HEAVY ENGINEERING CORPORATION LIMITED

PROJECT DIVISION

PURCHASE DEPARMENT
Open Tender

Tender Enquiry No. : HEC/PROJ/PUR/BLOCK B/01 Date: 23.03.2021

Dear Sir,

We request you to submit your most competitive offer for the following items as per the given schedule.

ENQUIRY SCHEDULE

Sl No.	Description	Unit of Measure	Qty	Remarks
1.	Design, engineering, manufacture, inspection, assembly, shop testing, painting, packing, forwarding, transportation and supply at site, supervision of erection, testing, commissioning, trial run and PG Test of ***01 set of Semi Mobile Crushing Plant (Skid Mounted)*** complete with all structural, mechanical, electrical and auxiliaries for Coal Handling Plant, Block B Project, Northern Coalfields Limited.	Set	1	Specification shall be exactly in line with Enclosure-II (Technical specification)
2.	The scope of work includes design, engineering, manufacture, inspection, assembly, shop testing, painting, packing, forwarding, transportation and supply at site, supervision of erection, testing, commissioning, trial run and PG Test of ***01 no. of Secondary Sizer*** complete with all structural, mechanical, electrical and auxiliaries for Coal Handling Plant, Block B Project, Northern Coalfields Limited	No	1	

Schedule of tender receipt of Offer: : 17.04.2021 up to 3.00 PM
Schedule of tender opening of Techno-commercial bid: : 19.04.2021 at 3.00 PM
Price Bid opening date : Will be intimated later through E-tender Portal only.

Tender is available on our website in e-procurement section i.e. https://etenders.gov.in/eprocure/app . Approved Bidders may go through the tender document. Bidders are required to upload the bid along with all supporting documents including priced part (BoQ) only on the e-tendering website (https://etenders.gov.in/eprocure/app), on or before the due date and time for submission of bid.

EMD/Tender fee to be submitted and sealed in separate envelop superscribed Tender No. & Due date of offer submission.

Thanking you,

(C.S.Prasad)
DGM I/c /Purchase/PROJECT DIVISION
Heavy Engineering Corporation Limited HMBP ADM. BUILDING
(ANNEXE) DHURWA, RANCHI 834004
Ph.06512401266/240056 Fax. : 0651 – 2401533
E-mail: projectpurchase@hecltd.com

INSTRUCTIONS TO TENDERER (ITT)

All bidders are requested to go through the all parts of Tender Document very carefully in detail before submitting the offer.

1.0 Offer has to be submitted only online at E-tender Portal: www.etenders.gov.in. Offers submitted in Hard copy shall not be considered, however tender Cost, Earnest Money Deposit (Original Demand Draft/bank Guarantee) may be submitted to us in hard copy. Scan copy of tender Cost & EMD to be uploaded in part-1 of offer i.e technocommercial bid.

2.0 Prospective Tenderers are advised to get register themselves only on at NIC e-tender portal i.e. https://etenders.gov.in/eprocure/app, obtain 'User ID' & 'Password' and go through the 'Self Help files' available in the Home Page after log in to the portal http://etenders.gov.in. They should also obtain Class III Digital Signature Certificate (DSC) in parallel which is essentially required for submission of their application. Detailed instructions for online bid submission are attached in **annexure-3.** No registration fee would be charged from the bidders.

NOTE:

i. Please note that there is no provision to take out the list of parties downloading the tender document from the above referred web site. As such, tenderers are requested to see the website once again before due date of tender opening to ensure that they have not missed any corrigendum uploaded against the said tender after downloading the tender document. The responsibility of downloading the related corrigenda, if any, will be that of the downloading parties.

ii. No separate intimation in respect of corrigendum to this NIT(if any) will be sent to tenderers who have down loaded the documents from website. Please see website i.e.,http://www.hecltd.com or http://www.etenders.gov.in

iii. HEC reserves the right to extend / change the schedule of any activity by intimating the bidders through a notification on the e-tender portal only.

The Following two covers shall be submitted through online CPP - portal by the bidders. Last date and time of submission of bids (cover I, II) is as per given dates. **No other modes of bid submission is acceptable.**

Cover – I: - Containing techno-commercial bid and Technical Specification (As per ITT, Enclosure-I (Commercial terms & Conditions) and Enclosure-II (Technical Specification))

Scan copy of documents to be uploaded required as per Annex- 1 – Proof of Tender Fee submission document (DD/BG/NEFT/RTGS), SSI/NSIC/MSME certificate (for exemption of tender fee) and other relevant documentary evidence (PO copy, performance certificate etc.)

3.0 Cover - II: Price Bid (BoQ)

The tenderer shall upload the digitally signed Schedule of price bid in the form of BOQ.xls

Bidders may please note, the schedule of quantities is attached in the portal. The same (BOQ) shall be downloaded and be filled in the editable (un protected) cells only and they should necessarily submit their financial bids in the format provided after entering the financial quotes, name of the bidder etc.

4.0 <u>Bid Opening Process is as below:-</u>

Cover-I: Technical bid opening date will be as per given dates. If any clarification is needed from the bidder about the deficiency in his uploaded documents in Cover-I, the bidder will be asked to provide it through Short fall documents folder in e-tendering portal. The bidder shall upload the requisite clarification / documents within time specified by HEC, failing which tender will be liable for rejection. Cover-II: The financial bids of the contractors / firms

found to be meeting the qualifying requirements and technical criteria shall be intimated through portal. (Depending on Cover-I evaluation any changes in the date shall be intimated through e-tendering portal).

5.0 Earnest Money Deposit – The offers submitted shall be considered valid only when scan copy of EMD document .The scan copy of EMD document in form of DD/BG/Receipt of NEFT/RTGS have to be uploaded with the Techno- Commercial bid (Part 1) only.

Exemption of EMD shall be applicable on submission of valid SSI/NSIC/MSME certificate and as per prevailing govt guidelines. SSI/NSIC/MSME Certificate to be uploaded in Techno Commercial Part 1 . EMD detail as per the details mentioned below

a. The Bidder shall submit EMD of **Rs. 21,35,000/-** in the form of Bank Guarantee (in prescribed enclosed proforma at *annexure-4***)** / Bank Draft in favour of Heavy Engineering Corporation Limited, Ranchi from a Nationalised Bank / Scheduled Indian Bank.
b. The validity of the Bank Guarantee shall be for a period of 120 days beyond the validity of the Bid.
c. Tenders not accompanied with EMD shall be liable for rejection

The original EMD in form of DD/BG/Receipt of NEFT/RTGS should be reached us though courier or in person before the opening date of tender in following adress

To , I/C /Purchase
PROJECT DIVISION
HMBP ADM. BUILDING (ANNEXE)
DHURWA, RANCHI- 834004
Fax. No. 0651-24015
Ph. No. 0651-2401266 / 2400562

Refund of EMD: The Earnest Money will be retained in the case of successful tenderer. The Earnest Money deposited by the successful bidder will be refunded on receipt of required Security Deposit from the bidder. EMD of the unsuccessful tenderers shall be refunded immediately after finalization of the tender. EMD shall be forfeited if any tenderer withdraw their offer before finalization of the tender.

6.0 Tender Fee of **Rs. 3000/-** in the form of Demand Draft in favour of Heavy Engineering Corporation Ltd., payable at Ranchi.

a) Tenders not accompanied with Tender Fee shall be liable for rejection.

Exemption of Tender Fee shall be applicable on submission of valid SSI/NSIC/MSME certificate and as per prevailing govt guidelines. SSI/NSIC/MSME Certificate to be uploaded in Techno Commercial Part 1.

The tender fee and EMD exemption is applicable to MSMEs subject to conditions given below:

i. MSMEs participating in the tender must submit valid & authorised copy of certificate of registration with any one of the above agencies. In case of bidders submitting DIC registration certificate shall attach original notarised copy of the DIC certificate. The MSME's Bidder to note and ensure that nature of services and goods/items manufactured mentioned in MSME's certificate matches with the nature of the services and goods /items to be supplied as per Tender.
ii. Traders / resellers / distributors / authorized agents will not be considered for availing benefits under Public Procurement policy 2012 for MSMEs as per MSME guidelines issued by MoMSME.
iii. The registration certificate issued from any one of the above agencies must be valid as on

Bid closing date of the tender. Bidder shall ensure validity of registration certificate in case bid closing date is extended.

iv. The MSMEs who have applied for registration or renewal of registration with any of the above agencies / bodies, but have not obtained the valid certificate as on close date of the tender, are not eligible for exemption / preference.

v. Where any aggregator has been appointed by the Ministry of MSME, themselves quote on behalf of some MSE units, such offers will be considered as offer from MSE units and all such facilities would be extended to these aggregators also.

7.0 Examination of Terms & Conditions- Technical Evaluation

Any bidder seeking benefit/preference under MSME / Make in India or any other policy/scheme of the Government of India, which is currently in force MUST at the time of bidding itself enclose all relevant documents / certificates etc. for claiming such benefits. The bidder must also clearly highlight the provisions of the policy and the kind of benefit being sought by it for which it meets the conditions for claiming such benefits. It may be noted that no other benefit / preference / concessions which is beyond the scope of the policy or the bidder's entitlement under the policy shall be given / considered by us. If the bidder fails to claim such benefit and/or fail to submit necessary documents/certificates in support of its claim at the time of bidding itself, its claim shall not be entertained at a later stage in the bidding process and no opportunity shall be provided to it to submit any document / certificate.

7.1 Evaluation and comparison of bids

The bids shall be evaluated on the basis of final landed cost which shall be arrived as under and as per format given in BOQ of e-Tender:

For Goods manufactured within India

i)	The price of the goods quoted Ex-works
ii)	GST which will be payable on the goods if the contract is awarded.
iii)	The charges for inland transportation, insurance and other local services required for delivering the goods at the desired destination as specified in the BOQ.
iv)	The installation, commissioning and training charges including any incidental services, if any as given in Scope of Works of NIT
v)	Deviation to NIT payment terms.

The comparison between the offers shall be made on FOR destination on Landed cost basis.

Price preference to Local suppliers as per Make in India procurement policy of Govt. of India and Department for Promotion of Industry and Internal Trade (DPIIT) order No. P-45021/2/2017-PP (BE-II) dated 04th June, 2020

A. Eligibility of 'Class-I local supplier', 'Class-II local suppler' and 'Non-local supplier'

i. Only Class-I local suppliers are eligible to participate in tender if there is sufficient local capacity and local competition irrespective of the purchase value. L1 bidder amongst Class-I local suppliers shall be awarded contract subject meeting other requirements as per tender.

ii. In procurement of all goods or services not covered above, with the estimated value of purchases less than Rs. 200 Crore, only 'Class-I local supplier' and 'Class-II local supplier', shall be eligible to bid.

