteen) days from the date of receipt of comment from the Institute . Approval to these revised drawings would be given by the Institute within 14 (fourteen) days from the date of receipt of the same.

B.11 If deemed necessary, the Institute may ask the Supplier to depute their representative(s) to Institute for discussion on the drawings / documents / designs etc. submitted for approval. The Supplier shall depute his Design Engineers for the discussion as per programme given by the Institute. Approval on those drawings would normally be given by the Institute during the discussion itself provided that all the points are clarified / confirmed by Supplier's representative to the entire satisfaction of the Institute.

In addition to the drawings as per agreed list the Institute may also ask for other drawings/documents either for reference purpose or for approval as deemed necessary during execution of the Purchase order.

C. Construction Drawings :

C.1 The Supplier shall also submit to the Institute four sets of construction drawings along-with bill of materials for Civil, Structural, Mechanical, Electrical, Instrumentation work before proceeding with construction / installation work.

C.2 For the stowing plant equipment the following shall be furnished:

i) Descriptive literature & drawings illustrating working principles, method of assembly & dismantling.

ii) Instruction book for proper erection, assembly of equipment, and necessary instructions for checking and recording proper assembly of the plant.

iii) Instruction sheets for proper balancing, alignment, checking and calibration as may be necessary.

iv) Erection drawings showing all details and particulars in sequence required for erection and installation of the stowing plant.

v) Any other instructions by the manufacturers as deemed necessary.

vi) As build drawing of the each items as mention above shold be provided before hand over of the Plant.

C.3 Bill of Materials:

"Bill of Materials" shall be submitted in four copies along with the manufacturing / construction drawings to which they pertain to. It include the list of materials being supplied showing piece mark, the description and ref. Drawing No. etc.

D. Order Copies :

Un-priced copies of orders for the bought out equipment / materials, in duplicate, shall be submitted by the Supplier to the Institute within 15 (fifteen) days after the placement of order by the Supplier. Completeness of the order copies shall be ensured by the Supplier before submission. Name of the stowing plant / equipment the machine for which items have been ordered, shall be clearly mentioned. The order copies shall be complete with all enclosures as referred to in the order. However, before placement of order, the make name etc. shall have to be duly approved by the Institute as mentioned under technical specification for various stowing plant / equipment & machines. In case, any order is amended by the Supplier at a later date, copies of the amended order in duplicate shall be submitted to the Institute within 15 days of their issue. Spares part list with part no. shall also be obtained from equipment supplier and submitted to Institute for purchase of spares.

E. Drawings & Documents for Inspection :

The Supplier shall submit to the Institute the following documents along with their inspection notice for various equipment / structural items failing which the inspection notice may not be entertained by the Institute (copies of these documents shall also be made available to Institute's inspector at the place of inspection for ready reference).

i) Supplier's own inspection report indicating their finding's on the salient dimensions, tests carried out, if any, etc.

ii) Assembly sub-assembly / detail drawing for the equipment / structure / electrical / mechanical / instrumentation equipment as required for the inspection work.

iii) Material test certificate for all major parts / components of the equipment, also for fabricated structures, documentary evidence in support of use of tested quality raw steel shall be submitted.

iv) Metallurgical test reports for castings unless testing has been carried out at Institute's laboratory.

v) Stress relieving / normalizing / annealing graphs, test reports on surface hardness, ultrasonic & radiographic testing etc. as applicable.

vi) Manufacturer's test certificates / performance & characteristics curves for all electrical / mechanical, process hydraulic / electronic / pneumatic equipment / instruments as applicable.

vii) Layout of electrical / pneumatic / hydraulic / electronic equipment & instruments.

viii) Control circuit diagram for electrical equipment / electronic and instrument along with component details of the circuitry.

F. Supply Drawings and Documents :

After completion of construction and before commencement of testing & commissioning of the stowing plant / equipment, the following drawings / documents shall be submitted by the Supplier to the Institute as supply drawings / documents failing which the plant will not be commissioned.

F.1 One set of plastic reproducible / polyethylene rapid reproducible, one set of microfilms and three prints of the following as built drawings made by Supplier and / or his sub-Suppliers incorporating all changes made during execution of work including those made at site during erection, assembly & startup:

i) All manufacturing drawing of steel structures, technological structure, equipment, machines.

ii) All layout, general arrangement & detail drawing of plant / equipment machines etc.

iii) Bill of Materials, Data sheets, calculation sheets, material specifications for machines / equipment etc. giving all cross reference nos.

iv) For civil structural & building drawing in RCC and steel structural building all layout drawing, concrete from drawing with all details of foundation, flooring, column beams, slab etc. details of reinforcements, bar - bending schedule embedded items etc. shall be submitted. For steel structural buildings all arrangement & detailed drawings of superstructure with plan, elevation and sections shall be submitted.

v) **Electrical** :

a) GA and component layout drawing of all the equipment viz., HT & LT switch gears, starters, Remote control panel, central control desk, motors etc.

b) Sub-station / switch room layout drawings

c) Cable layout drawings throughout the plant

d) Power and control cable schedule with cable /nos.

e) Speed, torque and thermal withstand curves of all HT & LT motors.

f) Motor schedule with all the details of the motors.

g) Power and control circuit diagrams for the HT & LT equipment viz. HT & LT switch gears, starters, central control desk etc.

h) Illumination layout drawing

i) Earthing layout drawing

vi) **Instruments**:

a) Dimensional and layout details of all control panel / field instruments.

b) Tubing / wiring details of all control circuit of the panels / field instruments and accessories.

c) Circuit details of all the printed Circuits boards / and other loops alongwith component valves and voltage / wave from based Circuit diagrams.

d) Details of cable schedule and cable layout for all the control loops.

e) Detailed data sheets showing complete specifications such as make, range, connection, input/ output supply voltage mounting etc. of all instruments and accessories.

f) Divisional drawings of all pumps, control valves / actuators / power cylinders / hydraulic actuators / power controllers / hydraulic actuators etc.

vii) **Drawings for Spares**:

The Supplier shall supply complete manufacturing drawings for all the wearing parts which need replacement due to wear under normal conditions. The drawing shall include complete information specification covering all the wearing parts inclusive of full specification covering all the wearing parts inclusive of full specification of materials all required dimension, grade of finish heat treatment, tolerance, etc. A list of wearing components such as bearing, retainers, gaskets, special bolts, chains V-belts, oil seals, etc. shall be furnished showing quantities, materials used, installed dimension, expected useful life etc. Manufacturing drawings for wearing parts of items of bought-outs / proprietary nature shall also be furnished.

viii) **Numbering of drawings**:

Regarding numbering of drawings mutually agreed code will be followed. In the title suitable Institute's code no. will appear first followed by Supplier's drawing no. The prints to be submitted will be folded such that the title will be at the top.

G. Manual, Certificates and Charts :

The Supplier shall supply to the Institute four copies each of the following at least one month prior to commissioning of the plant.

i) Operation and maintenance manual properly bound and containing all details, the equipment-wise list of bearings, motors, gearboxes, couplings, brakes, instruments, process control items, communication and all other bought out equipment or details of any other item deemed necessary for smooth operation maintenance of the stowing plant.

ii) Vendor's manuals for bought-out equipment including spare parts list, lubrication details etc.

iii) Lubrication charts for all equipment including bought-outs items indicating the recommended grade of lubricant, replacement frequency, quantity etc. of lubricant required per fill. Supplier shall inform the Institute at least 2 months before commissioning of the plant the expected annual requirement of each grade of lubricating oil / grease etc. for the new equipment of the plant to enable the Institute to plan the inventory accordingly.

iv) Full ordering specification together with expected consumption pattern (weekly / month / yearly) for consumables, if any required for normal operation of the stowing plant.

H. Size of Drawings :

The following sizes of drawings as per IS:696 / latest, shall be used for entire scope of work.

	Trimmed /	**Untrimmed**
A0	841x1199mm /	880x1230mm
A1	594x841mm/	625x880mm
A2	420x594mm	/450x625mm
A3	297x420mm/	330x450mm
A4	210x297mm/	240x330mm
A5	148x210mm/	165x240mm

I. Time Schedule for submission of Drawings :

The Bidder shall incorporate the time schedule for submission of different categories of drawings to the Institute in the program of work to be submitted by him along with Technical-commercial part of the bid.

J. The drawing numbers should be given in such a manner that the drawings pertaining to a particular section are found conveniently at one place. Suitable cross references shall given in the drawings as required.

K. The supply of all drawings / documents as stated above, shall from a part of the contract and the Institute will withhold payment of the Supplier under the contract until all drawings documents have been received in full to the entire satisfaction of the Institute.

L. The Supplier shall be fully responsible for obtaining approval of the general layout of the stowing plant and other such drawings etc. from Statutory Authority e. g . Director General of Mines Safety, Chief Inspector of Factories, Central

Electricity Authority, Pollution control etc. as required. Electrical Inspector's approval shall be obtained for the electrical installations. For flame proof equipment necessary approval shall be obtained from relevant authorities. Necessary fees shall be paid by the Supplier.

M. All drawings, diagrams, design calculation s, specifications, materials lists etc. supplied by the Tender / Supplier to the Institute under the contract shall remain the property of the Institute, who shall have the sole right to use them freely for any future procurement of material without making any reference thereof to the Supplier.

N. All drawings, documents, leaflets, charts etc. to be furnished by the Tender / Supplier shall be in English language and in metric units.

O. The Supplier shall submit the schedule of various drawings and documents

P. Ownership of Drawings, Documents and Specifications :

All drawings, specifications materials and designs furnished by the Institute or his authorised Representatives shall be treated as strictly confidential property of the Institute. All such drawings, specifications, material etc. shall be returned to the Institute upon completion of the work under the contract. No copies, duplicates, or photostats, shall be retained by the Supplier without the consent of the Institute. All drawings, specifications, and manuals and all specific designs furnished by or through the Supplier shall be owned by the Institute.

33. After completion of package supply work, the Supplier & other worker shall have no claim for employment, social & financial benefits from Institute/BCCL. There shall be no liability on Institute/BCCL part in this regard.

34. On completion of the work all rubbish, debris, brick - bats etc. shall be removed by the Supplier (s) at his / their own expenses, and the site cleaned and handed over to the Institute and shall intimate officially of having completed the work as per purchase order.

35. **Performance Guarantees** :

The Supplier shall guarantee the performance in terms of the overall pumping capacity of the plant.

a) Unless otherwise stated, all equipment shall be capable to withstand a minimum 20% intermittent overload over the designed capacity for safe operation.

b) The Supplier shall guarantee the slurry pumping capacity of the plant at following level of operation during the performance trial run period of the plant.

- ü Nominal slurry pumping capacity - 60 m3 /hour with 2 shift / day, 6 days/week operation, slurry pipeline distance of 2 km from plant.(slurry consistency by weight = 55-70% fly ash)
- ü Capacity of the slurry pumping plant - 3300 to 3900 m^3/week totaling to 1,40,500 m^3 in 9 months period at optimum pumpable concentration(Slurry consistency by weight = 55-70% fly ash).
- ü The tenderer shall also indicate & guarantee the power consumption (KWh) per 100 m^3 of slurry pumping.

36. **Liquidated Damage for pumping shortfall:**

The Supplier shall guarantee for pumping capacity of not less than 95% of the designed requirement of the plant. In case of shortfall from the guaranteed pumping capacity, the tenderer shall pay "Liquidated Damages" at the rate of 0.5% of the contract value for every 1% decrease limited to 5% of the contract value.

37. **JURISDICATION** :

The courts of Dhanbad (Jharkhand) only will have the jurisdiction to deal with and decide any legal matter or dispute what-so-ever arising out of the Contract.

38. The Supplier shall ensure the continuous attendance of a competent and experienced Resident Engineer with assistants exclusively for the work during the execution of the contract. He will also represent the Supplier during the tenure of the works.

39. The provision of labour, equipment, instruments, materials (including all spares during the trial run period), constructional plants, temporary works and everything, whether of a temporary or permanent nature required in and for the construction, completion, maintenance and trial run of the various works as detailed in the scope of works will be deemed to be included in the offer. All required lubricants. Grease, hydraulic oil, etc. for initial start up of the equipment will be supplied by the Supplier.

40. The Supplier should note that water required for construction purposes or drinking purposes for the workers at work site shall have to be arranged by the Supplier himself.

41. Printed conditions of the tenderer shall not be binding on CIMFR.

42. EMPLOYMENT OF LOCAL LABOUR: Suppliers are to employ, to the extent possible, only local project affected people and pay wages not less than the minimum wages fixed by the local Government."

43. Arbitration :

Except where otherwise provided in this document, all questions and disputes relating to the meaning of the specifications, instructions and terms & conditions herein before mentioned and as to the quality of the materials, as to any question, claim, right, matter or thing whatsoever, in any way arising out of or relating to the Contract. Specifications, estimates, instructions, orders or these conditions or otherwise concerning the works, or the execution of the same whether arising during the process of the work or after the completion or abandonment thereof shall be **referred to the sole arbitration of a** person nominated by the Director General, Council of Scientific & Industrial Research, New Delhi**,** and if he is unable or unwilling to act to the sole arbitration of some other person appointed by him willing to act as such arbitrator. The submission shall be deemed to be submission to Arbitration under the meaning of the India Arbitration & Conciliation, 1996 or any satisfactory modification or reenactment thereof for the time being in force conclusive and binding on all parties of the Contract. **The venue of the arbitration will be Dhanbad only.**In the case of a dispute between the purchaser and a foreign supplier, the dispute shall be settled by arbitration in accordance with provision of clause above. But if this not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission of International Trade Law) Arbitration Rules. The venue of the arbitration shall be the place from where the order is issued

44. **TERMS & CONDITIONS:**

The Supply shall be governed by all the terms & conditions provided in this document.

45. Director, CIMFR reserves the right to delete or alter the item given in the enclosed annexure depending on prevailing requirements.

FORMATS FOR BID SUBMISSION

Checklist for Bid Submission

The following check-list must be filled in and submitted with the bid document:

Technical Bid:

1.	Has the tender document issued to you?	Yes / No
2.	Have you attached the technical bid form?	Yes / No
3.	Have you attached a copy of the last audited balance sheet of your firm?	Yes / No
4.	Have you attached proof of the manufacturer's authorization?	Yes / No
5.	Have you attached the details of the income tax registration and latest income tax clearance certificate?	Yes / No
6.	Have you attached the statement of deviations from the technical Specifications in the format?	Yes / No
7.	Have you provided details of your maintenance infrastructure facilities including addresses of the service centers in the format	Yes / No
8.	Have you attached the technical details of the goods and services offered as a part of this bid document?	Yes / No
9.	Have you attached the copies of relevant work orders executed during the last three years?	Yes / No
10.	Have you attached the details of identical or similar equipments supplied to other Organisation?	Yes / No
11.	Have you attached photocopy duly attested of Certificate of compulsory Enlistment of Indian Agents of foreign principals with DGS&D if quoting on their behalf?	Yes / No
12.	Have you attached Service Provider Certificate issued by the Manufacturer?	Yes / No

Financial Bid:

1.	Have you attached the Financial Bid?	Yes / No
2.	Have you attached the price schedule for the goods/services offered in the Format?	Yes / No
3.	Have you attached the statement of deviations from the Financial terms and conditions in the format?	Yes / No

Please arrange your tender document for each part as given below:

EARNEST MONEY DEPOSIT:

TECHNICAL BID:

Technical Bid Form

- ü Copy of the Last Audited Balance Sheet of the company
- ü Income Tax Registration Certificate/PAN No.and latest Income Tax Clearance Certificate
- ü Proof of Manufacturer's authorization
- ü Photocopy of Warranty Service Provider Agreement between the manufacturer and the Service Provider.
- ü Statement of Deviation from the technical specifications
- ü Details of local service centers
- ü Copies of relevant work orders
- ü Details of supplies of identical or similar equipment made to other Government / Semi-government/ PSU/ Reputed Organization/CSIR Labs/ Institutions for the preceding seven years together with price eventually or finally paid.

FINANCIAL BID:

Financial Bid Form

- ü Estimated quantity and Financial Bid Analysis

Statement of Deviations from Financial terms and conditions

GENERAL TECHNICAL CONDITIONS

1.0 GENERAL

This part covers technical conditions pursuant to the Purchase order and will form an integral part of the Purchase order. The following provisions shall supplement all the detailed technical specifications and requirements brought out in the accompanying technical specifications. The Supplier's proposal shall be based on the use of equipment and materials complying fully with the requirements, specified herein. It is recognized that the Supplier may have standardized on the use of certain components, materials, processes or procedures different that those specified herein. Alternate proposals offering similar equipment based on the manufacturer's standard practice will also be considered provided such proposals meet the specified designs, standard and performance requirements and are acceptable to the Institute.

2.0 LIMIT OF SUPPLY CONTRACT

Equipment furnished shall be complete in every respect with all mountings, fittings, fixtures and standard accessories normally provided with such equipment and/or needed for erection, completion and safe operation of the equipment as required by applicable codes though they may not have been specifically detailed in the technical specifications unless included in the list of exclusions. All similar standard components/parts of similar standard equipment provided, shall be inter-changeable with one another.

3.0 EQUIPMENT PERFORMANCE GUARANTEE

3.1 The performance tests of the equipment under the scope of the Purchase order are detailed in the "Terms and Conditions". These guarantees shall supplement the general performance guarantee provisions covered under general terms & conditions in clause entitled "Guarantee".

3.2 Liquidated damages for not meeting performance guarantee during the performance and guarantee tests shall be assessed and recovered from the Supplier, as detailed in the technical specifications. Such liquidated damages shall be without any limitation whatsoever and shall be in addition to damages, if any payable under any other clauses of conditions of supply.

4.0 ENGINEERING DATA

4.1 The furnishing of engineering data by the Supplier shall be in accordance with the

schedule for each set of equipment as specified in the technical specifications. The review of these data by the Engineer will cover only general conformance of the data to the specifications and documents interfaces with the equipment provided under the specifications, external connections and of the dimensions which might affect plant layout. This review by the Engineer may not indicate a thorough review of all dimensions, quantities and details of the equipment, materials, any devices or items indicated or the accuracy of the information submitted. This review and /or approval by the Engineer shall not be construed by the Supplier, as limiting any of his responsibilities and liabilities for mistakes and deviations from the requirements, specified under these specifications and documents.

4.2 All engineering data submitted by the Supplier after final process including review and approval by the Engineer shall form part of the supply contract documents and the entire stores covered under these specifications shall be performed in strict conformity, unless otherwise expressly requested by the Engineer in writing.

5.0 DRAWING

5.1 All drawings submitted by the Supplier including those submitted at the time of bid shall be sufficiently detailed to indicate the type, size, arrangement, weight of each component, break-up for packing and shipment, the external-connections, fixing arrangements required, the dimensions required for installation and inter-connections with other equipment and materials, clearances and spaces required between various portions of equipment and any other information specifically requested in the specifications.

5.2 Each drawing submitted by the Supplier shall be clearly marked with the name of the Institute, the unit designation, the specifications title, the specification number and the name of the project. If standard catalogue pages are submitted the applicable items shall be indicated therein. All titles, notings, markings and writings on the drawing shall be in English. All the dimensions should be in metric units.

5.3 The Institute may use a 35mm microfilm system in processing drawings. All drawings shall be suitable for microfilming. Drawings, which are not suitable for microfilming, will not be accepted. A copy of each drawings reviewed will be returned to the Supplier as stipulated herein. The Institute may also accept and use floppies/ compact disks for computer based drawings.

5.3.1 Copies of drawings returned to the Supplier will be in the form of a print with the Institute's marking, or a print made from a microfilm of the marked up drawing or in the form of aperture cards if the Supplier has facilities to process such cards or print

made from floppies for computer based drawings.

5.4 The drawings submitted by the Supplier shall be reviewed by the Engineer as far as practicable within four (4) weeks and shall be modified by the Supplier if any modifications and / or corrections are required by the engineer. The Supplier shall incorporate such modifications and/or corrections and submit the final drawings for approval. Any delay arising out of failure by the Supplier to rectify the drawings in good time shall not alter the Purchase order completion date.

5.5 Approval by the Engineer or his Nominee: the Supplier shall submit specifications and drawings showing the proposed Temporary Works to the Engineer or his Nominee, who is to approve them if they comply with the specifications and drawings. The Supplier shall be responsible for design of Temporary Works.

The HOD, Mine Stowing and Filling Department/Engineer or nominee's approval shall not alter the Supplier's responsibility for design of the Temporary Works.

5.6 The drawings sent for approval to the Engineer shall be in quintuplicate. One print of such drawings will be returned to the Supplier by the Engineer marked approved/ approved with corrections. The Supplier shall thereupon furnish the Institute with nine prints and one reproducible original of the drawing after incorporating all corrections.

5.7 Further work by the Supplier shall be in strict accordance with these drawings and no deviation shall be permitted without the written approval of the engineer, if so required.

5.8 All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawings shall be at the Supplier's risk. The Supplier may make any changes in the design which are necessary to make the equipment conform, to the provisions and intent of the Purchase order and such changes will again be subject to approval by the engineer. Approval of Supplier's drawings or work by the Engineer shall not relieve the Supplier of any of his responsibilities and liabilities under the Purchase order.

5.9 Drawings shall include all installation and detailed piping drawings wherever applicable. All piping 100mm and larger shall be routed in detail and smaller pipe shall be shown schematically or by isometric drawings. All drawings shall be fully corrected to agree with actual as built construction.

5.10 **Operating and Maintenance Manual:** If "as built" drawings and/or Operating and Maintenance Manuals are required the Supplier shall supply them by the dates stated in the Purchase order data.

If the Supplier does not supply the drawings and/or Manuals by the dates stated in

the Purchase order data, or they do not receive the Engineer or his Nominee's approval, the Engineer or his Nominee shall withhold the amount stated in the Purchase order data from payments due to the Supplier.

6.0 INSTRUCTION MANUALS

6.1 The Supplier shall submit to the engineer, preliminary instruction manuals for all the equipment, covered under the Purchase order within the time agreed upon between the Institute & the Supplier. The final instruction manuals complete in all respects shall be submitted by the Supplier thirty (30) days before the first shipment of the equipment. The instruction manuals shall contain full details and drawings of all the equipment furnished, the erection procedures, testing procedures, operation & maintenance procedure of the equipment. These instruction manuals shall be submitted in the form of one (1) reproducible original and twelve (12) copies.

6.2 If after the commissioning and initial operation of the plant, the instruction manuals require any modifications/additions/changes, the same shall be incorporated and the updated final instruction manuals in the form of one (1) reproducible original and twelve (12) copies shall be submitted by the Supplier to the Institute.

6.3 The Supplier shall furnish to the Institute, twelve (12) sets of spare parts catalogue.

7.0 FIRST FILL OF CONSUMABLE, OILS AND LUBRICANTS

All the first fill of consumable such as oils, lubricants and essential chemicals etc., which will be required to put the equipment covered under the scope of the specifications, into successful trial operation, and during the total period of trial run shall be furnished by the Supplier.

8.0 MANUFACTURING SCHEDULE

The Supplier shall submit to the Engineer his manufacture and delivery schedules for all equipment within thirty (30) days from the date of the letter of acceptance of tender. Such schedules shall be in line with the detailed net-work for all phases of the work of the Supplier. Such schedule shall be reviewed, up-dated and submitted to the engineer, once every two (2) months thereafter, by the Supplier. Schedule shall also include the materials and equipment purchased from outside suppliers.

9.0 REFERENCE STANDARDS

9.1 The codes and/or standards referred to in these specifications shall govern, in all cases wherever such references are made. In case of a conflict between such codes and/or standards and the specifications, the latter shall govern. Such codes

and/or standards referred to shall mean the latest revisions, amendments/changes adopted and published by the relevant agencies. In case of any further conflict in this matter, the same shall be referred to the Engineer whose decision shall be final and binding.

9.2 Other internationally acceptable standards which ensure equal or higher performance than those specified shall also be accepted.

10.0 DESIGN IMPROVEMENT

10.1 The Engineer or the Supplier may propose changes in the specification of the equipment or quality thereof and if the parties agree upon any such changes the specification shall be modified accordingly.

10.2 If any such agreed upon change is such that it affects the price and schedule of completion, the parties shall agree in writing as to the extent of any change in the price and/or schedule of completion before the Supplier proceeds with the change. Following such agreement the provision thereof, shall be deemed to have been amended accordingly.

11.0 QUALITY ASSURANCE

11.1 Quality Assurance Programme:

To ensure that the equipment and services under the scope of this Purchase order whether manufactured or performed within the Supplier's works or at his sub-supplier's premises or at the Institute's site or at any other place of work are in accordance with the specifications, the Supplier shall adopt suitable quality assurance programme to control such activities at all points necessary. Such programme shall be outlined by the Supplier and shall be finally accepted by the Engineer after discussions before the issue of letter of acceptance of tender. A quality assurance programme of the Supplier shall generally cover the following :

a. His organization structure for the management and implementation of the proposed quality assurance programme;
b. Documentation control system:
c. Qualification data for bidder's key personnel;
d. The procedure for purchase of materials, parts components and selection of sub-supplier's services including vendor analysis, source inspection, incoming raw-material inspection, verification of materials purchased etc;
e. System for shop manufacturing and site erection control including process control and fabrication and assembly controls;

f. Control of non-conforming items and system for corrective actions:
g. Inspection and test procedure both for manufacture and field activities;
h. Control of calibration and testing of measuring and testing equipment:
i. system for indication and appraisal of inspection status:
j. System for quality audits;
k. System for authorizing release of manufactured product to the Institute;
l. System for maintenance of records;
m. System for handling storage and delivery: and
n. A quality plan detailing out the specific quality control procedure adopted for controlling the quality characteristics relevant to each item of equipment furnished and each work at different stages executed at work site.

11.2 Quality Assurance Documents

The Supplier shall be required to submit the following Quality Assurance Documents within three weeks after despatch of the equipment:

i. All non-destructive examination procedures stress relief and weld repair procedure actually used during fabrication.
ii. Welder and welding operator qualification certificates.
iii. Welder identification list, listing welder's and welding operator's qualification procedure and welding identification symbols.
iv. Material mill test reports on components as specified by the specification.
v. The inspection plan with verification, inspection plan check points, verification sketches, if used, and methods used to verify that the inspection and testing points in the inspection plan were performed satisfactorily.
vi. Sketches and drawings used for indicating the method of traceability of the radiographs to the location on the equipment.
vii. All non-destructive examination result reports including radiography interpretation reports.
viii. Stress relief time temperature charts.
ix. Factory test results for testing required as per applicable codes and standard referred in the specifications.
x. The Engineer or his duly authorized representative reserves the right to carry out quality audit and quality surveillance of the systems and procedures of the Supplier/his vendor's quality management and control activities.