B. Estimated value of procurement of tendered goods is below Rs. 200 Crore and it is not a Global Tender:

i. **Tendered goods are not divisible in nature, the following procedure shall be followed to evaluate L1 and award of contract:**

a. Among all qualified bids, the lowest bid will be termed as L1. If L1 is from a Class-I local supplier, the contract will be awarded to L1.

b. If L1 is not from a Class-I local supplier, the lowest bidder among the Class-I local suppliers, will be invited to match the L1 price subject to local supplier's quoted price falling within the margin of purchase preference, and the contract shall be awarded to such local supplier subject to matching the L1 price.

c. In case such lowest eligible Class-I local supplier fails to match the L1 price, the Class-I local supplier with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the Class-I local suppliers within the margin of purchase preference matches the L1 price, then the contract may be awarded to the L1 bidder.

For more clarity in this regard, following table is furnished:

Quantity of Tendered goods	Price quoted by Local suppliers	Finalization of tender
Cannot be Split	L1 is Class-I local supplier	Full Order on Class-I Local supplier
Cannot be Split	Not L1 but Class-I local supplier within L1+20%	Full Order on Class-I Local supplier subject to matching L1 price

Definitions of terms applicable to this clause

'Local content ' means the amount of value added in India which shall be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.

'Class-I Local supplier' means a supplier or service provider whose goods or services offered for procurement, has local content equal to or more than 50% .

‘Class-II local supplier’ means a supplier or service provider, whose goods or services offered for procurement, has local content equal to or more than 20% but less than 50%.

‘Non-Local supplier’ means a supplier or service provider, whose goods or services offered for procurement, has local content less than or equal to 20%.

'L1' means the lowest tender or lowest bid or the lowest quotation received in this tender, bidding process or other procurement solicitation as adjudged in the evaluation process as per the tender or other procurement solicitation .

'Margin of purchase preference' means the maximum extent to which the price quoted by a Class-I local supplier may be above the L1 for the purpose of purchase preference.

C. Verification of local content

i. The ‘Class-I local supplier’/ ‘Class-II local supplier’ at the time of tender, bidding or solicitation shall be required to provide self certification that the item offered meets the minimum local content and shall give details of the location(s) at which the local value addition is made. (Annexure-6)

ii. In cases of procurement for a value in excess of 10 crores, the local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local

content.

iii. False declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Finance Rules along with such other actions as may be permissible under law.

iv. A supplier who has been debarred by any procuring entity for violation of the order of the Department for Promotion of Industry and Internal Trade (DPIIT) order No. P-45021/2/2017- PP (BE-II) dated 04th June, 2020 shall not be eligible for preference under the said order for procurement by any other procuring entity for the duration of the debarment. The debarment for such other procuring entities shall take effect prospectively from the date on which it comes to the notice of other procurement entities, in the manner prescribed in the order of the Department for Promotion of Industry and Internal Trade (DPIIT) order No. P- 45021/2/2017-PP (BE-II) dated 04th June, 2020.

D. "Class-II local supplier" will NOT get purchase preference in any procurement.

8.0 PERIOD OF VALIDITY OF TENDER

Unless otherwise specified, the Tenderer shall keep his tender valid initially for a period of 120 days from the due date of opening of the tender.

9.0 LANGUAGE

The Tender shall be submitted in English language.

10.0 NO CLAIM OR COMPENSATION FOR SUBMISSION OF TENDER

The Tenderer whose Tender is not accepted shall not be entitled to claim any costs, charges, expenses of and incidental to or incurred by him through or in connection with his submission of Tenders, even though HEC Ltd may decide to withdraw the Invitation of Tender.

11.0 INCOME TAX / SALES TAX CLEARANCE CERTIFICATE / PAN

The Tenderer shall furnish the Income Tax Clearance Certificate, Sales Tax Clearance Certificate and copy of PAN with the tender duly countersigned by the respective officer under the seal of the office. Failure to produce the requisite certificate with tender, their quotation is liable to be rejected.

12.0 CONFIDENTIALITY

Tenderer shall note that all data/drawings/specifications enclosed with Tender document is confidential. Tenderer shall keep all data/drawings in strict confidence and shall not copy or pass on any of the Tender papers etc. to any third party. Tenderer shall return the Tender documents alongwith the Tender.

13.0 NOTICES ON BEHALF OF HEC LTD

Notice and Certificate on behalf of HEC LTD in connection with the Purchase Order may be given by duly authorised officers of HEC LTD. Any modification which may become necessary in the interim period will be intimated to you as soon as possible.

14.0 INTEGRITY PACT

Bidders are required to upload duly filled and signed Integrity Pact (on a non judicial stamp paper of value Rs. 100) as per enclosed Format (ANNEXURE-5) in part –I i.e Techno-commercial bid of the offer and hard copy to be submitted to the office of Purchase /Project Division /HEC Ltd by the time of bid opening. **Without submission of Integrity pact the bid shall not be considered for further evaluation.**

For Monitoring of Inegrity Pact , the details of IEM(Independent External Monitor) is as below:

A.Sri Devi Prasad De
32, Sanchar Vihar,C58/4
Sector 62, Noida -201309 (U.P)
Mo. No. 9868215434, 9013134348
Email: deepeede@gmail.com

B. Sri Hem Kumar Pandey
A-802,Gulistan Residency
Pocket-1B, Sector -13
Dwarika, New Delhi-110078
Mo No. 9810132693

15.0 PURCHASER's RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Purchaser's action.

16.0 Tenderer to note that procurement shall be done on PACKAGE BASIS i.e L-1 firm will be decided based on combined lowest landed value for all tendered items by adding individual quoted values for all respective items and purchase order will be awarded to overall L-1 firm on **Package basis .**In case there is deviation against NIT Payment term, loading as mentioned at note of clause 6.0 of commercial term will be applicable to arrive at L-1 firm.

17.0 PRE QUALIFING CRITERIA

I. Bidder having experience of manufacturing of similar plants (Mobile/semi-mobile Crushing Plant) of atleast 1000 tph and having satisfactory performance of minimum 2 years operation (Submit/upload P.O. copy & Performance certificate issued by customer/client). Bidder shall also submit the following documents :-
   a. Complete address of the agency issuing the certificates
   b. E-mail address, telephone no & complete postal address with PIN code of the issuing agency to be mentioned along with photocopies of submitted documents.

III. If bidder has submitted experience towards Overseas jobs, then the same should be vetted/endorsed by the relevant* embassy/high commission concerned, towards authencity of document in English or translate in English language. * (Relevant embassy/high commission means the embassy/high commission in India of the country where the bidder has executed the said work or country of origin of the bidder OR the Indian embassy in the country where bidder has executed the work or country of origin of the bidder)

18.0 Bidder shall submit the list of recommended spares for 5 years O & M along with price for Semi Mobile Crushing Plant & Secondary Sizer in Techno-commercial bid (Part-I). However, this price will be optional price and the same will not be considered during Price evaluation to arrive at L-1 bidder.

19.0 Bidder shall also submit the AMC charges for 5 years Maintenance for Semi Mobile Crushing Plant & Secondary Sizer in Techno-commercial bid (Part-I). However, this price will be optional price and the same will not be considered during Price evaluation to arrive at L-1 bidder.

20.0 General conditions of the contract :

Unless otherwise specified in the Terms & Conditions above, this order shall be

governed by General conditions of contract of purchase of HEC Ltd, which is available in the web site of HEC.(www.hecltd.com):

Note:-

1. **As per the govt. Guidelines it is to be specified clearly in your offer whether your firm is registered with SSI/NSIC/MSME and also confirm whether the firm is owned by SC/ST WOMEN Entrepreneurs or not.**
2. **Pl. provide UAM no to avail Facilities of MSME.**
3. **Please get registered your firm with HEC Ltd.**

Annexure – 1

PART – I

(To be filled by the bidder and to be uploaded alongwith techno-commercial bid)

Quotation No……..

Sl No.	Requisite		Remark
1	Submission of the offer with signed and stamped copy of annexure-A,B & C of commercial Terms & conditions and Annexure-2 of **Technical specification.**	Upload the relevant documents	
2	All NIT Items must be quoted otherwise offer shall not be considered as procurement is on **Package Basis.**	YES/NO	
3	Class of the bidder (Class-I / Class-II/ Non-Local supplier) must be specified in line with procurement policy of Govt. of India and Department for Promotion of Industry and Internal Trade (DPIIT) order No. P-45021/2/2017-PP (BE-II) dated 04th June, 2020	Class-I / Class-II/ Non-Local supplier	
4	Declaration of local content as per annexure -6 (Mandatorily to be enclosed)	Enclosed/ Not Enclosed.	
5	Whether SSI/NSIC/MSME	Yes / No (In case yes, then upload certificate)	
6	Whether SSI/NSIC/MSME owned by SC/ST/WOMEN Entrepreneurs		
7	Tender fee (Rs 3000/-) / EMD(Rs. 21,35,000/-)	Yes / No (In case yes, then upload scan copy of DD/BG/Online receipt)	
8	F.O.R. BLOCK B CHP, NCL Site (As per clause 1 of Terms & condition)	Yes / No	
9	Payment Term (As per clause 6 of Terms & condition)	Yes / No (In case your answer is No, then please mention your term)	
10	Delivery Term (As per clause 5 of Terms & condition)	Yes / No (In case your answer is No, then please mention your term)	
11	Validity (one hundred and twenty (120) days from the due date of opening of the tender.)	Yes / No	
12	L.D. Clause (As per clause 9 of Terms & conditions)	Yes / No	
13	Guarantee Clause (As per clause 7 of Terms & conditions)	Yes / No	
14	Performance Bank Guarantee (As per clause 8 of Terms & conditions)	Yes / No	
15	Security Deposit (As per clause 8 of Terms & conditions)	Yes / No	
16	GST	Yes / No, Applicable GST (%)…….	
17	Inspection (As per clause 4 of Terms & conditions)	Yes / No	
18	Integrity Pact as per Annexure-5 (**Without submission of Integrity Pact the bid shall not be considered for further evaluation)**	Yes / No	
19	Whether Terms & Condition/Note etc. mentioned in the tender enquiry is acceptable to the tenderer	Yes / No	
20	GCC of HEC to be Accepted	Yes / No	

(Signature of Tenderer with seal)

Annexure - 2
PART-II (Price Bid)

1. The tenderer shall upload the digitally signed Schedule of price bid in the form of BOQ.xls
2. Bidders may please note, the schedule of quantities is attached in the portal. The same (BOQ) shall be downloaded and to be filled in the editable (un protected) cells only and they should necessarily submit their financial bids in the format provided after entering the financial quotes, name of the bidder etc.
3. Bidders to note that the price as per the offer is strictly to be mentioned under Part-II of Price bid and not to be disclosed in any manner under techno-commercial bid Part-I ,In case price of the bidder is disclosed under techno-commercial bid Part-I , the offer of the firm will be summarily rejected.
4. If any item of BOQ is not quoted then offer of the firm **shall not be considered** as procurement is on **PACKAGE BASIS.**

Annexure 3
Instructions for Online Bid Submission

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at: https://eprocure.gov.in/eprocure/app.

REGISTRATION

(i) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: ***https://etenders.gov.in/eprocure/app***) by clicking on the link "Online bidder Enrollment" on the CPP Portal which is free of charge.

(ii) In case of any clarification please contact M/s NIC, before the schedule time of the submission of bid. Contact Person:- **Shri Kushal Kumar: 09852923855/ 7903884318**

(iii) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

(iv) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.

(v) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra etc.), with their profile.

(vi) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to
ensure that they do not lend their DSC's to others which may lead to misuse.

(vii) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS

i) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.

ii) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

iii) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

i) Bidder should take into account any corrigendum published on the tender document before submitting their bids.

ii) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

iii) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.

iv) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Space” or ‘’Other Important Documents’’ area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

Note: My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in My Documents space, this does not automatically ensure these Documents being part of Technical Bid.

SUBMISSION OF BIDS

i) Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

ii) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

iii) Bidder has to select the payment option as “offline” to pay the tender fee / EMD as applicable and enter details of the instrument.

iv) Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by as specified in the tender documents. The details of the DD / any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.

v) Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other

cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.

vi) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

vii) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.

viii) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

ix) Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

x) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

ASSISTANCE TO BIDDERS

Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 **CPP Portal** Helpdesk.

Note: For any query related to registration and processing on the Portal please visit FAQ available at https://etenders.gov.in/eprocure/app?page=FAQFrontEnd&service=page

You may call the Helpdesk. The 24 x 7 Help Desk Numbers are
0120-4200462, 0120-4001002, 0120-4001005, 0120-6277787
E-Mail: support-eproc@nic.in

Or

You may call to our service provider, :06512400562,06512401266
E-Mail: **: projectpurchase@hecltd.com**

Annexure 4

BANK GUARANTEE PROFORMA FOR

EARNEST MONEY DEPOSIT

(TO BE STAMPED IN ACCORDANCE WITH STAMP ACT)

(TO BE ISSUED BY ANY NATIONALISED/SCHEDULED BANK AUTHORISED BY RBI TO ISSUE A BANK GUARANTEE)

To:
Heavy Engineering Corporation Limited
Ranchi-834004

WHEREAS _____*[name and address of Tenderer]* (hereinafter called "the Tenderer")
shall be submitting its Tender dated _____*[date of the Tender]* for the work. *[name of the work]* (hereinafter called "the Tender").

KNOW ALL MEN by these present that we,_____*[name of the bank]* of *[name of the country]*_____having our registered office at *[address of the bank]* (hereinafter called "the bank"), are bound unto the Heavy Engineering Corporation Limited, P.O. Dhurwa, Dist. Ranchi (Jharkhand) (hereinafter called "the Purchaser") for the sum of *[amount of the Guarantee in words and figures]* for which payment well and truly to be made to the said Purchaser the Bank binds itself, his successors and assigns by these presents.
SEALED with the Common Seal of the said bank this _____day of_____200_.
THE CONDITION of this obligation are :

1. If the Tenderer withdraws its Tender during the period of Tender Validity specified by the Purchaser on the Tender form ; or

2. If the Tenderer withdraws having been notified of the acceptance of its Tender by the
   Purchaser during the period of Tender Validity :

   (a) Fails or refuses to execute the Contract Agreement when required ; or

   (b) Fails or refuses to furnish the Security-cum-Performance Guarantee Security (if any) in accordance with the Tender conditions.

We,_____*[name of the bank]* undertake to pay to the Employer up to the above amount
upon receipt of its first written demand, without the Employer having to substantiate its demand, provided that in its demand the Employer will note that the amount claimed by it is due to it owing the occurrence of 1 or both of the 2 (a) or (b) specifying the occurred condition or conditions.
This guarantee will remain in full force up to and including the date
and any demand in respect thereof should reach the Bank not later than the date of expiry of this guarantee.

For and on behalf of the Bank.

Signature
Name
Designation
Common Seal of Bank

Annexure-5

INTEGRITY PACT

Between

Heavy Engineering Corporation Ltd.(HEC) hereinafter referred to as "The Principal",
and

…….hereinafter referred to as "The Bidder/ Contractor"

Preamble

The Principal intends to award, under laid down organizational procedures, contract/s for ……The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness / transparency in its relations with its Bidder(s) and/ or Contractor(s).
In order to achieve these goals, the Principal will appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 – Commitments of the Principal

1. The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles :-
   a. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
   b. The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
   c. The Principal will exclude from the process all known prejudiced persons.
2. If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2 – Commitments of the Bidder(s) / contractor (s)

1. The Bidders(s) / Contractor (s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
   a. The bidder(s) / Contractor(s) will not, directly or through any other person or firm, offer promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
   b. The Bidder(s)/ Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-

submission of bids or any other actions to restrict competitiveness or to introduce cartelisation in the bidding process.

c. The Bidder(s) / Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s)/Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d. The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/ representatives in India, if any. Similarly the Bidder(s) /Contractors(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" (enclosed) shall be disclosed by the Bidder(s) / Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/ representative have to be in Indian Rupees only. Copy of "Guidelines on Indian Agents of Foreign Suppliers" attached.

e. The Bidder(s) / Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

2 The Bidder(s) / Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 – Disqualification from tender process and exclusion from future contracts

If the Bidder(s) / Contractor(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s) / Contractors) from the tender process or take actions like Banning of business dealings etc.

Section 4 – **Compensation for Damages**

(1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit / Bid Security.

(2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank guarantee.

Section 5 – Previous transgression

(1) The Bidder declares that no previous transgressions occurred in the last 3 years with any other Company in any country conforming to the anti corruption approach or with any other Public Sector enterprise in India that could justify his exclusion from the tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken against the bidder.

Section 6 - Equal treatment of all Bidders / Contractors / Subcontractors

(1) The Bidder(s)/ Contractor(s) undertake (s) to demand from all subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.

(2) The Principal will enter into agreements with identical conditions as this one with all Bidders, Contractors and Subcontractors.

(3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7 – Criminal charges against violation by the Bidder(s) / Contractor(s) / Subcontractor(s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

Section 8 – Independent External Monitor / Monitors

(1) The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

(2) The monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, HEC.

(3) The Bidder(s) / Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s) / Contractor(s)/ Subcontractor(s) with confidentiality.

(4) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

(5) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerated action.

(6) The Monitor will submit a written report to the CMD, HEC within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.

(7) Monitor shall be entitled to compensation on the same terms as being extended to / provided to Independent Directors on the HEC Board.

(8) If the Monitor has reported to the CMD HEC, a substantiated suspicion of an offence under relevant IPC / PC Act, and the CMD HEC has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

(9) The word ‘Monitor’ would include both singular and plural.

Section 9 – Pact Duration

This Pact begins when both parties have legally signed it, it expires for the Contractor 12 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded.

If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged / determined by CMD HEC.

Section 10 – Other provisions

(1) This agreement is subject to Indian Law , Place of performance and jurisdiction is the Registered Office of the Principal, i.e. Ranchi.

(2) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

(3) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

(4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

_____ _____

(For & On behalf of the Principal) (For & On behalf of Bidder / Contractor)

(Office Seal) (Office Seal)

Place……..

Date……

Witness 1 :
(Name & Address) _____

Witness 2 :
(Name & Address) _____

Annexure – 6

Local Content Declaration

Date:

To,

M/s HEC Ltd ,
Plant Plaza Road
Ranchi-834004

Sub: Certificate as per clause 9 (a) of Revised Public Procurement (Preference to Make in India Order, 2017 of DPIIT dated 04/06/2020 and 16/09/2020.

Ref: HEC Tender / RFQ / NIT Number :HEC/PROJ/PUR/BLOCK B/01 dated …….

I (authorized signatory for M/s ……..)
declare the local content for the items of the tender with their location details in the below mentioned table :

Sl. No.	Description	Local Content (in %)	Location details at which local value addition is made (Factory address)
1	**Semi Mobile Crushing Plant (Skid Mounted)**		
2	**Secondary Sizer**		

We also certify that the above details are true & correct and if found to be false then it shall be a breach of the Code of Integrity and our bid will be liable to be rejected and we will have no objection against rejection of bid.

For M/s …….

Authorized Signatory
(with company seal & Name)

Note :

1. **In case the value of offer (Excluding Taxes) is more than 10 Crores INR , the above declaration will be required to be certified by Practicing CA with MRN & FRN of CA.**
2. **The Local Content Declaration must be submitted by the bidder during submission of offer along with Techno-commercial Bid. No change in Local Content of declaration will be allowed once the bid is submitted.**

ENCLOSURE - I

COMMERCIAL TERMS AND CONDITIONS

DEFINITIONS :

EMPLOYER	BLOCK B OCP/ NCL, Singrauli (MP)
CONSULTANT	CMPDIL, Ranchi
PURCHASER	Heavy Engineering Corporation Limited
SUPPLIER	Successful Bidder
ITT	Instructions to Tenderer
Start-up	Refer Technical Specification (Enclosure- II)
Trial Operation	Refer Technical Specification (Enclosure- II)
Performance & Guarantee Test	Refer Technical Specification (Enclosure- II)
Site Engineer	Engineer In charge of Employer
Store/Site	Store/Site shall be the Store/Site of the Employer at BLOCK B OCP located in BLOCK B, P.O.-Gorbi, Distt- Singrauli (MP), Pin- 486892

1.0 SCOPE OF SUPPLY / WORK & SERVICES :

1.1 The scope of supply is to manufacture and deliver the total equipment / items in full and good condition as given in technical specification (enclosed at "Enclosure-II") FOR Site basis within BLOCK B OCP located in BLOCK B, P.O.-Gorbi, Distt- Singrauli (MP). The scope includes, inter alia, all auxiliary and ancillary related activities such as procurement of all inputs, raw materials, bought-out components and consumables including testing and inspection, painting, safe & secure packing, handling and transportation of finished equipment duly inspected and accepted by PURCHASER/representative of Employer/Consultant till safe delivery in Purchaser's Store at Project Site.