12.0 ENGINEER'S SUPERVISION

12.1 To eliminate delays and avoid disputes and litigation it is agreed between the parties to the Purchase order that all matters and questions shall be referred to the Engineer and his decision shall be final.

12.2 The work shall be performed under the direction and supervision of the engineer. The scope of the duties of the engineer, pursuant to the Purchase order, will include but not be limited to the following :

a. Interpretation of all the terms and conditions of these documents and specification.
b. Review and interpretation of all the Supplier's drawings, engineering data etc.
c. Witness or authorize his representative to witness tests and trials either at the manufacturer's works or at site, or at any place where work is performed under the Purchase order.
d. Inspect, accept or reject any equipment, material and work under the Purchase order.
e. Issue certificate of acceptance and/or progressive payment and final payment certificates.
f. Review and suggest modifications and improvements in completion schedules from time to time.
g. Supervise the quality assurance programme implementation at all stages of the works.
h. To receive and endorse the dispatch documents enabling the Supplier to clear the consignments.

13.0 INSPECTION, TESTING AND INSPECTION CERTIFICATE

13.1 The engineer, his duly authorized representative and/or outside inspection agency acting on behalf of the Institute shall have at all reasonable times access to the Supplier's premises or works and shall have the power at all reasonable times to inspect and examine the materials and workmanship of the works during its manufacture or erection and if part of the works is being manufactured or assembled at other premises or works, the Supplier shall obtain for the Engineer/Inspector and for his duly authorized representative permission to inspect as if the works were manufactured or assembled on the Supplier's own premises or works.

13.2 The Supplier shall give the Engineer/Inspector fifteen (15) days written notice of any material/equipment being ready for testing. Such tests shall be to the Supplier's account except for the expenses of the Inspector. **If such test are conducted**

outside India, the expenses of the inspectors (five persons) are to be born by the supplier and the same should be included in the price bid. The Engineer/Inspector, unless witnessing of the tests is virtually waived, will attend such tests within fifteen (15) days of the date on which the equipment is notified as being ready for test/inspection, failing which the Supplier may proceed with the test which shall be deemed to have been made in the Inspector's presence and he shall forthwith forward to the Inspector duly certified copies of test in triplicate.

13.3 The Engineer or Inspector shall within fifteen (15) days from the date of inspection as defined herein give notice in writing to the Supplier, of any objection to any drawings and all or any equipment and workmanship which in his opinion is not in accordance with the Purchase order. The Supplier shall give due consideration to such objections and shall either make the modifications that may be necessary to meet the said objections or shall confirm in writing to the Engineer/Inspector giving reasons therein, that no modifications are necessary to comply with the Purchase order.

13.4 When the factory tests have been completed at the Supplier's or sub-supplier's works, the Engineer/Inspector shall issue a certificate to this effect within fifteen (15) days after completion of tests but if the tests are not witnessed by the Engineer/Inspector, the certificate shall be issued within fifteen (15) days of the receipt of the Supplier's test certificate by the Engineer/Inspector. Failure of the Engineer/Inspector to issue such a certificate shall not prevent the Supplier from proceeding with the works. The completion of these tests or the issue of the certificate shall not bind the Institute to accept the equipment should it on further tests after erection, be found not to comply with the Purchase order.

13.5 In all cases where the Purchase order provides for tests whether at the premises or works of the Supplier or of any sub-supplier, the Supplier, except where otherwise specified, shall provide free of charge such items as labour, materials, electricity, fuel, water, stores, apparatus and instruments as may be reasonably demanded by the Engineer/Inspector or his authorized representative to carry out effectively such tests of the equipment in accordance with the Purchase order and shall given facilities to the Engineer/Inspector or to his authorized representative to accomplish testing.

13.6 The inspection by Engineer/Inspector and issue of Inspection Certificate thereon shall in no way limit the liabilities and responsibilities of the Supplier in respect of the agreed quality assurance programme forming a part of the Purchase order.

14.0 TEST

14.1 Start up

14.1.1 On completion of erection of the equipment and before start-up, each item of the equipment shall be thoroughly cleaned and then inspected jointly by the Engineer and the Supplier for correctness and completeness of installation and acceptability of start-up, leading to initial pre-commissioning tests at site. The list of pre-commissioning tests to be performed shall be as mutually agreed and included in the Supplier's quality assurance programme.

14.1.2 The Supplier's commissioning/start-up engineers specifically identified as far as possible shall be responsible for carrying out all the pre-commissioning tests. On completion of inspection, checking and after the pre-commissioning tests are satisfactorily over, the complete equipment shall be placed on initial operation during which period the complete equipment shall be operated integral with sub-systems and supporting equipment as a complete plant referred hereinafter as plant.

14.2 Trial Operation

14.2.1 The plant shall then be on trial operation during which period all necessary adjustments shall be made while operating over the full load-range enabling the plant to be made ready for performance and guarantee tests.

14.2.2 The duration of trial operation of the complete equipment shall be nine months operation on full load or any other duration or any other load as may be agreed to, between the Engineer and the Supplier. The trial operation shall be considered successful, provided that each item of the equipment can operate continuously at the specified operating characteristics, for the period of trial operation.

14.2.3 For the period of trial operation, the time of operation with any load shall be counted. Minor interruptions not exceeding four (4) hours at a time, caused during the continuous operation shall not affect the total duration of trial operation. However, if in the opinion of the engineer, the interruption is long, the trial operation shall be prolonged for the period of interruption.

14.2.4 A trial operation report comprising of observations and recordings of various parameters to be measured in respect of the above trial operation shall be prepared by the Supplier. This report, besides recording the details of the various observations during trial run, shall also include the dates of start and finish of the trial operations and shall be signed by the representatives of both the parties. The report shall have sheets, recording all the details of interruptions occurred, adjustments made and any minor repairs done during the trial operation. Based

on the observations, necessary modifications/repairs to the plant shall be carried out by the Supplier to the full satisfaction of the Engineer to enable the later to accord permission to carry out performance and guarantee tests on the plant. However, minor defects which do not endanger the safe operation of the equipment, shall not be considered as reasons for with holding the aforesaid permission.

14.3 Performance and guarantee test

14.3.1 The overall performance during the total duration of trial operation (clause 14.2 above) will constitute the single performance and guarantee test data.

14.3.2 This test shall be binding on both the parties of the supply contract to determine compliance of the equipment with the performance guarantees.

14.3.3 The available instrumentation and control equipment will be used during such tests and the Supplier will calibrate all such measuring equipment and devices as far as practicable. Engineer may check the calibration, if feels necessary. However, unmeasurable parameters shall be taken into account in a reasonable manner by the engineer, for the equipment of these tests. The tests will be conducted at the specified load points and as near the specified cycle condition as practicable. The Engineer will apply proper corrections in calculation, to take into account conditions which do not correspond to the specified conditions.

14.3.4 Any special equipment, tools and tackles required for the successful completion of the performance and guarantee tests shall be provided by the Supplier, free of cost.

14.3.5 The guaranteed performance figures of the equipment shall be proved by the Supplier during these performance and guarantee tests. Should the results of these tests show any decrease from the guaranteed values, the Supplier shall modify the equipment as required to enable it to meet the guarantees. In such case, performance and guarantee test shall be repeated within one month, from the date the equipment is ready for re-tests and all cost for modifications including labour, materials and the cost of additional testing to prove that the equipment meets the guarantees, shall be borne by the Supplier.

14.3.6 The specific tests to be conducted on equipment has been brought out in the technical specifications.

14.3.7 Performance and guarantee test shall make allowance for instrumentation errors as may be decided by the Engineer.

14.4 Test Codes

The provisions outlined in the ASME performance test codes or other international and Indian approved equivalents shall generally be used as a guide for all the above test procedures unless otherwise specified in the technical specifications.

15.0 PACKING

15.1 All the equipment shall be suitably protected, coated, covered or boxed and crated to prevent damage or deterioration during transits, handling and storage at site till the time of erection. While packing all the materials, the limitation from the point of view of availability of railway wagon sizes in India should be taken into account. The Supplier shall be responsible for any loss or damage during transportation, handling and storage due to improper packing.

16.0 PROTECTION

All coated surfaces shall be protected against abrasions, impact, discoloration and any other damages. All exposed threaded portions shall be suitable protected with either a metallic or a non-metallic protecting device. All ends of all valves and piping and conduit equipment connections shall be properly sealed with suitable devices to protect them from damage. The parts which are likely to get rusted, due to exposure to weather, should also be properly treated and protected in a suitable manner.

17.0 PRESERVATIVE SHOP COATING

17.1 All exposed metallic surfaces subject to corrosion shall be protected by shop application of suitable coatings. All surfaces which will not be easily accessible after the shop assembly, shall before hand be treated and protected for the life of the equipment. All surfaces shall be thoroughly cleaned of all mill scale, oxide and other coatings and prepared in the shop. The surfaces that are to be finish painted after installation or require corrosion protection until installation, shall be shop painted with at least two coats of primer. Transformers and other electrical equipment, if included shall be shop finished with one or more coats of primer and two coats of high grade resistance enamel. The finished colours shall be as per manufacturer's standards, to be selected and specified by the engineering at a later date.

17.2 Shop primer for all steel surfaces which will be exposed to operating temperature below 95^0C shall be selected by the Supplier, after obtaining specific approval of the Engineer regarding the quality of primer proposed to be applied. Special high

temperature primer shall be used on surfaces exposed to temperatures higher than 95^0C and such primers shall also be subject to the approval of the engineer.

17.3 All other steel surfaces, which are not to be painted shall be coated with suitable rust preventive compound subject to the approval of the engineer.

18.0 PROTECTIVE GUARDS

Suitable guards shall be provided for protection of personnel on all exposed rotating and/or moving machine parts. All such guards with necessary spares and accessories shall be designed for easy installation and removal for maintenance purposes.

19.0 DESIGN CO-ORDINATION

The Supplier shall be responsible for the selection and design of appropriate equipment to provide the best co-ordinated performance of the entire system. The basic design requirements are detailed out in Technical Specification. The design of various components, sub-assemblies and assemblies shall be so done, so that it facilitates easy field assembly and maintenance. All the rotating components shall be so selected that the natural frequency of the complete unit is not critical at or closed to the operating range of the unit.

20.0 DESIGN CO-ORDINATION MEETING

The Supplier will be called upon to attend design co-ordination meetings with the engineer, other Suppliers and the representative of the Institute during the period of execution of Purchase order. The Supplier shall attend such meetings at his own cost at the Institute or at mutually agreed venue as and when required and fully co-operate with such persons and agencies involved during those discussions.

21.0 TOOLS AND TACKLES

The Supplier shall supply with the equipment one complete set of all special tools and tackles for the erection, assembly, dis-assembly and maintenance of the equipment. However, these tools and tackles shall be separately packed and brought on to site.

22.0 NOISE LEVEL

The equivalent 'A' weighted sound level measured at a distance of 1.5 metres above floor level in elevation and one metre horizontally from the base of any

equipment furnished and installed under these specifications, expressed in decibels to a reference of 0.0002 microbar, shall not exceed 85 dBA.

23.0 TAKING OVER

Upon successful completion of all the tests to be performed at site on equipment furnished and erected by the Supplier, the Engineer shall issue to the Supplier a taking over certificate as a proof of the final acceptance of the equipment. Such certificate shall not unreasonably be with held nor will be Engineer delay the issuance thereof, on account of minor omissions or defects which do not affect the commercial operation and /or cause any serious risk to the equipment. Such certificate shall not relieve the Supplier of any of his obligations which otherwise survive, by the terms and conditions of the Purchase order after issuance of such certificate.

24.0 INDIAN STANDARDS

Normally Indian Standards as published by BUREAU OF INDIAN STANDARDS shall be followed. Wherever relevant Indian Standard is not published by the BIS, International Standards or American Standard or German Standard or British Standard, as decided by the Engineer in consultations with the Consultants employed by the Institute, shall be followed.

25.0 WELDING

If the manufacturer has special requirements relating to the welding procedures for welds at the terminals of the equipment to be procured by the Institute under separate specifications, the requirements shall be submitted to the Engineer in advance of commencement of erection work.

26.0 LUBRICATION

Equipments shall be lubricated by systems designed for continuous operation. Lubricant level indicators shall be furnished and marked to indicate proper levels under both stand-still and operating conditions.

27.0 EQUIPMENT BASES

A cast iron or welded steel base plate shall be provided for all rotating equipment which is to be installed on a concrete/structural steel base unless otherwise agreed to by the engineer. Each base plate shall support the unit and its drive assembly,

shall be of a neat design with pads for anchoring the units, shall have a raised lip all around, and shall have threaded drain connections.

28.0 RATING PLATES, NAME PLATES AND LABELS

28.1 Each main and auxiliary items of plant is to have permanently attached to it in a conspicuous position a rating plate of non corrosive material upon which is to be engraved the manufacturer's name, equipment, type or serial number, together with details of the loading conditions under which the item of plant in question have been designed to operate, and such diagram plates as may be required by the engineer.

28.2 Each item of plant is to be provided with a nameplate or label designating the service of the particular equipment. The inscriptions are to be approved by the Engineer or shall be as detailed in the appropriate sections of the technical specifications.

28.3 Such nameplates or labels are to be of white non-hygroscopic material with engraved black lettering or, alternatively, in the case of indoor circuit breakers, starters etc. of transparent plastic material with suitably coloured lettering engraved on the back.

28.4 Items of plant such as valves, which are subject to handling, are to be provided with an engraved chromium plated nameplate or label with engraving filled with enamel.

28.5 All such nameplates, instruction plates, lubrication charts etc. shall be bilingual with Hindi inscription first, followed by English. Alternatively two separate plates one with Hindi and the other with English inscriptions may be provided.

29.0 COLOUR CODE FOR PIPE SERVICES

All pipe services wherever applicable are to be painted in accordance with the Institute's standard colour scheme, by the Supplier.

30.0 SERVICE BY THE BCCL/ INSTITUTE

30.1 The following services shall be provided by the BCCL/ Institute:

i. Construction water at one point within 100 metres of the work site, charges to be decided by the BCCL.

ii Auxiliary power for construction at one point at 6.6 Kv within 100 metres of the work site, charges to be decided by the BCCL.

30.2 In the event of the Supplier requiring these services at parameters other than those specified above, for any systems, equipment, instrument etc. he shall make the necessary arrangements himself.

ERECTION CONDITIONS

1. GENERAL

1.1 The following shall supplement the conditions already contained in the other parts of these specifications and documents and shall govern that portion of the work of this order to be performed at site.

1.2 The Supplier upon receipt of the purchase order shall, in addition to a project co-ordinator, nominate another responsible officer as his representative at site suitably designated for the purpose of overall responsibility and co-ordination of the works to be performed at site. Such person shall function from the site office of the Supplier during the pendency of order.

2.0 REGULATION OF LOCAL ALUTHORITIES AND STATUTES

2.1 The Supplier shall comply with all the rules and regulations of local authorities during the performance of his field activities. He shall also comply with the minimum wages act, 1948 and the payment of wages act (both of the Government of India and the local State Government) and the rules made thereunder in respect of any employee or workman employed or engaged by him or his sub-supplier. The Supplier shall make all necessary payments of the Provident Fund for the workmen employed by him for the work as per the laws prevailing under provisions of CMPF and Allied Schemes and CMPF and Miscellaneous Provisions Act 1948 or Employees Provident Fund and Miscellaneous Provisions Act 1952 as the case may be.

2.2 All registration and statutory inspection fees, if any, in respect of his supply pursuant to this purchase order shall be to the account of the Supplier. However, any registration, statutory inspection fees lawfully payable under the provisions of the rules and regulations of the Government and any other statutory laws and its amendments from time to time during erection in respect of the plant equipment ultimately to be owned by the Institute, shall be to the account of the Institute. Should any such inspection or registration need to be arranged due to the fault of the Supplier or his sub-supplier, the additional fees for such inspection and/ or registration shall be borne by the Supplier.

3.0 INSTITUTE'S LIEN ON EQUIPMENT

The Institute shall have lien on all equipment including those of the Supplier

brought to the site for the purpose of erection, testing and commissioning of the plant. The Institute shall continue to hold the lien on all such equipment throughout the period of execution of Purchase order. No material brought to the site shall be removed from the site by the Supplier and/or his sub-suppliers without the prior written approval of the engineer.

4.0 INSPECTION, TESTING AND INSPECTION CERTIFICATES

The provisions of the clause entitled inspection testing and inspection certificates under section GTC (General Technical Condition) shall also be applicable to the erection portion of the works. The Engineer shall have the right to re-inspect any equipment though previously inspected and approved by him, at the Supplier's works, before and after the same are constructed and/or erected at site. If by the above inspection, the Engineer rejects any work or equipment, the Supplier shall make good for such rejection either by replacement or modifications/repairs as may be necessary, to the satisfaction of the engineer. Such replacement will also include the replacement or re-execution of such of those works of other Suppliers and/or agencies, which might have got damaged or affected by replacements or re-work done to the Supplier's work.

5.0 ACCESS TO SITE AND WORKS ON SITE

5.1 Suitable access to and possession of the site shall be accorded to the Supplier by the Institute in reasonable time.

5.2 The works so far as it is carried out on the BCCL's premises, shall be carried out at such time as the Institute may approve and the Institute shall give the Supplier reasonable facilities for carrying out the works.

5.3 In the execution of the works, no persons other than the Supplier or his duly appointed representative, sub-Supplier and workmen, shall be allowed to do work on the site, except by the special permission, in writing of the Engineer or his representative.

6.0 SUPPLIER'S SITE OFFICE ESTABLISHMENT

The Supplier shall establish a site office at the site and keep posted an authorized representative for the purpose of the contract. Any written order or instruction of the Engineer or his duly authorized representative shall be communicated to the said authorized resident representing the Supplier and the same shall be deemed to have been communicated to the Supplier at his legal address.

7.0 CO-OPERATION WITH OTHER CONTRACTORS

7.1 The Supplier shall co-operate with all other Contractors, Supplier or tradesmen of the Institute/BCCL, who may be performing other works on behalf of the Institute/ BCCL and the workmen who may be employed by the Institute/BCCL and doing work in the vicinity of the works under the Purchase order. The Supplier shall also so arrange to perform his work as to minimize, to the maximum extent possible, interference with the work of other Suppliers and his workmen. Any injury or damage that may be sustained in the employees of the other Supplier's and the Institute/BCCL, due to the Supplier's work shall promptly be made good at his own expense. The Engineer shall determine the resolution of any difference or conflict that may arise between the Supplier and other Suppliers or between the Supplier and the workmen of the Institute in regard to their work. If the works of the Supplier is delayed because of any acts or omissions of another Contractor/Supplier, the Supplier shall have no claim against the Institute on that account other than an extension of time for completing his works.

7.2 The Engineer shall be notified promptly by the Supplier of any defects in the other Contractor's/Supplier's works that could affect the Supplier's works. The Engineer shall determine the corrective measures if any, required to rectify this situation after inspection of the works and such decisions by the Engineer shall be binding on the Supplier.

8.0 DISCPLINE OF WORKMEN

The Supplier shall adhere to the disciplinary procedure set by the Engineer in respect of his employees and workmen at site. The Engineer shall be at liberty to object to the presence of any representative or employees of the Supplier at the site, if in the opinion of the Engineer such employee has mis-conducted himself or be incompetent or negligent or otherwise undesirable and then the Supplier shall remove such a person objected to and provide in his place a competent replacement.

9.0 SUPPLIER'S FIELD OPERATION

9.1 The Supplier shall keep the Engineer informed in advance regarding his field activity plans and schedules for carrying out each part of the works. Any review of such plan or schedule or method of work by the Engineer shall not relieve the Supplier of any of his responsibilities towards the field activities. Such reviews shall also not be considered as an assumption of any risk or liability by the

Engineer or the Institute or any of his representatives and no claim of the Supplier will be entertained because of the failure or inefficiency of any such plan or schedule or method of work reviewed. The Supplier shall be solely responsible for the safety, adequacy and efficiency of plant and equipment and his erection methods.

9.2 The Supplier shall have complete responsibility for the conditions of the work site including the safety of all persons employed by him or his sub-supplier and all the properties under his custody during the performance of the work. This requirement shall apply continuously till the completion of the contract and shall not be limited to normal working hours. The construction review by the Engineer is not intended to include review of Supplier's safety measures in, on or near the works-site, and their adequacy or otherwise.

10.0 PHOTOGRAPHS AND PROGRESS REPORT

10.1 The Supplier shall furnish three (3) prints each to the Engineer of progress photographs of the work done at site. Photographs shall be taken as and when indicated by the Engineer or his representative. Photographs shall be adequate in size and number to indicate various stages of erection. Each photograph shall contain the date, the name of the Supplier and the title of the photograph.

10.2 The above photographs shall accompany the monthly progress report detailing out the progress achieved on all erection activities as compared to the schedules. The report shall also indicate the reasons for the variance between the scheduled and actual progress and the action proposed for corrective measures wherever necessary.

11.0 MAN-POWER REPORT

11.1 The Supplier shall submit to the engineer, on the first day of every month, a man hour schedule for the month, detailing the man hours scheduled for the month, skill wise and area-wise.

11.2 The Supplier shall also submit to the Engineer on the first day of every month, a man power report of the previous months detailing the number of persons scheduled to have been employed and actually employed, skill–wise and areas of employment of such labour.

12.0 PROTECTION WORK

The Supplier shall have total responsibility for protecting his works till it is finally taken over by the engineer. No claim will be entertained by the Institute or the

Engineer for any damage or loss to the Supplier's works and the Supplier shall be responsible for the complete restoration of the damaged works to its original condition to comply with the specifications and drawings. Should any such damage to the Supplier's works occur because of other party not under his supervision or control, the Supplier shall make his claim directly with the partly concerned. If dis-agreement or conflict or dispute develops between the Supplier and the other party or parties concerned regarding the responsibility for damage to the Supplier's works the same shall be resolved as per the provisions of the clause 7.0 above entitled co-operation with other Suppliers/Contractors. The Supplier shall not cause any delay in the repair of such damaged woks because of any delay in the resolution of such disputes. The Supplier shall proceed to repair the work immediately and the cause thereof will be assigned pending resolution of such dispute.

13.0 EMPLOYMENT OF LABOUR

13.1 The Supplier will be expected to employ on the work only his regular skilled employees with experience of this particular work. No female labour shall be employed after darkness, no persons below the age of eighteen years shall be employed.

13.2 The supplier shall obtain necessary labour license under Contract Labour Regulation & Abolition Act directly from statutory authorities.

13.3 All traveling expenses including provisions of all necessary transport to and from site lodging allowances and other payments to Supplier's employees shall be the sole responsibility of the Supplier.

13.4 The hour of work on the site shall be decided by the Institute and the Supplier shall adhere to it. Working hours will normally be eight (8) hours per day- Monday to Saturday.

13.5 Supplier's employees shall wear identification badges while on work at site.

13.6 In case the Institute becomes liable to pay any wages or dues to the labour or to any Government agency under any of the provisions of the Minimum Wages Act., Workmen compensation Act, Contract Labour Regulation & Abolition Act, CMPF Act/EPF Act or any other law due to act of omission of the Supplier, the Institute may make such payments and shall recover the same from the Supplier's bills.

14.0 FACILITIES TO BE PROVIDED BY THE INSTITUTE/BCCL

14.1 SPACE

The Supplier shall advise the Institute within thirty (30) days from the date of

acceptance of the Purchase order, about his exact requirement of space for his office, mess-rooms, storage area, pre-assembly and fabrication areas, labour colony area, toilets, etc. The above requirement shall be reviewed by the Engineer and space will be allotted to the Supplier for construction of his temporary structures like office, storage sheds, labour and staff colony and other utilities etc. for his own as well as his sub-supplier's use.

14.2 ELECTRICITY

The Supplier shall submit to the Engineer within thirty (30) days from the date of acceptance of the Purchase order, his electrical power requirements, if any, to allow the planning of the temporary electrical distribution by the engineer. The Supplier shall be provided with supply of electricity for the purposes of the order, only at one point in the project site. The Supplier shall make his own further distribution arrangement. All temporary wiring must comply with local regulations and will be subject to engineer's inspection and approval before connection to supply. Power supply for labour colonies shall also be provided at one point. The Supplier shall be charged for the power supplied at work site and labour colonies at prevalent rate of power supplied by State Electricity Board.

14.3 WATER

Supply of water will be made available for the construction purposes at an agreed single point within 100 metres of the work site. And further distribution will be the responsibility of the Supplier. The Supplier shall be charged for the water supplied at work site @ 1% of the value of civil works and shall be deducted from the Supplier's running /final bills.

15.0 FACILITIES TO BE PROVIDED BY THE SUPPLIER

15.1 Tools, tackles and scaffoldings

The Supplier shall provide all the construction equipment, tools, tackles and scaffoldings required for pre-assembly, erection, testing and commissioning of the equipment covered under the supply. He shall submit a list of all such materials to the Engineer before the commencement of pre-assembly at site. These tools and tackles shall not be removed from the site without the written permission of the engineer.

15.2 First-aid

15.2.1 The Supplier shall provide necessary first aid facilities for all his employees, representatives and workmen working at the site. Enough number of Supplier's personnel shall be trained in administering first-aid.

15.2.2 The Institute/BCCL will provide the Supplier in case of an emergency, the services of an ambulance for transportation to the nearest hospital.

15.3 Cleanliness

15.3.1 The Supplier shall be responsible for keeping the entire area allotted to him clean and free from rubbish, debris etc. during the period of contract. The Supplier shall employ enough number of special personnel to thoroughly clean his work area at least once in a day. All such rubbish and scrap material shall be stacked or disposed in a place to be identified by the engineer. Materials and stores shall be so arranged to permit easy cleaning of the area in areas where equipment might drip oil and cause damage to the floor surface, a suitable protective cover of a flame resistant, oil proof sheet shall be provided to protect the floor from such damage.

15.3.2 Similarly the labour colony, the offices and the residential areas of the Supplier's employees and workmen shall be kept clean and neat to the entire satisfaction of the engineer. Proper sanitary arrangement shall be provided by the Supplier, in the work areas, office and residential areas of the Supplier.