Any scope of supplies which is not specifically mentioned in this order but materially required for the completion of the supplies and/or for safe, trouble free normal operation shall be supplied free of cost to the Purchaser/Employer unless, expressly excluded in this order.

1.2 Total Time period for completion of Supervision of Erection, Testing, Commissioning & Performance Guarantee Test (P.G. Test) is **30 man days**.

1.3 The approval by the Purchaser at any stage for any supplies by the supplier/supplier's sub-suppliers shall not relieve the supplier of his obligations under this order.

2.0 *PRICE BASIS*

2.1 FOR SUPPLIES :

2.1.1 Prices shall be firm and fixed till execution of order in full. No escalation will be admissible and granted on any account under any circumstances. Price schedule is to followed as per BOQ

2.1.2 The Prices are for the entire Scope of the Facilities including Commissioning spares, oils, grease, lubricants, flushing liquor, chemicals for pickling & Special Tools & Tackles if any etc., required till commissioning of the facilities.

2.1.3 The Prices are inclusive of all Taxes, Duties and freight upto site store. Price shall comprise of Basic Price, GST, freight, as may be applicable and prevailing on Base Date of the Purchase order.

2.1.4 The payment of duties, taxes, levies, etc., will be reimbursed (on actual) against documentary evidence to be produced by the Supplier, subject to a ceiling indicated in Price Schedule of the P.O. In no case the reimbursement towards duties and taxes, etc., shall exceed the amount indicated in price schedule of the P.O. towards duties, taxes, levies, etc. except on account of variation in Taxes & Duties.

2.1.5 If the commissioning spares mentioned in the offer are found inadequate, the Supplier shall supply additional required Commissioning Spares, without any extra cost to the Purchaser. However, unused Commissioning Spares shall be the property of the Employer.

2.1.6 If the Oil, Grease & Lubricants found to be inadequate, the Supplier shall supply additional required Oil, Grease & Lubricants, without any extra cost to the Purchaser. However, unused Oil, Grease & Lubricants shall be the property of the Employer.

2.2 PRICE BASIS FOR SUPERVISION OF ERECTION, TESTING, COMMISSIONING & PG TEST

i) Prices should be quoted on the per man day basis and all applicable GST

ii) GST for supervision of erection and commissioning if applicable shall be re-imbursed against documentary evidence by PURCHASER. The price also includes all charges towards to and fro travel, boarding, local transportation, medical etc.

iii) Price shall remain firm and binding and shall not be subject to any variation whatsoever on any account except for statutory variation on GST.

iv) Purchaser will not entertain any additional visit charges under following circumstances :

a) In case of delay in erection/commissioning due to delay by supplier's engineer.

b) Due to lack of proper documents / knowledge to be possessed by supplier's engineer.

c) In case of additional visit necessitated due to fault / repair in the supplier's supplied equipment, because of design / manufacturing / workmanship fault.

d) In case of delays / loss of time beyond purchaser's control.

e) In case of short supplies by the supplier.

3.0 TAXES & DUTIES

3.1 FOR SUPPLY

a) GST on finished items are included in the purchase order price. GST on finished items shall be paid at the rates prevailing at the time of delivery period or purchase order delivery period, whichever is earlier and will be limited to taxes and duties actually paid by the Supplier subject to a maximum value declared in their Bid. GST shall not be paid on the intermediate products, components, assemblies, raw materials etc. purchased by the Supplier.

b) Any revised imposition of taxes/duties on the finished items within the purchase order delivery period will be reimbursed by PURCHASER against documentary evidence. Similarly, if any of existing taxes, duties, are reduced or abolished, PURCHASER shall be entitled to get the resultant benefit in full.

c) Original copy of the GST Invoice as duty paying document (i.e., Buyer's Copy of GST Invoice) shall be furnished by Supplier for claiming GST on the finished items. In addition to the above, the Supplier shall furnish a certificate to the effect that no refund of GST has been obtained or claimed except credit under GST Rule. In case any refund is obtained in future by the Supplier, the same shall be immediately passed on to PURCHASER in full.

d) Duplicate copy of the GST Invoice (i.e., Transporter's Copy) shall be sent along with Transporter and it should be ensured that the transporter's copy of GST invoice is handed over to Site/Stores of EMPLOYER/PURCHASER, along with the consignment. Documentary evidence shall be furnished by the Supplier regarding receipt of Transporter Copy of invoice at site stores of EMPLOYER/PURCHASER.

e) GST Invoice should be Drawn in favour of EMPLOYER as per the details indicated in the despatch instructions. PURCHASER shall not reimburse GST in case GSTInvoice is not drawn as stated in the despatch instruction. GSTInvoice should contain all the particulars as per Latest Notification issued by Central Board of Excise and Customs / other concerned authorities.

f) GST No. of HEC: will be intimated before Issue of purchase order

3.2 E-Way Bills(If Required)

The e-way bill required in connection with supply of goods or services, if any, shall be arranged by the contractor/supplier. However, the e-way bill will be arranged by NCL if provisions of the relevant Act and the rules made there under specifically states that the e-way bill is required to be issued by recipient of goods.

4.0 INSPECTION : As per instruction in Technical Specification (Enclosure-II)

5.0 *DELIVERY*

Drawings and QAP will be submitted for approval within **15 days** from the date of issuance of P.O & commented drawing will be re-submitted within **7 days** from the date of receipt of commented drawing . Inspection call with all relevant documents as per approved QAP shall be submitted within **8 months** from the date of approved drawing and QAP whichever is later and all data from our side. Delivery at site shall be completed within **15 days** from the date of issue of despatch clearance/inspection certificate/way bill whichever is applicable.

6.0 *TERMS OF PAYMENT*

6.1 No advance payment will be made to the supplier and the payments will be linked with the progress.

6.2 **Ninety (90%**) of the basic price including P&F charges alongwith full GST and freight within 60 (sixty) days from date of receipt of materials at site and submission of documents and submission of following complete and correct documents in five (1 original + 4 copies) Sets at HEC, Ranchi after receipt of items at Site Stores of EMPLOYER/PURCHASER. Supplier ensure that despatches are made and Invoices are raised strictly as per the purchase order.

i) Five (5) copies (1 original + 4 copies)of invoice duly signed by the Supplier.

ii) Challan/Lorry Receipt receipted by Employer's Material Receiving Department/ Stores/ Site.

iii) Packing list duly signed by the Supplier.

iv) Original Copy of E-way bill .

v) Intimation for insurance before dispatch of material .

vi) Original of the transporter's freight payment certificate.

vii) Test certificates for bought-out items

viii) Inspection certificates/Dispatch Clearance, issued by the Engineer of HEC/ Consultant for manufactured items.

ix) Certificate from the Supplier to the effect that contents in each case are neither more nor less than those entered in the invoice and packing list and quality of the goods is guaranteed and as per the relevant specification.

x) Guarantee Certificate as per clause no 7.

xi) Original PBG for amount equivalent to 10% of total basic price of supply Part of PO which should valid till guarantee period

xii) GST-R1 (GST Return Copy)

6.3. **Five (5%)** of the Basic Price excluding GST shall be released upon issue of the Preliminary Acceptance Certificate by Employer.

6.4 **Five (5%)** of the Basic Price excluding GST shall be released upon issue of the Final Acceptance Certificate by Employer.

Note:

1. **In case there is deviation in payment terms against NIT Payment terms , credit for no. of days will be taken into consideration, while arriving at Landed cost of material to decide L-1 firm. Interest @ 12.05% per annum will be loaded while calculating the Landed cost.**
2. **For payment all the processing charges by the bank shall be on account of the firm.**
3. **Payment as mentioned above will be made after receipt of material , by I/c(Fin), Project division, HEC Ltd., Ranchi – 834004 through RTGS on submission of Mandate Form duly signed by Bank.**
4. The supplier within five (5) days of the Date of the approval of drawing shall submit detailed Billing Schedules for the purpose of progressive payment which will be scrutinized and approved by the purchaser based on approved billing schedule order.

Number & distribution of above noted dispatch documents including original LR are indicated in our Dispatch Instructions.

C) <u>FOR SUPERVISION OF ERECTION , INSTALLATION AND COMMISSIONING</u>

Total payment worked out for the actual deployment of Engineer/Expert on the basis of man day rate shall be made within 30 days upon receipt of the following documents:-

a) GST Invoice in triplicate

b) Actual period of deployment of Engineer/Expert duly signed by SUPPLIER and certified by PURCHASER's/ EMPLOYER's site engineer.

c) Supervision (Part/ Full) completion certificate duly signed by PURCHASER/ EMPLOYER.

d) GST-R1 Copy

7.0 GUARANTEE :

7.1. For Semi Mobile Crushing Plant & Secondary Sizer :

The supplier shall must carry a guarantee of equipment/materials against faulty materials, faulty design, defective and bad workmanship for a period of 12 months from the date of FAC or 36 months from the date of receipt of last consignment whichever is earlier.

7.2. For Auxiliary Items :

The supplier shall must carry a guarantee of equipment/materials against faulty materials, faulty design, defective and bad workmanship for a period of 12 months from the date of FAC or 24 months from the date of receipt of last consignment whichever is earlier.

8.0 BANK GUARANTEES

8.1 Security Bank Guarantee & Performance Bank Guarantee (as per Annexure – E)

The Supplier shall, within 15 (fifteen) days after the date of Purchase Order as specified, provide a Security Bank Guarantee (as per Annexure-E hereof) for the due performance of the contract an amount equivalent to 10% of the Total basic Price as indicated in the Price Schedule, the same shall be from any of the Nationalised Banks or Scheduled Banks in Ranchi and enforceable at Ranchi Jharkhand only.

The Public Sector Enterprises or State/Central Govt. Undertakings will not be required to submit Security Deposit, but however they shall submit “Performance Guarantee Bond” in lieu of Security Deposit

The Bank Guarantee for Security Deposit shall be valid till completion of supply which will be converted into performance Bank Guarantee valid till guarantee period as per clause 7.

8.2 Claims under Security (Bank Guarantee)

If the Purchaser considers itself entitled to any claim under any Bank Guarantee, it shall so notify the Supplier by registered/speed post, specifying the default of the Supplier upon which claim is based and it shall require the Supplier to remedy the same. If the Supplier fails to remedy or to take steps to remedy the same within fourteen days of receipt of such notice, then the Purchaser shall be entitled to invoke Security BG/PBG.

9.0 LIQUIDATED DAMAGES FOR DELAY IN COMPLETION

If the Supplier fails to attain “Delivery Period” as defined in Clause 5.0 above or any extension thereof due to reasons not attributable to the Purchaser, the Purchaser shall recover the amount of Liquidated Damages, but not by way of penalty, by making deductions from the Supplier’s account or as a last resort by encashment of Supplier’s Bank Guarantees, at the rate of 0.5% of the Final Purchase Order basic Price, if any, paid or payable to the Supplier per complete week of delay up to a maximum of 10% of the Final Purchase Order basic Price, paid or payable to the Supplier.

10.0 TRANSIT INSURANCE

Shall be covered under Marine-cum-Erection & Commissioning(MCE) policy taken by us. The policy No. and detail address of the Insurance Company will be intimated to the supplier before despatch. Supplier shall have to furnish full despatch details to the Insurance Company with the copy to this office immediately after despatching the materials.

11.0 MODE OF DESPATCH

For the consignments to be despatched by Road, the supplier shall ensure that the following are observed by them :

i) All despatches must be effected only on receipt of written despatch clearance from PURCHASER.

v) Supplier shall despatch all the materials consigned to, GM, Block B, NCL P.O- Gorbi, Distt- Singrauli (MP), Pin-486892

ii) Identify and obtain the correct type of trucks/trailers, keeping in view the nature of consignments to be despatched.

iii) Care shall be taken to avoid damages during transit to ensure that all packages are firmly secured.

vi) All consignments despatched by truck/trailor shall be consigned on door delivery basis (Full or part lorry load). No. transshipment is allowed.

vii) The transporter must be approved by Bank Association.

viii) In case any other mode of transport has to be restored other than that mentioned in the Purchase Order, the same should be done only after obtaining prior approval in writing from the Purchaser. By allowing such transportation no increase in freight charges shall be allowed and in case there is decrease, the actual shall be payable to the supplier

12.0 PACKING, FORWARDING AND SHIPMENT

a) The Supplier, wherever applicable, shall after proper painting, pack and crate all equipment in such a manner as to protect them from deterioration and damage during rail and road transportation to the site and storage at the site till the time of erection. The Supplier shall be held responsible for all damages due to improper packing. The supplier shall be liable to deliver the material at the destination as per specification. Any damage during transit shall be sole responsibility of the supplier. In case of damage, the material shall be liable to be rejected and supplier shall replace the same and lift the rejected material within time at their risk and cost.

b) The Supplier shall notify the Purchaser of the date of each shipment from his works, and the expected date of arrival at the site for the information.

c) The Supplier shall also give all shipping information concerning the weight, size and content of each packing including any other information the Purchaser may require.

d) The Supplier shall prepare detailed packing list of all packages and containers, bundles and loose material forming each and every consignment despatched to site. The Supplier shall further be responsible for making all necessary arrangements for loading, unloading and other handling right from his works upto the safe delivery at site store.

e) The Spplier shall paste the Packing List on the container/boxes as well as inside the container/boxes.

f) The Supplier shall ensure that after receipt of materials at site, his representative will be available at site for verification of materials as and when required by site I/c, HEC Ltd.

13.0 DEMURRAGE, WHARF-AGE, ETC.

All demurrage, wharf-age and other expenses incurred due to delayed clearance of the material or any other reason shall be to the account of the Supplier.

14.0 FORCE MAJEURE

A) Force majeure is herein defined as any cause which is beyond the control of the Supplier or Purchaser as the case may be which they could not foresee or with a

reasonable amount of diligence could not have foreseen and which substantially affect the performance of the purchase order, such as:

(a) natural phenomena, including but not limited to floods, draughts earthquakes and epidemics:

(b) acts of any government, including but not limited to war, declared or undeclared, priorities, quarantines, embargoes, Provided either party shall within Twenty one (21) days from the date of occurrence of such a cause notify the other in writing of such causes.

B) The bidding document will clearly state that

(a) The Supplier will advise, in the event of his having resort to this clause by a registered letter duly certified by the local chamber of commerce or statutory authorities, the beginning and end of the cause of delay, within fifteen days of the occurrence and cessation of such force majeure condition. In the event of delay lasting over two months, arising out of force majeure, the purchase order may be terminated at the discretion of the purchaser.

(b) For delays arising out of Force Majeure, the Supplier will not claim extension in completion date for a period exceeding the period of delay attributed to causes of Force Majeure and neither EMPLOYER nor PURCHASER shall be liable to pay extra costs (like increase in rates, remobilization advance, idle charges for labour, machinery etc.).

(c) If any of the Force Majeure conditions exists in the place of operation of the Supplier even at the time of submission of the bid he will categorically specify them in the bid and state whether they have been taken into consideration in their quotations.

C) The Supplier or the Purchaser shall not be liable for delays in performing his obligations resulting from any force majeure cause as referred to and/or defined above. The date of completion will, subject to hereinafter provided, be extended by a reasonable time even though such cause may occur after Supplier's performance of his obligations has been delayed for other causes.

15.0 LONG TERM AVAILABILITY OF SPARES

15.1 The Supplier shall guarantee the long term availability of spares to the Employer for the full life of the equipments covered under the purchase order. The Supplier shall guarantee that before going out of production of spare parts of the equipment covered under the purchase order, he shall give the Employer at least twelve (12) months advance notice so that the later may order his bulk requirement of spares, if he so desires. The same provision will also be applicable to sub-Supplier. Further, in case of discontinuance of manufacture of any spares by the Supplier or his sub-Suppliers, the Supplier will provide the Employer two years in advance, with full manufacturing drawings, material specifications and technical information required by the Employer for the purpose of manufacture of such items.

15.2 Further, in case of discontinuance of supply of spares by the Supplier or his sub-Suppliers, the Supplier will provide the Employer with full information for replacement of such spares with other equivalent makes, if so required by the Employer.

16.0 MARKING OF EQUIPMENT :

The materials must be marked/stenciled of Equipment No.

17.0 NOTIFICATION OF DESPATCH :

Each and every despatch should be notified immediately after despatch giving the relevant particulars like Truck No., Challan No. with date, C/Note No., Name of the transporter with their full address, date of despatch etc. to the following through telex/telegram/fax :

a)	Project Manager(I/c) HEC Ltd., Block B, NCL
b)	I/C(Purchase), Project Division HMBP Adm. Bldg. Annexe, HEC Ltd.,Ranchi- 834004

18.0 ***PAYING AUTHORITY***

Payment as mentioned above will be made by (I/C,Finance), Project Division, HEC Ltd., Ranchi 834 004.

19.0 ***PROGRESS REPORT***:

Progress of delivery/inspection must be given to the officer who has signed the purchase order, on the 15th and 30th of each month during urgency of delivery period. Where delivery period is crossed by the supplier, he has to take approval of buyer in writing before despatch.

20.0 ***SUBLETTING AND ASSIGNMENT :***

The supplier shall not, have without the previous consent in writing of the purchasers, sublet, transfer or assign the purchase order or any part thereof or interest therein or benefit or advantage thereof in any manner whatsoever. Provided nevertheless that any such consent shall not relieve the supplier from any obligation, duty or responsibility under the purchase order.

21.0 ***CHANGE IN A FIRM :***

Where the suppler is a partnership firm, a new partner shall not be introduced in the firm except with the previous consent in writing of the purchaser (which may be granted only as an exception) of a written undertaking by the new partner to perform the purchase order and accept all liabilities incurred by the firm under the purchase order prior to the date of such undertaking.

22.0 ***CONSEQUENCE OF BREACH :***

Should the supplier or a partner in the supplier firm commit breach of either of the clauses (20) and (21) of this commercial terms and conditions, it shall be lawful for the purchaser to cancel the purchase order and purchase or authorize the purchase of the stores at the risk and cost of the supplier firm and that even the provisions of Clause (9) shall, as far as applicable, apply.
The decision of Heavy Engineering Corporation Limited as to any matter or thing concerning or arising out of this clause or any question whether the supplier or any partner of the supplier firm has committed a breach of any of the conditions in this clause contained shall be final and binding on the supplier.

23.0 ***CONSIGNEE*** :

GM, Block B, NCL
P.O.- Gorbi
Distt – Singrauli (M.P.) - 486892

And bill to …… And GST No. of HEC: will be intimated later before issue of purchase order

24.0 ***FIRST FILL OF CONSUMABLES, OILS AND LUBRICANTS :***
Shall be provided by supplier at no extra cost as per Technical Specification.

25.0 ***TRAINING OF PERSONNEL*** :
Supplier shall provide free of cost training of personnel from PURCHASER/NCL for ……. month at his works. However, boarding, lodging and fare etc shall be borne by the purchaser/employer.

26.0 ***Q.A. PLAN :***
Approved QAP and inspection procedure by HEC's/CMPDIL's/NCL's Engineer/ Officer shall apply.

27.0 ***WEIGHT OF EQUIPMENT***
Weight of equipment must be intimated to the purchaser before effecting delivery.

28.0 ***COMMISSIONING SPARES***:
Will be supplied free of cost by supplier as required.

29.0 ***FORMAT AND NAME PLATE***
All the drawings should be prepared in the format and nameplates with drawing No. out of allotted drawing Nos. to be given to the supplier at the time of placement of order.

30.0 ***DRAWING, DOCUMENTS & MANUALS***
Will be furnished as per Technical Specification(Refer Enclosure-II).

31.0 ***UNIT RATES***
Unit rates of various supply item which may be required during execution of this package will remain firm till execution of the order.

32.0 ***BOUGHT-OUT ITEMS***:
Un-priced purchase order of supplier's bought-out items will be submitted to us within a week after issue of your order.

33.0 ***PAINTING***
Painting will be done as per Technical Speciation (Refer Enclosure-II).