16.0 LINES AND GRADES

All the works shall be performed to the lines, grades and elevations indicated on the drawings. The Supplier shall be responsible to locate and layout the works. Basic horizontal and vertical control points will be established and marked by the Engineer at site at suitable points. These points shall be used as datum for the works under the supply contract. The Supplier shall inform the Engineer well-in advance of the times and places at which he wishes to do work in the area allotted to him, so that suitable datum points may be established and checked by the Engineer to enable the Supplier to proceed with his works. Any work done without being properly located may be removed and/or dismantled by the Engineer at Supplier's expense.

17.0 FIRE PROTECTION

17.1 The work procedures that are to be used during the erection shall be those which minimize fire hazards to the extent practicable. Combustible materials, combustible waste and rubbish shall be collected and removed from the site at least once each day. Fuels, oils and volatile or flammable materials shall be stored away from the construction and equipment and materials storage areas in safe containers. Untreated canvas paper, plastic or other flammable flexible

materials shall not at all be used at site for any other purposes unless otherwise specified. If any such materials are received with the equipment at the site, the same shall be removed and replaced with acceptable material before moving into the construction area or storage.

17.2 Similarly corrugated paper fabricated cartons etc, will not be permitted in the construction area either for storage or for handling of materials. All such materials used shall be water proof and flame resistant type. All the other materials such as working drawings, plants etc. which are combustible but are essential for the works to be executed shall be protected against combustion resulting from welding sparks, cutting flames and other similar fire sources.

17.3 All the Supplier's supervisory personnel and sufficient number of workers shall be trained for fire-fighting and shall be assigned specific fire protection duties. Enough of such trained personnel must be available at the site during the entire period of the contract.

17.4 The Supplier shall provide enough fire protection equipment of the types and number for the warehouses, office, temporary structures, labour colony area etc. Access to such fire protection equipment, shall be easy and kept open at all times.

18.0 SECURITY

The Supplier shall have total responsibility for all equipment and materials in his custody stored, loose, semi-assembled and/or erected by him at site. The Supplier shall make suitable security arrangements, including employment of security personnel to ensure the protection of all materials, equipment and works from theft, fire, pilferage and any other damages and loss. All materials of the Supplier shall enter and leave the project site only with the written permission of the Engineer in the prescribed manner.

19.0 SUPPLIER'S AREA LIMITS

The Engineer will mark-out the boundary limits of access roads, parking spaces, storages and construction areas for the Supplier and the Supplier shall not trespass the areas not so marked out for him. The Supplier shall be responsible to ensure that none of his personnel move out of the areas marked out for his operations. In case of such a need for the Supplier's personnel to work out of the areas marked out for him, the same shall be done only with the written permission of the engineer.

20.0 SUPPLIER'S CO-OPERATION WITH THE INSTITUTE/BCCL

In cases where the performance of the erection work by the Supplier affects the operation of the system facilities of the Institute/BCCL, such erection work of the Supplier shall be scheduled to be performed only in the manner stipulated by the Engineer and the same shall be acceptable at all times to the Supplier. The Engineer may impose such restrictions on the facilities provided to the Supplier such as electricity, water, etc. as he may think fit in the interest of the Institute and the Supplier shall strictly adhere etc. such restrictions and co-operate with the engineer. It will be the responsibility of the Supplier to provide all necessary temporary instrumentation and other measuring devices required during start-up and operation of the equipment systems which are erected by him. The Supplier shall also be responsible for flushing and initial filling of all the oil and lubricants required for the equipment furnished and erected by him, so as to make such equipment ready for operation. The Supplier shall be responsible for supplying such flushing oil and other lubricants unless otherwise specified elsewhere in these documents and specifications.

21.0 PRE-COMMISSIONING TRIALS AND INITIAL OPERATIONS

The pre-commission trials and initial operations of the equipment furnished and erected by the Supplier shall be the responsibility of the Supplier as detailed in relevant clauses in section General Terms and Conditions. The Supplier shall provide, in addition, test instruments, calibrating devices, etc. and the labour required for the successful performance of these trials. It is anticipated that the above test may prolong for a long time, the Suppliers workmen required for the above test shall always be present at site during such trials.

22.0 MATERIALS HANDLING AND STORAGE

22.1 All the equipment furnished under the supply and arriving at site shall be promptly received, unloaded and transported and stored in the storage spaces by the Supplier.

22.2 Supplier shall be responsible for examining all the shipment and notify the Engineer immediately of any damage, shortage, discrepancy, etc. for the purpose of engineer's information only. The Supplier shall submit to the Engineer every week a report detailing, all the receipts during the week. However, the Supplier shall be solely responsible for any shortages or damage in transit, handling and/or in storage and erection of the equipment at the site. Any demurrage, wharf age

and other such charges claimed by the transporters, railway etc. shall be to the account of the Supplier.

22.3 The Supplier shall maintain an accurate and exhaustive record detailing out the list of all equipment received by him for the purpose of erection and keep such record open for the inspection of the Engineer at any time.

22.4 All equipment shall be handled very carefully to prevent any damage or loss. No bare wire ropes, slings etc. shall be used for unloading and/or handling of the equipment without the specific written permission of the engineer. The equipment stored shall be properly protected to prevent damage either to the equipment or to the floor where they are stored. The equipment from the store shall be moved to the actual location at the appropriate time so as to avoid damage of such equipment at site.

22.5 All electrical panels, control gear, motors and such other devices shall be properly dried by heating before they are installed and energised. Motor bearings, slip rings, commutators and other exposed parts shall be protected against moisture ingress and corrosion during storage and periodically inspected. Heavy rotating parts in assembled conditions shall be periodically rotated to prevent corrosion due to prolonged storage.

22.6 All the electrical equipment such as motors, generators, etc. shall be tested for insulation resistance at least once in three months from the date of receipt till the date of commissioning and a record of such measured insulation values maintained by the Supplier. Such records shall be open for inspection by the engineer.

22.7 The Supplier shall ensure that all the packing materials and protection devices used for the various equipment during transit and storage are removed before the equipment are installed.

22.8 The consumable and other supplies likely to deteriorate due to storage must be thoroughly protected and stored in a suitable manner to prevent damage or deterioration in quality by storage.

22.9 All the materials stored in the open or duty location must be covered with suitable weather-proof and flameproof covering materials wherever applicable.

22.10 If the materials belonging to the Supplier are stored in areas other than those earmarked for him, the Engineer will have the right to get it moved to the area earmarked for the Supplier at the Supplier's cost.

22.11 The Supplier shall be responsible for making suitable indoor storage facilities to store all equipment which require indoor storage. Normally, all the electrical

equipment such as motors, control gear, generators, exciters and consumable like electrodes, lubricants etc. shall be stored in the closed storage space. The engineer, in addition, may direct the Supplier to move certain other materials which in his opinion will require indoor storage, to indoor storage areas which the Supplier shall strictly comply with.

23.0 CONSTRUCTION MANAGEMENT

23.1 The field activities of the Suppliers working at site will be co-ordinated by the Engineer and the engineer's decision shall be final in resolving any disputes or conflicts between the Supplier and other Contactors/Suppliers and tradesmen of the Institute/BCCL regarding scheduling and co-ordination of work. Such decision by the Engineer shall not be a cause for extra compensation or extension of time for the Supplier.

23.2 The Engineer shall hold weekly meetings of all the Suppliers working at site, at a time and a place to be designated by the engineer. The Supplier shall attend such meetings and take notes of discussions during the meeting and the decisions of the Engineer and shall strictly adhere to those decisions in performing his works. In addition to the above weekly meetings, the Engineer may call for other meetings either with individual Suppliers or with selected number of Suppliers/Contractors and in such a case the Supplier, if called will also attend such meetings.

23.3 Time is the essence of the Purchase order and the Supplier shall be responsible for performance this works in accordance with the specified construction schedule. If at any time, the Supplier is falling behind the schedule, he shall take necessary action to make good for such delays by increasing his work force or by working overtime or otherwise accelerate the progress of the work to comply with the schedule and shall communicate such actions in writing to the engineer, satisfying that his action will compensate for the delay. The Supplier shall not be allowed any extra compensation for such action.

23.4 The Engineer shall however not be responsible for provision of additional labour and/or materials or supply or any other services to the Supplier except for the co-ordination work between various Contractors/Suppliers as set out earlier.

24.0 FIELD OFFICE RECORDS

The Supplier shall maintain at his site office up-to-date copies of all drawings, specifications and other documents and any other supplementary data complete

with all the latest revisions thereto. The Supplier shall also maintain in addition the continuous record of all changes to the above documents, drawings, specifications, supplementary data, etc. effected at the field and on completion of his total assignment under the supply contract shall incorporate all such changes on the drawings and other engineering data to indicate as installed condition of the equipment furnished and erected under the supply of stores contract. Such drawings and engineering data shall be submitted to the Engineer in required number of copies. Daily work programme with progress of the previous day and deployment of labour related to work programme and attendance of workmen deployed during the previous day shall be maintained in a register. This register shall be signed by authorized representative of the Supplier which will then be checked and signed by the Institute's representative. Every three months this register shall be deposited to the Institute which shall then be Institutes property.

25.0 SUPPLIER'S MATERIALS BROUGHT ON TO SITE

25.1 The Supplier shall bring to site all equipment, parts, materials, including construction equipment, tools and tackles for the purpose of the works with intimation to the engineer. All such goods shall, from the time of their being brought vest in the Institute, but may be used for the purpose of the works only and shall not on any account be removed or taken away by the Supplier without the written permission of the engineer. The Supplier shall nevertheless be solely liable and responsible for any loss or destruction thereof and damage thereto.

25.2 The Institute shall have a lien on such goods for any sum or sums which may at any time be due or owing to him by the Supplier, under, in respect of or by reasons of the contract. After giving a fifteen (15) days' notice in writing of his intention to do so, the Institute shall be at liberty to sell and dispose of any such goods, in such manner as he shall think fit including public auction or private treaty and to apply the proceeds in or towards the satisfaction of such sum or sums due as aforesaid.

25.3 After the completion of the supply as per Purchase order, the Supplier shall remove from the site under the direction of the Engineer the materials such as construction equipment, erection tools and tackles, scaffolding etc. with the written permission of the engineer. If the Supplier fails to remove such materials, within fifteen (15) days of issue of a notice by the Engineer to do so then the Engineer shall have the liberty to dispose of such materials as detailed under clause 25.2 above and credit the proceeds thereto the account of the Supplier.

26.0 PROTECTION OF PROPERTY AND SUPPLIER'S LIABILITY

26.1 The Supplier shall be responsible for any damage resulting from his operations. He shall also be responsible for protection of all persons including members of public and employees of the Institute/BCCL and the employees of other Suppliers and sub-suppliers and all public and private property including structures, buildings, other plants and equipment and utilities either above or below the ground.

26.2 The Supplier will ensure provision of necessary safety equipment such as barriers, sign-boards, warning lights and alarms, etc. to provide adequate protection to persons and property. The Supplier shall be responsible to give reasonable notice to the Engineer and the Institute/BCCL of public or private property and utilities when such property and utilities are likely to get damaged or injured during the performance of his works and shall make all necessary arrangements with such Institutes, related to removal and/or replacement or protection of such property and utilities.

27.0 PAINTING

All exposed metal parts of the equipment including pipings, structure railing etc. wherever applicable, after installation unless otherwise surface protected, shall be first painted with at least one coat of suitable primer which matches the shop primer paint used, after thoroughly cleaning all such parts of all dirt, rust, scales, greases, oils and other foreign materials by wire brushing, scraping or sand blasting, and the same being inspected and approved by the Engineer for painting. Afterwards, the above parts shall be finished with two coats of alloyed resin machinery enamel paints. The quality of the finish paint shall be as per the standards of ISI or equivalent and to be of the colour as approved by the engineer.

28.0 INSURANCE

28.1 In addition to the conditions covered under the clause entitled insurance in general terms and conditions of this document, the following provisions will also apply to the portion of the works to be done beyond the Supplier's own or his sub-supplier's works.

28.2 Workmen's compensation insurance

This insurance shall protect the Supplier against all claims applicable under the workmen's compensation Act 1948 (Government of India).This policy shall also

cover the Supplier against claims for injury, disability, disease or death of his or his sub-supplier's employees, which for any reason are not covered under the Workmen's Compensation Act 1948. The liabilities shall not be less than

Workmen's compensation	As per statutory provisions
Employer's liability	As per statutory provisions

28.3 Comprehensive Automobile Insurance

This insurance shall be in such a form to protect the Supplier against all claims for injuries, disability, disease and death to members of public including the Institute's / BCCL's men and damage to the property of others arising from the use of motor vehicles during on or off the site operations, irrespective of the Instituteship of such vehicles.

28.4 Comprehensive General Liability Insurance

28.4.1 This insurance shall protect the Supplier against all claims arising from injuries, disabilities, disease or death of members of public or damage to property of others, due to any act or omission on the part of the Supplier, his agents, his employees, his representatives and sub-suppliers or from riots, strikes and civil commotion. The insurance shall also cover all the liabilities of the Supplier arising out of the clause entitled defence of suits under General Terms and Conditions (GTC) of this document.

28.4.2 The hazards to be covered will pertain to all the works which and areas where the Supplier, his sub-Suppliers, his agents and his employees have to perform work pursuant to the Purchase order.