34.0 ***REJECTION***
If the stores supplied are not to specifications/samples or in accordance with order and are rejected, the same will be removed by supplier at supplier's own risk and cost within 21 days of the date of intimation of rejection by Inspection Deptt/Stores Deptt/Purchase Deptt. If no instruction are received from supplier with regard to mode of despatch, purchaser/employer shall be free and reserve the right to return the rejected materials at supplier's risk and cost and to recover entire freight and other incidentals incurred by PURCHASER. Such rejected stores will be kept in our go down/site for 21 days from the date of intimation to supplier and thereafter those remain at supplier's risk and cost. The purchaser shall also be entitled to recover ground rent/demurrage charges on the rejected stores after expiry of free time mentioned above.

35.0 ***SPECIAL INSTRUCTION (DESPATCH MARK/INDENTIFICATION MARK)***
The following markings are to be done on each package
All packages shall be clearly and properly marked in English language with indelible paint stenciling. All previous irrelevant markings shall be carefully obliterated. The Supplier shall ensure that the following are clearly stenciled with good quality non-fading

paint on the packages in characters of 150 mm high or so depending upon size of the packages.

a) Name and address of the Consignee : Engineer *(designation & address to be given in the detailed letter of Acceptance)*

GM, Block B, NCL
P.O.- Gorbi, Distt- Singrauli (M.P.)-486892

b) Name of the Supplier/ :
d) Description :
e) Quantity :
f) Package Number :
g) Gross and Net Weights :
h) Outer dimensions :
i) Port of loading and :unloading (for imported Equipment, wherever applicable)
j) Place of loading and unloading

36.0 LEGALITY AND DISPUTE SETTLEMENT :

a) This order/purchase order shall be governed by and interpreted according to the relevant laws of India with jurisdiction of courts at Ranchi.

b) Any dispute that may arise between the parties out of or in-connection with this order/purchase order or for the breach thereof, shall be settled amicably and in good faith by negotiations between the designated executives of the parties, at the first instance.

c) In the event, the parties fail to resolve the disputes or differences arising out of or in connection with the order/purchase order or execution thereof through amicable settlement, the same shall be referred to settlement through "adjudication" of the same by the Sole Arbitrator appointed by PURCHASER. Such arbitration shall proceed as per the provisions of Arbitration and Conciliation Act, 1996and /or amended from time to time.

d) The arbitration shall be governed by and in accordance with the Arbitration and Conciliation Act, 1996 for adjudication of the disputes and differences including claims and counter-claims of the parties. The award rendered shall be final and binding upon both the parties.

e) The venue of arbitration shall be normally at Ranchi only, unless and until agreed otherwise by the parties.

f) The courts at Ranchi in the State of Jharkhand shall have the exclusive jurisdiction in respect of all the disputes arising out of this contract.

37.0 OTHER TERMS AND CONDITIONS

Other terms and conditions which are not mentioned above shall be as per General Terms and Conditions of Contract of the Corporation which can be downloaded from our website***https://etenders.gov.in/eprocure/app*),**

Enclosures:
1. Form of Tender (Annexure-A)
2. No Dispute Certificate (Annexure –B)
3. Check List for acceptance/ confirmation of commercial terms & conditions (Annexure-C)
4. Proforma for Security / Performance Bank Guarantee (Annexure-E)

Annexure-A

FORMS OF TENDER

Sub : TENDER for the Work _____

To,

_____

_____

Dear Sir,

We offer to execute the Works described above in accordance with the Conditions of Contract accompanying the Tender Document issued to us.

This tender and your written acceptance of it shall constitute a binding contract between us. We understand that you are not bound to accept the lowest or any tender you received.

We hereby confirm that this tender complies with the tender validity and tender security required by the tender documents.

Yours faithfully

Authorised Signature :

Name and Title of the Signatory :

Name of Tenderer :

Address :

Date :

(To be filled by the tenderer)

Annexure-B

NO DISPUTE CERTIFICATE

Sub : TENDER for the Work _____

To,

The Incharge/Purchase
Projects Division/HEC
HMBP Adm. Building(Annexe)
Dhurwa, Ranchi -834 004, Jharkhand

Dear Sir,

We hereby declare that there is no dispute with Heavy Engineering Corporation Ltd., Ranchi on date.

Yours faithfully

Authorised Signature :

Name and Title of the Signatory :

Name of Tenderer :

Address :

Date :

(To be filled by the tenderer)

ANNEXURE – C
Sh 1 of 2

CHECK LIST FOR ACCEPTANCE / CONFIRMATION OF COMMERCIAL TERMS & CONDITIONS

Please confirm your acceptance of following Clauses of Commercial Terms & Conditions :-

CLAUSE No.	PARTICULARS	ACCEPTANCE / CONFIRMATIONOF TENDERER (YES / NO)	REMARKS
1.0	SCOPE OF SUPPLY / WORK & SERVICES		
2.0	PRICE BASIS		
3.0	TAXES & DUTIES		
4.0	INSPECTION		
5.0	DELIVERY		
6.0	TERMS OF PAYMENT		
7.0	GUARANTEE		
8.0	BANK GUARANTEES		
9.0	LIQUIDATED DAMAGES DUE TO DELAY IN COMPLETION		
10.0	TRANSIT INSURANCE		
11.0	MODE OF DESPATCH		
12.0	PACKING, FORWARDING AND SHIPMENT		
13.0	DEMURRAGE, WHARF-AGE, ETC.		
14.0	FORCE MAJEURE		
15.0	LONG TERM AVAILABILITY OF SPARES		
16.0	MARKING OF EQUIPMENT		
17.0	NOTIFICATION OF DESPATCH		
18.0	PAYING AUTHORITY		
19.0	PROGRESS REPORT		
20.0	SUBLETTING AND ASSIGNMENT		
21.0	CHANGE IN A FIRM		
22.0	CONSEQUENCE OF BREACH		
23.0	CONSIGNEE		
24.0	FIRST FILL OF CONSUMABLES, OIL & LUBRICANTS		
25.0	TRAINING OF PERSONNEL		
26.0	Q.A. PLAN		
27.0	WEIGHT OF EQUIPMENT		
28.0	COMMISSIONING SPARES		
29.0	FORMAT AND NAME PLATE		
30.0	DRAWING, DOCUMENTS & MANUALS		
31.0	UNIT RATES		
32.0	BOUGHT-OUT ITEMS		
33.0	PAINTING		
34.0	REJECTION		
35.0	SPECIAL INSTRUCTION (DESPATCH MARK / IDENTIFICATION MARK)		

36.0	LEGALITY AND DISPUTE SETTLEMENT		
37.0	OTHER TERMS AND CONDITIONS		

ANNEXURE - E

SECURITY / PERFORMANCE BANK GUARANTEE
(*To be executed on Non-Judicial Stamp Paper of appropriate value*)
(TO BE ISSUED BY ANY NATIONALISED/ SCHEDULED BANK
AUTHORISED BY RBI TO ISSUE A BANK GUARANTEE)

..... (***Name of the Bank***)

Address.....

Guarantee No. .....

A/c Messrs ..... (***Name of Supplier***)

Date of Expiry .....

Limit to liability (***currency & amount***) .

Contract No. .....

For ..... (***Name of Facilities***)

Subject:..... **Performance Bank Guarantee**.

Date ..... 201.

To
Heavy Engineering Corporation Limited
P.O. Dhurwa, Dist. Ranchi, Pin - 834 004, (Jharkhand)

Dear Sir,

We refer to the Contract Agreement / Purchase Order (hereinafter called the "Contract") Reference No..... Dated ..... between you and M/s. (***Name of the Supplier***) (hereinafter called the "Supplier") for the design, civil, manufacture, supply of plant & equipment, refractories and structures, storage, insurance & handling, erection, testing, commissioning and performance guarantee tests of .. . (***Name of the Facilities***) (**strikeout whichever is not applicable).**

In consideration of the Heavy Engineering Corporation Limited, having its Registered office at Plant Plaza Road, P.O. Dhurwa, Ranchi - 834004 (hereinafter called to as the "Purchaser" which expression shall unless repugnant to the context or meaning thereof, include all successors, administrators and assigns) having awarded to _____ *[Name & Address of the supplier]* (hereinafter called to as "Supplier" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators, executors and assigns) the work _____ *[Name of the Work]* by issue of Letter of Award No.

_____ *[Letter of Intent No.]* and the same having been unequivocally accepted by the Supplier resulting into a Purchase Order No._____ dated _____ valued at _____ *[value of P. O.]* (hereinafter called 'the Contract') and the Purchaser having agreed to accept Performance Bank Guarantee of ___ *[indicate figure]%* of the Contract Sum _____ *[amount in figures and words)* from a Nationalized/Scheduled Bank for due performance of the work executed by the Supplier as per the terms & conditions contained in the said Contract.

We, _____ *[name of the Bank]*, of _____ *[address of the Bank]* (hereinafter called to as "Bank" which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Purchaser immediately on demand and or, all money payable by the Supplier to the extent of _____ *[amount of guarantee in figures and words]*, at any time from _____ to _____ without any demur, reservation, recourse, contest or protest and/or without any reference to the Supplier. Any such demand made by the Purchaser on the Bank shall be conclusive and binding notwithstanding any difference between the Purchaser and the Supplier or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. We agree that the Guarantee herein contained shall be irrevocable and shall continue to be enforceable as per the terms & conditions contained in the said Contract.

The Purchaser shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee, from time to time, to extend the validity of time of Performance of the Contract by the Supplier. The Purchaser shall have the fullest liberty without affecting this Guarantee, to postpone, from time to time, the exercise of any powers vested in them or of any right which they might have against the Supplier, and to exercise the same at any time in any manner, and either to enforce or to forebear or to enforce any covenants contained or implied in the Contract, between the Purchaser and the Supplier or any other course or remedy or security available to the Purchaser. The Bank shall not be released of its obligations under these presents by any exercise by the Purchaser of its liberty with reference to matter aforesaid or any of them or by reason of any other act of forbearance or other acts of omission or commission on the part of the Purchaser or any other indulgence shown by the Purchaser or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the Bank. The Bank also agrees that the Purchaser at its option shall be entitled to enforce this Guarantee against the Bank as a Principal Debtor in first instance, without proceeding against the Supplier and notwithstanding any security or other Guarantee that the Purchaser may have in relation to the Supplier's liabilities.

This Bank Guarantee shall be operable at State Bank of India, Commercial Branch, MECON Campus, Doranda, Ranchi.