28.5 The above are only illustrative list of insurance covers normally required and it will be the responsibility of the Supplier to maintain all necessary insurance coverage to the extent both in time and amount to take care of all his liabilities either direct or indirect, in pursuance of the Purchase order.

29.0 UNFAVOURABLE WORKING CONDITIONS

The Supplier shall confine all his field operations to those works which can be performed without subjecting the equipment and materials to adverse effects, during inclement weather conditions, like monsoon, storms, etc. and during other unfavorable construction conditions. No field activities shall be performed by the Supplier under conditions which might adversely affect quality and efficiency thereof, unless special precautions or measures are taken by the Supplier in a proper and satisfactory manner in performance of such works and with concurrence of the engineer. Such unfavourable construction conditions will in no

way relieve the Supplier of his responsibility to perform works as per the schedule.

30.0 PROTECTION OF MONUMENTS AND REFERENCE POINTS

The Supplier shall ensure that any finds such as relic, antiquity, coins, fossils, etc. which he might come across during the course of performance of his works either during excavation or elsewhere, are properly protected and handed over to the engineer. Similarly the Supplier shall ensure that the bench marks, reference points, etc., which are marked out either with the help of Engineer or by the Engineer shall not be disturbed in any way during the performance of his works. If any work is to be performed which disturb such references, the same shall be done only after these are transferred to other suitable locations under the direction of the engineer. The Supplier shall provide all necessary materials and assistance for such relocation of reference points etc.

31.0 WORK AND SAFETY REGULATIONS

31.1 The Supplier shall ensure proper safety of all the workmen, materials plant and equipment belonging to him or the BCCL or to others, working at or near the site. The Supplier shall also be responsible for provision of all safety notices and safety equipment required both by the relevant legislation and the Engineers he may deem necessary.

31.2 The Supplier will notify well in advance to the Engineer of his intention to bring to the site any container filled with liquid or gaseous fuel or explosive or petroleum substance or such chemicals which may involve hazards. The Engineer shall have the right to prescribe the conditions, under which such container is to be stored, handled and used during the performance of the works and the Supplier shall strictly adhere to and comply with such instructions. The Engineer shall have the right at his sole discretion to inspect any such container of such construction plant/equipment for which material in the container is required to be used and if in his opinion, is use is not safe, he may forbid its' use. No claim due to such prohibition shall be entertained by the Institute. Nor the Institute shall entertain any claim of the Supplier towards additional safety provisions/ conditions to be provided or constructed as per engineer-in-charge's instructions.

Further any such decision of Engineer shall not, in any way, absolve the Supplier of his responsibilities, and in case, use of such a container or entry thereof into the site area is forbidden by engineer-in-charge, the Supplier shall

use alternative methods with approval of Engineer without any cost implication to BCCL or extension of work schedule.

31.3 Where it is necessary to provide and/or store petroleum products or petroleum mixtures and explosives, the Supplier shall be responsible for carrying out such provision and/or storage in accordance with the rules and regulations laid down in Petroleum Act 1934, Explosives Act 1948, and Petroleum and Carbide of Calcium Manual Published by the Chief Inspector of Explosives of India. All such storage shall have prior approval of the Engineer. In case, any approvals are necessary from the Chief Inspector (Explosive) or any statutory authorities, the Supplier shall be responsible for obtaining the same.

31.4 All equipment used in construction and erection by Supplier shall meet Indian, International Standards and where such standards do not exist, the Supplier, shall ensure these to be absolutely safe. All equipment shall be strictly operated and maintained by the Supplier in accordance with manufacture's operation manual and safety instructions as per Guidelines/Rules of BCCL in this regard.

31.5 Periodical Examinations and all tests for all lifting/hoisting equipment and tackles shall be carried out in accordance with the relevant provisions of Factories Act 1948, Indian Electricity Act 1910 and associated Laws/Rules enforced from time to time. A register of such examinations and tests shall be properly maintained by the Supplier and will be promptly produced as and when desired by Engineer by the person authorized by him.

31.6 The Supplier shall be fully responsible for the safe storage of his and his sub-suppliers radio-active sources in accordance with BARC/DAE Rules and other applicable provisions. All precautionary measures stipulated by BARC/DAE in connection with use, storage and handling of such material will be taken by Supplier.

31.7 The Supplier shall provide suitable safety equipment of prescribed standard to all employee and workmen according to the need, as may be directed by Engineer who will also have right to examine these safety equipment to determine their suitability, reliability, acceptability and adaptability.

31.8 Where explosives are to be used, the same shall be used under the direct control and supervision of an expert, experienced, qualified and competent persons strictly in accordance with the code practices/rules framed under Indian Explosives Act pertaining to handling, storage and use of the explosives.

31.9 The Supplier shall provide safe working conditions to all workmen and employees at the site including safe means of access, railings, stairs, ladders, scaffoldings

etc. The scaffoldings, stairs, ladders etc. shall be erected under the control and supervision of an experienced and competent person. For erection, good and standard quality of material only shall be used by the Supplier.

31.10 The Supplier shall not interfere or disturb electric fuses, wiring and other electrical equipment belonging to the Institute/BCCL or other Suppliers under any circumstances, whatsoever, unless expressly permitted in writing by the BCCL to handle such fuses, wiring or electrical equipment.

31.11 Before the Supplier connects any electrical appliances to any plug or socket belonging to the other Supplier or BCCL, he shall:

a. Satisfy the Engineer that the appliances is in good working condition
b. Inform the Engineer of the maximum current rating, voltage and phases of the appliances.
c. Obtain permission of the Engineer detailing the sockets to which the appliances may be connected.

31.12 The Engineer will not grant permission to connect until he is satisfied that:

a. The appliance is in good condition and is fitted with a suitable plug.
b. The appliance is fitted with a suitable cable having two earth conductors, one of which shall be an earthed metal sheath surrounding the cores.

31.13 No electric cable is in use by the Supplier /Institute/BCCL will be disturbed without prior permission. No weight of any description will be imposed on any cable and no ladder or similar equipment will rest against or attached to it.

31.14 No repair work shall be carried out on any live equipment. The equipment must be declared safe by Engineer and a permit to work shall be issued by Engineer before any repair work is carried out by the Supplier. While working on electric lines/equipments whether alive or dead, suitable type and sufficient quantity of tools will have to be provided by Supplier to electricians/workmen/officers..

31.15 The Supplier shall employ necessary number of qualified, full time electricians/ electrical supervisors to maintain in his temporary electrical installations.

31.16 The Supplier employing more than 250 workmen whether temporary, casual, probationer, regular or permanent or on contract, shall employ at least one full time officer exclusively as safety officer to supervise safety aspects of the equipment and workmen who will co-ordinate with the project safety officer. In case of work being carried out through sub-supplier's, the sub-supplier's workmen/employees will also be considered as the Supplier's employees/workmen for above purpose. The name and address of a such safety officer of Supplier will be promptly informed in writing to Engineer with a copy to

safety officer-in-charge before he starts work or immediately after any change of the incumbent is made during currency of the supply.

31.17 In case any accident occurs during the construction/erection or other associated activities undertaken by the Supplier thereby causing any minor or major or fatal injury to his employees due to any reason whatsoever, it shall be the responsibility of the Supplier to promptly inform the same to the Institute's/ BCCL's Engineer in prescribed form and also to all the authorities envisaged under the applicable laws.

31.18 The Engineer shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/or property, and/or equipment. In such cases, the Supplier shall be informed in writing about the nature of hazards and possible injury/accident and he shall comply to remove short comings promptly. The Supplier after stopping the specific work, can, if felt necessary, appeal against the order of stoppage of work to the General Manger of the project / Director of Institute within 3 days of such stoppage of work and decision of the project G.M./ Director of Institute in this respect shall be conclusive and binding on the Supplier.

31.19 The Supplier shall not be entitled for any damages/compensation for stoppage of work due to safety reasons as provided in Clause 31.18 above and the period of such stoppage of work will not be taken as an extension of time for completion of work and will not be the ground for waiver of levy of liquidated damages.

31.20 The Supplier shall follow and comply with all the BCCL safety rules relevant provisions of applicable laws pertaining to the safety of workmen, employees, plant and equipment as may be prescribed from time to time without demur, protest or content or reservation. In case of any inconformity between statutory requirement and the BCCL safety rules referred above, the later shall be binding on the Supplier unless the statutory provisions are more stringent.

31.21 If the Supplier fails in providing safe working environment as per the BCCL safety rules or continues the work even after being instructed to stop work by Engineer as provided in Clause 31.18 above, the Supplier shall promptly pay to the Institute/BCCL, on demand compensation at the rate of Rs.5,000/- per day or part there of till the instruction are complied with and so certified by Engineer. However in case of accident taking place causing injury to any individual, the provisions contained in Clause 31.22 shall also apply in addition to compensation mentioned in this Clause.

31.22 If the Supplier does not take all safety precautions and/or fails to comply with the safety rules as prescribed by the Institute/BCCL or under the applicable laws for the safety of the equipment and plant and for the safety of personnel and the Supplier does not prevent hazardous condition which cause injury to his own employees or employees of other Suppliers, or the Institute/BCCL employees or any other person who are at site or adjacent thereto, the Supplier shall be responsible for payment of compensation under the relevant provisions of the workmen's compensation act and rules framed thereunder or any other applicable laws as applicable from time to time.

Permanent disablement shall have same meaning as indicated in workmen's compensation act. The compensation mentioned above shall be in addition to the compensation payable to the workmen/employees under the relevant provisions of the workmen's compensation act and rules framed there under or any other applicable laws as applicable from time to time.

In case the Institute/BCCL is made to pay such compensation then the Supplier is liable to reimburse the Institute/BCCL such amount.

32.0 CODE REQUIREMENTS

The erection requirements and procedures to be followed during the installation of the equipment shall be in accordance with the relevant Regulations, ASME codes and accepted good engineering practice, the engineer's drawings and other applicable Indian recognized codes and the laws and regulations of the Government of India.

33.0 FOUNDATION DRESSING AND GROUTING

33.1 The surfaces of foundations shall be dressed to bring the top surface of the foundations to the required level, prior to placement of equipment/equipment bases on the foundations.

33.2 All the equipment bases and structural steel base plates shall be grouted and finished as per these specifications unless otherwise recommended by the equipment manufacturer.

33.3 The concrete foundation surfaces shall be properly prepared by chipping, grinding as required to bring the type of such foundation to the required level, to provide the necessary roughness for bondage and to assure enough bearing strength. All laitance and surface film shall be removed and cleaned.

33.4 GROUTING MIX

The grouting mixtures shall be composed of Portland cement, sand and water. The Portland cement to be used shall conform to ISI No.269 or equivalent, sand shall conform to ISI No. 383/2386 or equivalent. The grout proportions for flat based where the grouting space does not exceed 35 mm shall be 50 Kg bag of cement to 75 Kg of sand. Only the required quantity of water shall be added so as to make the mix quaky and flowable and the mix shall not show excess water on top when it is being puddle in place. For thicker grout beds upto 65 mm, the amount of sand shall be increased to 105 Kg per bag of cement. Bases which are hollow and are to be filed full of grouting shall be filled to a level of 25 mm above the outside rim with a mortar mix in the volumetric proportions of one bag of cement and 1.5 bags sand and 1.5 part 6 mm granite gravel. An acceptable plasticiser may be added to the grout mixes in a proportion recommended by the plasticisers manufacturer. All such grouts shall be thoroughly mixed for not less than five minutes in an approved mechanical mixer and shall be used immediately after mixing.

33.5 PLACING OF GROUT

33.5.1 After the base has been prepared, its alignment and level has been checked and approved and before actually placing the grout a low dam shall be set around the base at a distance that will permit pouring and manipulation of the grout. The height of such dam shall be at least 25mm above the bottom of the base. Suitable size and number of chains shall be introduced under the base before placing the grout, so that such chains can be moved back and forth to push the grout into every part of the space under the base.

33.5.2 The grout shall be poured either through grout holes it provided or shall be poured at one side or at two adjacent sides giving it a pressure head to make the grout move in a solid mass under the base and out in the opposite side. Pouring shall be continued until the entire space below the base is thoroughly filled and the grout stands at least 25mm higher all around than the bottom of the base. Enough care should be taken to avoid any air or water pockets beneath the bases.

33.6 FINISHING OF THE EDGES OF THE GROUT

The poured grout should be allowed to sand undisturbed until it is well set. Immediately thereafter, the dam shall be removed and grout which extends beyond the edges of the structural or equipment base plates shall be out off flush and removed. The edges of the grout shall then be pointed and finished with 1:2

cement mortar pressed firmly to bond with the body of the grout and smoothed with a tool to present a smooth vertical surface. The work shall be done in a clean and scientific manner and the adjacent floor spaces, exposed edges of the foundations, and structural steel and equipment base plates shall be thoroughly cleaned of any spillage of the grout.

33.7 CHECKING OF EQUIPMENT AFTER GROUTING

After the grout is set and cured, the Supplier shall check and verify the alignment of equipment, alignment of shafts of rotating machinery, the slopes of all bearing pedestals, centring of rotors with respect to their sealing bores, couplings, etc. as applicable and the like items to ensure that no displacement had taken place during grouting. The values recorded prior to grouting shall be used during such post grouting check-up and verifications. Such pre and post grout records of alignment details shall be maintained by the Supplier in a manner acceptable to the engineer.

34.0 SHAFT ALIGNMENTS

All the shafts of rotating equipment shall be properly aligned to those of the matching equipment to as perfect and accuracy as practicable. The equipment shall be free from excessive vibration so as to avoid over-heating of bearings or other conditions which may tend to shorten the life of the equipment. All bearings, shafts and other rotating parts shall be thoroughly cleaned and suitably lubricated before starting.

35.0 DOWELING

All the motors and other equipment shall be suitably doweled after alignment of shafts with tapered machined dowels as per the direction of the engineer.

36.0 CHECK OUT OF CONTROL SYSTEMS / POWR SUPPLY

After completion of wiring, cabling furnished under separate specifications and laid and terminated by the Institute, the Supplier shall check out the operation of all control systems for the equipment furnished and installed under these specifications and documents. The Supplier shall get the drawings pertaining to the control system, power supply etc. approved from Directorate General of Mine Safety (DGMS) or any other appropriate authority as necessary, wherever required as per the rules and regulations of the Indian Mines Act governed by D.G.M.S.

37.0 COMMISSIONING SPARES

The Supplier shall make arrangement for an adequate inventory at site of necessary commissioning spares prior to commissioning of the equipment furnished and erected so that any damage or loss during these commissioning activities necessitating the requirements of spares will not come in the way of timely completion of the works under the contract.

38.0 CABLING

38.1 All cables shall be supported by conduits or cable tray run in air or in cable channels. These shall be installed in exposed runs parallel or perpendicular to dominant surfaces with right angle turn made of symmetrical bends or fittings. When cables are run on cable trays, they shall be clamped at a minimum interval of 2000 mm or otherwise as directed by the engineer.

38.2 Each cable, whether power or control, shall be provided with a metallic or plastic of an approved type, bearing a cable reference number indicated in the cable and conduit list (prepared by the Supplier), at every 5 m. run or part there of and at both ends or the cable adjacent to the terminations. Cable routing is to be done in such a way that cables are accessible for any maintenance and for easy identification.

38.3 Sharp bending and kinking of cables shall be avoided. The minimum radii for PVC insulated cables 1100 V grade shall be 15 D, where D is the overall diameter of the cable. Installation of other cables like high voltage, coaxial, screened, compensating, mineral insulated shall be in accordance with the cable manufacturer's recommendations. Wherever cables cross roads and water, oil, sewage or gas lines, special care should be taken for the protection of the cables in designing the cable channels.

38.4 In each cable run some extra length shall be kept at a suitable point to enable one to two straight through joints to be made should the cable develop fault at a later date.

38.5 Control cable terminations shall be made in accordance with wiring diagrams, using identifying codes subject to engineer's approval. Multi-core control cable jackets shall be removed as required to train and terminate the conductors. The cable jacket shall be left on the cable, as far as possible, to the point of the first conductor branch. The insulated conductors from which the jacket is removed shall be neatly twined in bundles and terminated. The bundles shall be firmly but not tightly tied utilizing plastic or nylon ties or specially treated fungus protected

cord made for this purpose. Control cable conductor insulation shall be securely and evenly cut.

38.6 The connectors for control cables shall be covered with a transparent insulating sleeve so as to prevent accidental contact with ground or adjacent terminal and shall preferably terminate Elmex terminals and washers. The insulating sleeve shall be fire resistant and shall be long enough to over-pass the conductor insulation. All control cables shall be fanned out and connection made to terminal blocks and test equipment for proper operation before cables are corded together.

FINANCIAL BID FORM

INCLUDING PRICE

Financial Bid Form

(On the Letter Head of the firm submitting the Bid Document)

To
The Director,
Central Institute of Mining & Fuel Research
P.O.DHANBAD,
DISTT: DHANBAD -826001,
INDIA

Ref: Tender No.CIMFR/PUR/--(--)2009 dated --.--.2009

Sir,

Having examined the bidding documents and having submitted the technical bid for the same, we, the undersigned, hereby submit the Financial Bid for supply of goods and services as per the schedule of requirements and in conformity with the said bidding documents.

We hereby offer to supply the Goods/Services at the prices and rates mentioned in the Financial Bid.

We do hereby undertake that, in the event of acceptance of our bid, the supply of Goods/Services shall be made as stipulated in the schedule to the Bid document and that we shall perform all the incidental services.

The prices quoted are inclusive of all charges including installation and commissioning charges at site of Madhuband Colliery, Barora Area, Dhanbad.

We enclose herewith the complete Financial Bid as required by you. This includes:

Financial Bid Letter

- ü Estimated quantity and Financial Bid Analysis
- ü Statement of Deviations from Financial terms and conditions

We agree to abide by our offer for a period of 6(six) calendar months from the date fixed for opening of the bid documents and that we shall remain bound by a communication of acceptance within that time. We have carefully read and understood the terms and condition of the bid document and we do hereby undertake to supply as per these terms and conditions. The Financial Deviation are only those mentioned in the statement of deviation from financial terms and conditions.

Certified that the bidder is: A sole proprietorship firm and the person signing the bid document is the sole proprietor/constituted attorney of sole proprietor.

Or

A partnership firm and the person signing the bid document is a partner of the firm and he has authority to refer to arbitration disputes concerning the business of the

partnership by virtue of the partnership agreement/by virtue of general power of attorney.

Or

A company and signing the bid document is the constituted attorney.

(Note: Delete whatever is not applicable. All corrections/deletions should invariably be duly attested by the person authorized to sign the bid document).

We do hereby undertake, that until a formal work order is prepared and executed, this bid, together with your written acceptance thereof and placement of letter of intent awarding the work order, shall constitute a binding contract between us. Dated this day of 2009

Signature of Bidder

Details of enclosures

Full Address:

Telephone No.

Telegraphic Address:

E-mail:

COMPANY SEAL

PRICE SCHEDULE - Estimated Quantity and Financial Bid Analysis

Price break-up of different sub-heads for turn-key Execution

A. SURVEY, SOIL TESTING & DESIGN ENGINEERING COST

Item No.	Sub-heads/Item Description	Amount
1.	Detailed survey of the area within the battery limit & submission of reports	
2.	Sub-soil exploration field & laboratory testing of samples & submission of report	
3.	Design Engineering Cost.	
4.	Documentation as per tender specification.	
	Sub-total of A	

B. PRICE BREAK-UP FOR CIVIL AND STRUCTURAL WORKS

Item No.		Sub-heads/Item Description	Amount
1.		Civil works	
2.	i)	Road	
	ii)	Drains	
	iii)	Site Development	
3.		Structural Steel Work (Supply / Fabrication)	
4.		Structural Steel Work (Erection)	
		Sub- Total of B	

C1. PRICE BREAK UP OF PLANT & MACHINERY

Sl No.	Sub-head	Price	Excise duty	Sales tax	Packing Insurance	Transp-ortation	Any Other duty	Total
C.1 - SUPPLY :								
1.	MECHANICAL							
2.	ELECTRICAL							
3.	CONTROL & INSTRUMENTATION							
4.	COMMUNICATION							
5.	PAY LOADER							
6.	AUXILIARY							
	i) Dust Control							
	ii) Fire Fighting							
	iii) Pressurization							
	iv) Others							
	Sub-Total							
7.	SPARES (Total)*							

* The price of supply per unit of spares to be indicated separately in the price bid as annexure in the above format.

C2. PRICE BREAK UP OF PLANT & MACHINERY

Sl No.	Sub-head	Price	Any other duty	Total
C2 - ERECTION INSTALATIONN & COMMISSINING OF PLANT & MACHINERY				
1.	MECHANICAL			
2.	ELECTRICAL			
3.	CONTROLS & INSTRUMENTATION			
4.	COMMUNICATION			
5.	PAY LOADER			
6.	AUXILIARY			
	i) Dust Control			
	ii) Fire Fighting			
	iii) Pressurization			
	iv) Others			
Sub-Total				

D. Price Break-up for **performance trial** run of the plant (for pumping 1,40,500 m^3 slurry in nine months time)

(a) **Operating price** of the plant during the performance trial run period in Rs. /m^3 with detailed break-up.

(b) **Maintenance price** of the plant during the performance trial run period in Rs. /m^3 with detailed break-up.

E. Attach sheet giving detailed Technical Specification and deviations for the suggested systems.

NOTE

i) The price quoted should be inclusive of all charges including all applicable taxes, Octroi, freight and handling charges, and all other miscellaneous expenses.

ii) In case of discrepancy between unit price and total price, the unit price will prevail.

Signature of the bidder

Name :

Place :

Date :

Address :

Company Seal

STATEMENT OF FINANCIAL DEVIATIONS

Following are the financial deviations and variation(s) from the exceptions to the specifications and documents for the Bid document. These deviation(s) and variation(s) are exhaustive. Except these deviation(s) and variation(s), the entire work shall be performed as per your specifications and documents.

Sl	Section No.	Clause No.	Statement of Deviations / Variations

Signature of the bidder

Name:

Place:

Date:

Address:

Company Seal

FORMS OF SECURITIES

FORMS OF SECURITIES

BID SECURITY FORM

WHEREAS .....
(Hereinafter called "the Bidder") has submitted its bid dated .....(Date if submission of bid) for the supply of (Name and/or description of the goods)(Hereinafter called "the bid").

KNOW ALL PEOPLE by these presents that WE…… (Name of bank) of…… (Name of country), having our registered office at (address & phone & fax no. of bank) (hereinafter called "the bank"), are bound unto……(Name of Purchaser) (hereinafter called "the Purchaser") in the sum of …….. For which payment will and truly to be made to the said purchaser, the Bank binds itself, its successors, and assigns by these presents, Sealed with the common Seal of the said Bank this ……Day ……..of 200….

THE CONDITIONS of this obligation are:

1. If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or
2. If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity:
   a) Fails or refuses to execute the Contract Form if required; or
   b) Fails or refuses to furnish the performance security, in accordance with Instruction to Bidders.

We undertake to pay the purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is owing to it, owing to the occurrence or one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee shall remain in force up to and including one hundred and eighty (180) days after the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

PERFORMANCE SECURITY FORM

To: _____(Name of Purchaser) WHEREAS _____(Name of Supplier) hereinafter called "the Supplier" has undertaken, in pursuance of Contract No. _____ dated _____ 2007 to supply _____ (Description of Goods and Services) hereinafter called "the Order" AND WHEREAS it has been stipulated by you in the said order that the Supplier shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with the Supplier's performance obligations in accordance with the order.

AND WHEREAS we have agreed to give the Supplier a Guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of_____ (Amount of the Guarantee in Words and Figures) and we undertake to pay you, upon your first written demand declaring the sum or sums within the limit of_____ (Amount Guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the day of_____ 2009

Signature and Seal of Guarantors

Date

Address

All correspondence with reference to this guarantee shall be made at the following address:

(Name & address of the lab) _____

_____

_____

TENDER DRAWINGS

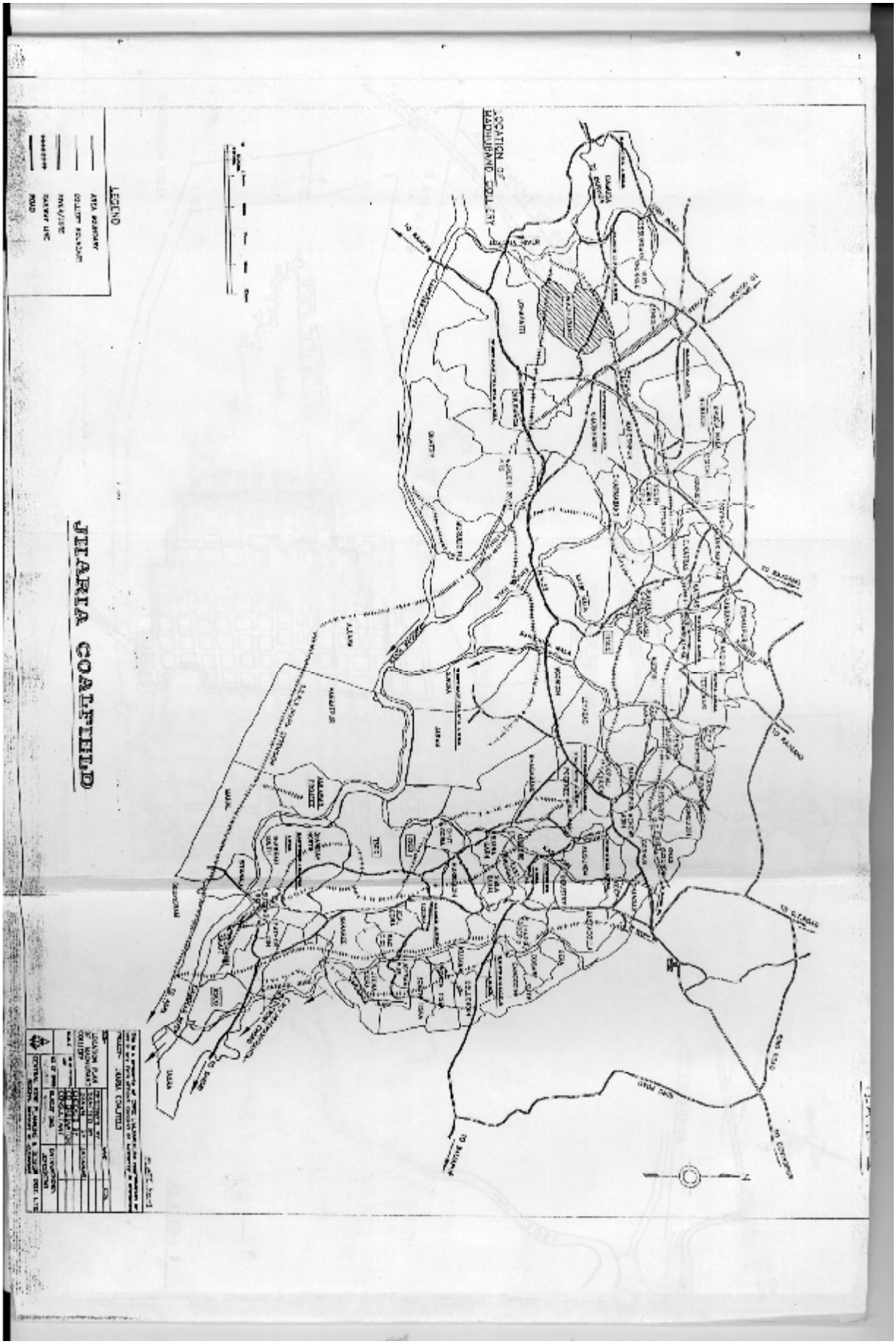

Plate 1; Jharia Coalfields (Plot/Print Size of Scanned Area): Width = 29.67 cm and Height = 42.01)