Dated this _____day of _____ at _____

For and on behalf of the Bank.
Signature _____
Name _____
Designation _____
Common Seal of Bank _____

TECHNICAL SPECIFICATION FOR
SEMI MOBILE CRUSHING PLANT (SKID MOUNTED) AND SECONDARY SIZER

1.0 SCOPE OF WORK

The scope of work includes design, engineering, manufacture, inspection, assembly, shop testing, painting, packing, forwarding, transportation and supply at site, supervision of erection, testing, commissioning, trial run and PG Test of ***01 set of Semi Mobile Crushing Plant (Skid Mounted) and 01 no. of Secondary Sizer*** complete with all structural, mechanical, electrical and auxiliaries for Coal Handling Plant, Block B Project, Northern Coalfields Limited.

The entire crushing plant shall be supplied, erected & commissioned through OEM having experience of manufacturing similar plants (Mobile/semi-mobile) of at least 1000 tph and having satisfactory performance of 2 years in operation. If experience towards Overseas jobs is submitted, then the same should be vetted/ endorsed by the relevant* embassy/high commission concerned, towards authenticity of document in English or translated in English language. *(Relevant embassy/High Commission means the embassy/High Commission in India of the country where the bidder has executed the said work or country of origin of the bidder OR the Indian embassy in the country where bidder has executed the work or country of origin of the bidder.).

1.1 The scope of bidder shall consists of but not limited to the following:

a) Supply of One set of semi mobile crushing plant comprising of 01no.of receiving hopper, 01 no of primary sizer & 01 no. of apron feeder

b) Supply of 01 no of secondary sizer

c) Fixing bolts & nuts including foundation bolts required for installing the equipments.

d) Required quantity of initial fill of oil, grease, lubricants, hydraulic fluid etc. and other consumable which are necessary for cleaning / flushing including erecting, testing and commissioning

e) All electrics / electrical equipment as indicated under relevant clauses/Annexures.

f) Supervision of erection, trial run, commissioning, and PG Test.

g) Drawing & Documents as indicated under relevant clauses.

h) Statutory approval wherever required will be taken for the equipment being supplied from relevant state/central authorities

i) Any other accessories and components needed for successful operation of the equipments to meet the system requirement.

j) Bidders shall submit list of recommended spares for 5 years O & M for Semi mobile crushing Plant (including sizers, apron feeder, liners etc.) and secondary crusher in format as attached in Annexure-2 .

1.2 Scope Matrix

Sl.No.	Description	Qty.	Bidders scope	HEC's scope
1	Skid mounted Semi Mobile primary crushing plant	1 lot		
a	Receiving Hopper with liner & supporting structure	1	YES	NO
b	Heavy Duty Apron feeder complete with drive unit including motor	1	YES	NO
c	Primary Twin Shaft Sizer complete with drive unit including motor	1	YES	NO
d	Rock breaker..	1	NO	YES
e	Electric Hoist	1	YES	NO
f	Steel Ramps	As required	YES	NO
g	Discharge Chutes from primary sizer to receiving conv. C1.		YES	NO
2 a	Secondary Sizer complete with drive unit including motor	1	YES	NO
b	Feed and Discharge Chute for Secondary sizer		NO	YES
c	Cranes, hoists for maintenance purpose within secondary sizer house		NO	YES
3	Discharge chute, dribble chute, scrapper conv. inter connecting chute and skirt board etc. within the battery limit	1 lot	YES	NO
4	Structural, Platforms, walkways, ladders etc. related to Semi Mobile Sizer Station	1 lot	YES	NO
5	Structural steel work related to Hopper, Apron Feeder ,skid and supports etc.	1 lot	YES	NO
6	Grating over hopper (NCL Scope)		NO	-
7	Civil Works			
a	Civil work related to Ramp & retaining wall		NO	YES
b	Any kind of Civil &Construction of foundation for equipments		NO	YES
7	Utility			
a	Dust Suppression System	1 lot	NO	YES
8	Services			

a	Engineering and Design of complete Sizing station package as per defined scope		YES	NO
9	Painting		YES	NO
10	Packing, forwarding and transportation to site		YES	NO
11	Unloading, storage and security at site		NO	YES
12	Supervision of Erection, Installation & Commissioning		YES	NO
13	Installation, Erection & Commissioning at site		NO	YES
14	Commissioning Spares		YES	NO
15	First fill of oil, lubricants and consumables		YES	NO
16	Special Tools & Tackles, if required		YES	NO

Notes:

- Scope Matrix for Electrics refer Annexure-1 (Electrical Specification)
- Any Item or Equipment not specifically mentioned but essential for Proper Installation, operation, Maintenance and Safety of Plant, Equipment and Personnel is in Scope of Work.
- Successful Bidder shall provide civil assignment drawings along with load data for civil design.
- Make of bearings shall be SKF/FAG.
- Preferred arrangement/location for Plain Water Dust suppression at hopper top shall be shown/ suggested by Successful bidder.
- Provision for rock breaker mounting shall preferably be provided on semi mobile crushing unit.
- Specification/details of grating shall be provided by successful bidder for providing the same to NCL for procurement.

2.0 PROPOSED SYSTEM OF CHP (4.5 MTPA)

Coal will be coming from shovel-dumper combination, i.e., blasted coal of (-) 1500 mm size. The ROM blasted coal of (-) 1500mm size shall be brought from the mine by 100T rear dumpers and discharged into receiving hopper (two sides dumping) of semi-mobile primary crushing plant. The semi-mobile primary crushing plant will be installed inside the mine quarry. The apron feeder installed below the receiving hopper will receive ROM coal from hopper and feed into Semi-mobile crushing plant. The Semi-mobile crushing plant will crush down the ROM coal to (-) 300 mm nominal size. Crushed coal of (-) 300 mm nominal size will be discharged onto the conveyor C1. Semi-mobile crushing plant shall also have provision of maintenance hoist. One number of pedestal mounted Rock Breaker has been provisioned to deal with oversized lump of (+) 1500 mm size. The coal from the

conveyor C1 will be transferred to conveyor C2. The coal from the conveyor C2 will be fed to the secondary sizer in secondary sizer cum transfer house for further crushing from (-) 300 mm nominal size to (-) 100mm size, after which it will be fed to conveyor C3. The coal from conveyor C3 will be fed to either conveyor LB or conveyor TLC through flap gate fitted two way chute. Further, conveyor LB will feed coal to exist. tripper conveyors 4C/5C of existing 3.5 Mtpa CHP (Phase – II Main CHP) bunker of 20000 t capacity through flap gate fitted two way chute. Conveyor TLC will feed coal to shuttle conveyor installed above the 5x100 t capacity truck loading hopper. Further, shuttle conveyor SC will feed coal into truck loading hopper.

3.0 OPERATIONAL PARAMETERS & BASIC DATA

Coal Production by mine	8 Mtpa (Normative)/ 10 Mtpa (Peak)
Handling capacity of the proposed CHP	4.5 Mtpa
No. of working days considered/ year	330 days (However, the design should be suitable for continuous operation round the year.)
No. of working shifts/ day	3 shifts
No. of effective working hrs. per shift	5
Method of coal winning	By Shovel - Rear Dumper combination
Details of Dumper for Coal	Rear Discharge Dumper 100T
Quality and other parameters of coal grade	Non-Coking
H.G.I.	40 (for equipment design)
% of inherent moisture	7-10 %
% of surface moisture	Upto 15% but may go upto 20% in rainy season.
Bulk density (t/m^3)	0.8 for volume calculation, 1.15 for load and power Calculation
Specific gravity of coal	1.6 -1.65
Compressive strength of coal	1200 kg/cm^2 (For equipment design)
% of shale & sand stone	Upto 30 (For equipment design)
Type of Dumper/ capacity	Rear Dumper 100T
Feed size of ROM coal -Nominal	(-) 1500 mm (Max.)
Final Product size of coal	(-) 100 mm **(95% minimum)** (Upto 150mm size limited to 5%)
No. of product	one

Mode of despatch	By rapid loading system of existing 3.5 Mtpa CHP (Phase – II Main CHP)/ Truck
Maximum temperature	50 deg C
Minimum temperature	4 deg C

4.0 EQUIPMENT SPECIFICATION

4.1 SEMI-MOBILE CRUSHING PLANT (SKID MOUNTED)

4.1.1 DUTY REQUIREMENTS

- Sizer will operate on an average for 15 hours a day over 330 days per year in general, but the design of the assemblies/ parts of Sizer should be such that it can be operated for all the 365 days, for 24 hours per day, if required.
- The Sizer shall have a ROM feed size up to 1500 mm x 1000 mm x 1000 mm in general but occasional pieces bigger than this dimension cannot be ruled out. The rated capacity shall be 1600tph. However, peak capacity will be 1920 tph with desired product size of (-) 300 mm nominal. Over size, if any, should not be more than 400 mm in any direction (three dimensionally).
- The Sizer will be operated continuously and therefore, provision for running and preventive maintenance should be incorporated in such a way that it can be performed during operation period. The sizer shall be mounted on rails so that it can be shifted sideways easily for maintenance. There shall be enough room on the sizer platform for maintenance.
- The Sizer design should be such that it should be able to start in the full load condition and choke feeding condition.
- The Sizer is required to operate in high dusty atmosphere and for this, necessary design measures should be taken especially for electrical, lubrication and hydraulic installations.
- Occasionally, ROM feed may contain some metallic pieces of large size such as excavator teeth and track pads etc. Necessary protection should be incorporated in the design to take care of this. Also the sizer shall be able to be scrolled and arrangement shall be made to remove tramp metals.
- The Sizer is required to operate in ambient temperature and humidity varying widely at different time during the year.
- For deciding the size of Sizer, crushing strength as given above (considering the worst scenario viz. crushing only coal with 20% moisture & 30% shale) shall be factored.
- For percentage of shale in ROM coal feed, refer to clause above of operational parameters and Basic data. Sizer selection shall take care of this factor.
- Bulk density of shale shall be determined by the successful bidder through laboratory test. The test

report shall be submitted along with the drawings for approval.

- The percentage of moisture in rainy season may go up to 20%. The Sizer shall be selected considering the worst scenario i.e. crushing only coal with 20% moisture.
- Any other details required for selection of Sizer shall be decided by the supplier in consistence with the requirements of this Bidding Documents.

4.1.2 GENERAL DESCRIPTION

The semi-mobile crushing plant should be designed in two parts in order to be moved, when relocation warranted. During crushing operations, part I (feed unit) with feed hopper, apron feeder and control cabin should rest on a substructure with legs and part II Sizer unit on another substructure also with legs. The ground on which the legs of the plant parts I and II stand at the same height must be in level. The two parts are not connected. Hard wooden buffers serve for correct spacing.

i. COAL RECEIVING UNIT

Coal receiving unit is low height, semi-mobile, skid mounted unit consisting of Apron feeder, with design capacity. Dumper receiving arrangement has been shown in the drawing which is for reference of bidder. Arrangement shall be finalized during detail engineering as per requirement of NCL/CMPDIL.