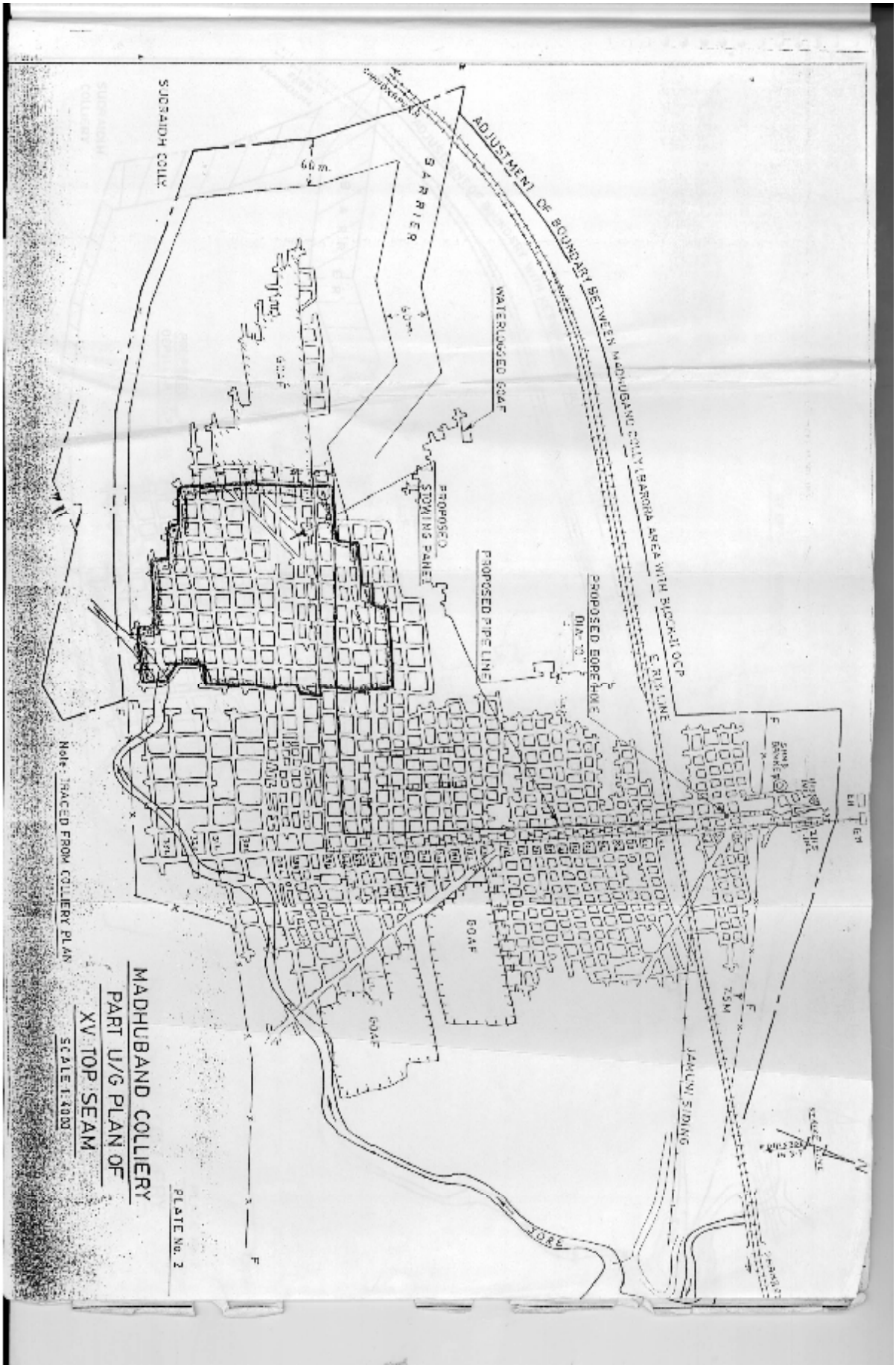

Plate 2: Madhuband Colliery (Plot/Print Size of Scanned Area): Width = 29.67 cm and Height = 42.01)

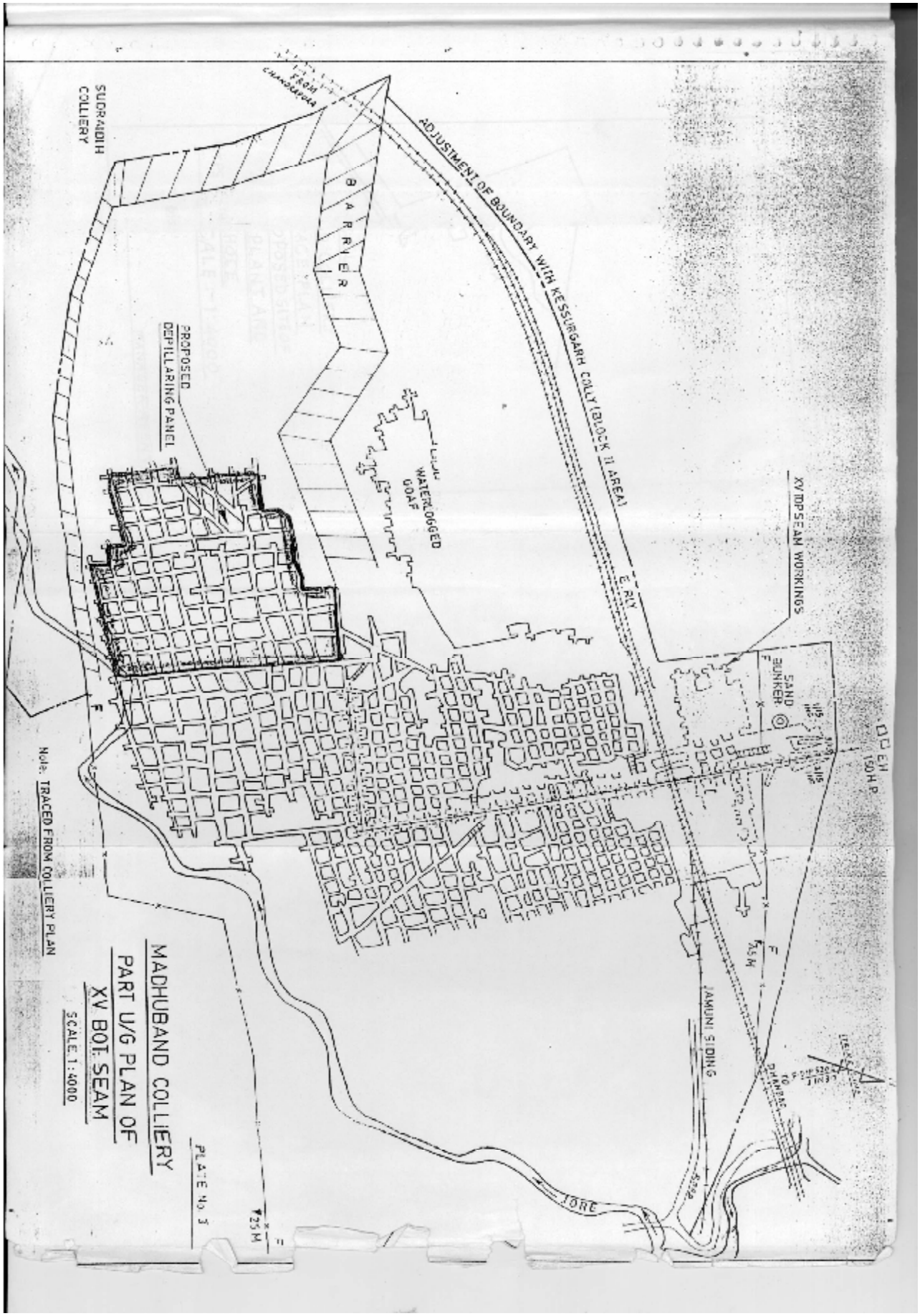

Plate 3: Madhuband Colliery (Plot/Print Size of Scanned Area): Width = 29.67 cm and Height = 42.01)

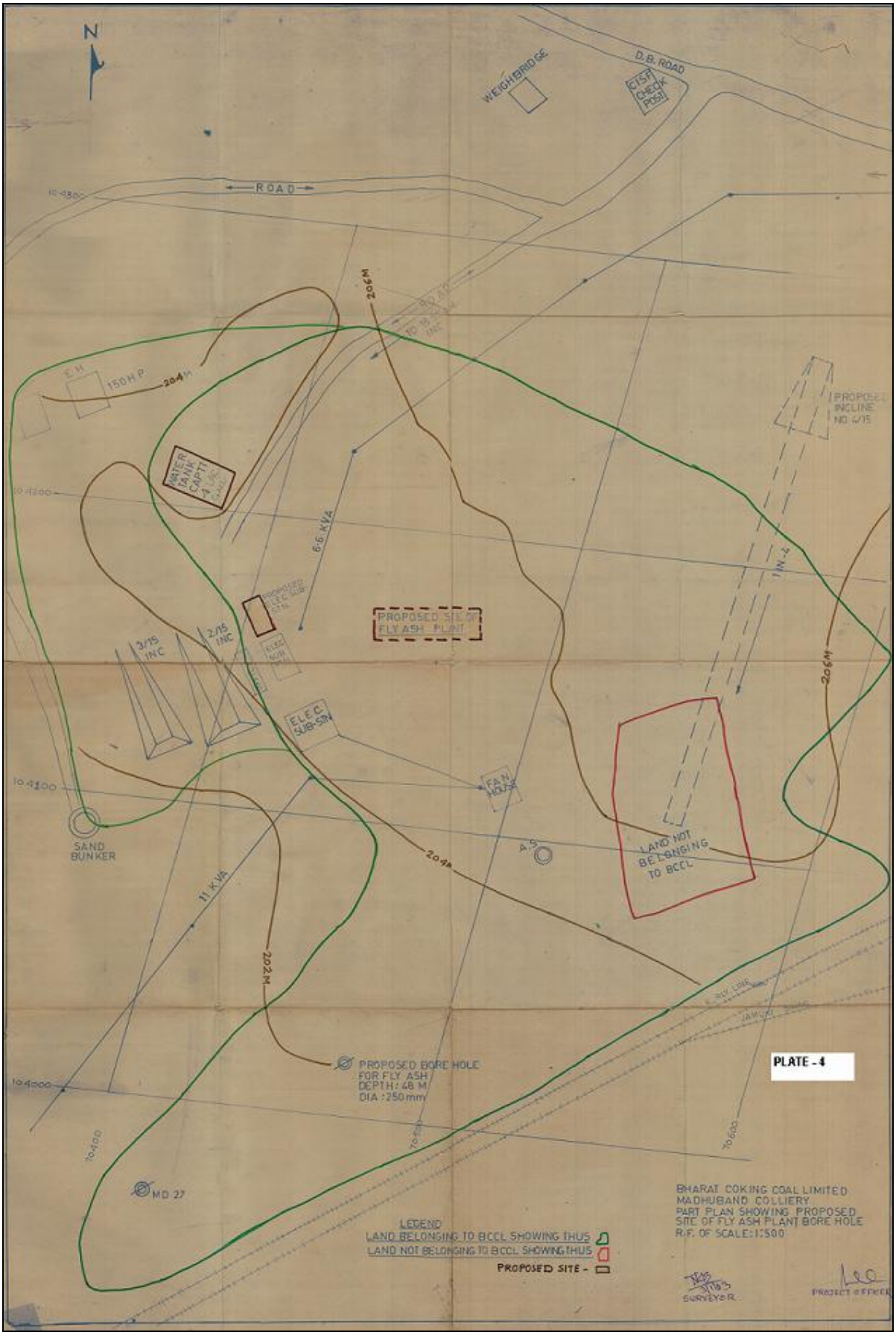

Plate 3: Location of Land / layout (Size of Scanned Area from border to border): Width = 57 cm; and Height = 86.7cm