The apron feeder will be of suitable width, with capacity equal to that of the crushing unit with matching suitable electric drive motor. Adequate height skirt plates will be installed on the apron feeder in such a way that the assembly acts as a receiving hopper to receive coal from dumpers. The apron feeder will be of robust construction, heavy duty type and suitable for round the clock continuous operation. It will be suitable for use in adverse environmental conditions and dusty and moist surroundings. The feeder will be capable of absorbing the impact of freely falling lumps of maximum size from the dumper discharge height. The overlapping pan (apron) design should prevent passing of fine coal to underneath of the feeder. Pans (apron) will preferably be heavy steel plates with replaceable wear resistant liners for this type of duty. A feeding governor or sliding gate of suitable design will be provided to maintain a stipulated thickness of material layer. The side boards will be lined with replaceable wear plates.

ii. CRUSHING UNIT

Crushing unit will be skid mounted, low height, semi-mobile type, consisting of Sizer and discharge chute (integral part of Sizer unit, but it can be easily dismounted for relocation) etc.

The Sizer roll(s) will be fitted with replaceable crushing teeth. The tooth design will be in such a way that it can easily nip the in pit coal lumps and generate minimum fines. The Sizer design will be such that it is able to operate round the clock continuously. It will be suitable for dusty condition. It will be able to start at full load conditions and robust enough to absorb the impact of freely falling coal lumps. Occasionally, ROM feed may contain some metallic pieces of large size such as excavator teeth and track pads etc. Necessary protection should be incorporated in the design to take care of this.

Suitable lifting devices will be provided for ease in installation, dismantling and taking out components for maintenance. The components/ parts will also be provided with lifting lugs.

Unit will be designed to provide suitable maintenance platform for inspection, maintenance etc. It will also have an operator's cabin installed at a suitable location for the operator of the machine. Operator should be able to view the crushing operation.

4.1.3 SPECIFICATION OF ASSOCIATED EQUIPMENT

A. HOPPER:

The coal receiving hopper of minimum 170 T capacity shall be constructed by building up side skirts on Apron Feeder. Steel plate sections shall be bolted to feeder sections to build up capacity of the receiving hopper. Hopper includes suitable rail /structural stiffeners at its outer side with 16 mm thick MS base plate and 16 mm thick suitable Mn-steel liners to be fitted with counter sunk bolts. Skirts shall extend the whole length of Apron Feeder to receive dumpers simultaneously as shown in the drawing. The general arrangement of the hopper is shown in the said drawing.

B. APRON FEEDER

1. **DUTY**

The apron feeder will be of robust construction and extra heavy-duty type. It will be able to take impact of coal/ shale lump size indicated elsewhere from a height as indicated in Operational Parameters. It will be able to handle wet material during rainy season without loss of efficiency. The working place may be quite dusty. Inclination of the Feeder may be up to 20 degree.

2. **OPERATIONAL PARAMETERS AND BASIC DATA**

Free fall height : To be kept as minimum as possible.

Feeder size : a) Width between skirts to suit system design. (Minimum 2000mm).

b) Length between sprocket centres to suit system design.

Capacity (tph):

a) Nominal : 1600

b) Peak : 1920

c) Lower limit : 50% of nominal capacity.

3. CONSTRUCTIONAL FEATURES

In general, the construction of the Feeder will be to suit the duty requirements as stated earlier. The overlapping pans should prevent spillage. The construction materials will be such that maximum life with abrasive coal mixed with shale and sandstone could be achieved. The equipment will be easily accessible. Shafts are of forged steel machined precisely. Scrapper conveyor shall be provided. In particular, it will have the following specific features:

a) MAIN FRAME AND SIDE BOARD

These will be of heavy steel construction suitably cross braced and welded with heavy cross members to withstand the repeated and continuous service conditions. The side board will be lined with replaceable liners at wear points. The side board will extend full length in order to guide material.

b) PAN

Pans are to be constructed of heavy overlapping manganese steel plates of minimum thickness 25 mm which are attached to heavy duty conveyor chains. The construction is to also eliminate any spillage from between the pans.

c) CONVEYOR CHAINS

Chains are to be made of forged alloy steel, case hardened to give a high degree of abrasion resistance. Bushings and pins are also to be case hardened in order to have sufficient tensile strength to withstand continuous severe operation for a long period. Chain seals should prevent entry of abrasive foreign materials for longer chain life. Construction should ensure that the chains are performing duty of pulling pans only. The combined breaking strength of chain should not be less than 400 tonne.

d) UPPER IMPACT ROLLERS

During operation the feed point of the coal shale dropping on the apron pans are at very high level. To absorb load of impact it is desirable that the upper impact rollers are made of high quality manganese steel and

hardened. These impact rollers mounted on bush bearings will be rigidly placed on the upper face of the frame along the direction in which the apron proceeds. The rollers should support each pan at three points and throughout the entire length of the apron feeder.

e) RETURN ROLLERS

Return run of the apron pans will be supported by manganese steel and hardened return rollers fitted on shaft with bush bearings.

f) LUBRICATION

The bearings are babbitted and shall be greased occasionally. Alternatively, heavy duty bearings with proper lubrication system may also be provided. To facilitate such greasing, a centralised lubrication system with compressed air operated (for cleaning of the tubes before every filling) shall be provided. This consists of compressed air operated grease pump, distribution valves and accessories such as fittings, flexible hoses, piping and etc. Bi9dder shall consider compressor in their scope of supply.

g) DRIVE

The apron feeder will be provided with a variable speed AC motor drive arrangement to give varying discharge. The controls indicators will be housed in dust and vermin proof steel enclosure. Suitable interlock and sequence control will also be provided. The drive will be complete with necessary speed reducers, couplings etc.

h) GUARDS

Necessary guards will be provided for all moving parts. Easy approach must be available for inspection and maintenance purpose.

C. SIZER

In general the Sizer shall have the following features:

(a) HOUSING FRAME

The housing frame shall be fabricated from heavy steel plates to withstand heavy shocks and loads. End frames shall be machined from solid frame. Side members shall be spigotted and bolted to end plates forming a very robust assembly capable of containing any dynamic forces created by Sizer while in operation. The sections shall be easily removable for ease in maintenance.

(b) SIZER ROLL

The shaft and gears shall be fully machined from solid one piece forging of high carbon steel/Alloy steel and slotted to accept crushing segments. Circumferential dia. of shaft with forged ring tip should be 1100mm minimum. The shaft bearing shall be self- aligning double roll spherical roller bearing or split cylindrical roller bearings with swiveling cartridge and shall be selected for rated life of at least 50,000 hrs at full load.

The gears shall be oil/grease lubricated. The tooth profile shall be designed suitably to meet the duty conditions and produce minimum of fine generation. In order to minimise fine generation the roll speed shall be minimum.

(c) LUBRICATION

All bearings gears and pinions shall be oil lubricated. Non drive end shaft bearings shall be lubricated from manual fill oil baths. Oil levels should be checked by slight glasses.

(d) WEAR PLATES

The Sizer shall be fitted with wear plates completely covering the inside of body and crushing chamber. These plates shall be made from high wear resistant steel and shall be doweled and bolted to units allowing easy removal when required and positive secure long term location.

(e) DRIVE AND CONTROL

Refer Annexure-1 (Electrical Specification)

(f) ELECTRICAL

Refer Annexure-1 (Electrical Specification)

4.2 SECONDARY SIZER

4.2.1 DUTY REQUIREMENTS

The Sizer shall be selected/ designed to meet the following duty requirements:

- Sizer will operate on an average for 15 hours a day over 330 days per year in general, but the design of the assemblies/ parts of Sizer should be such that it can be operated for all the 365 days, for 24 hours per day, if required.
- Sizer shall have a feed size (-) 300 mm in general but occasional pieces bigger than this dimension (maximum 400mm) cannot be ruled out. However, peak capacity will be with desired product size of (-) 100 mm (95% minimum). Over size, if any, should not be more than 150 mm in any direction.
- The Sizer will be operated continuously and therefore, provision for running and preventive

maintenance should be incorporated in such a way that it can be performed during operation period.

- The Sizer design should be such that it should be able to start in the full load condition and choke feeding condition.
- The Sizer is required to operate in high dusty atmosphere and for this, necessary design measures should be taken especially for electrical, lubrication and hydraulic installations.
- Occasionally, feed may contain some metallic pieces of large size such as excavator teeth and track pads etc. Necessary protection should be incorporated in the design to take care of this.
- For deciding the size of Sizer, crushing strength as given above in operational parameters and basic data (considering the worst scenario viz. crushing only coal with 20% moisture & 30% shale) shall be factored.
- For percentage of shale in ROM coal feed, refer operational parameters and basic data. Sizer selection shall take care of this factor.
- Bulk density of shale shall be determined by the supplier through laboratory test. The test report shall be submitted along with the drawings for approval.
- The percentage of moisture in rainy season may go up to 20%. The Sizer shall be selected considering the worst scenario i.e. crushing only coal with 20% moisture.
- The Sizer shall be mounted on rails such that it can be shifted sideways easily for maintenance with the upper chute dismantled.
- Any other details required for selection of Sizer shall be decided by the supplier in consistence with the requirements of this Bidding Documents.

4.2.2 COMPLIANCE WITH STANDARDS

The design, selection, and construction of equipment, components and material shall conform to relevant Indian Standard Specifications and Codes of Practice (latest revisions) or in their absence to equivalent BS/ DIN/ ANSI Standards. Copy of the relevant standard(s) shall be furnished along with the drawing.

4.2.3 SIZER

The inlet hood shall be torsion resistant steel plate design. Side walls shall be made of strongly ribbed base plates, 20mm thick and 15mm wear plates. The inlet hood is equipped with maintenance flaps on the side walls and acoustic type level sensor. The Sizer roll(s) will be fitted with replaceable crushing teeth. The tooth design will be in such a way that it can easily nip the inpit coal lumps and generate minimum fines. The

Sizer design will be such that it is able to operate round the clock continuously. It will be suitable for dusty condition. The components/parts will also be provided with lifting lugs.

In general the Sizer shall have the following features:

a) HOUSING FRAME

The housing frame shall be fabricated from heavy torsion resistant steel plates to withstand heavy shocks and loads. End frames shall be machined from solid frame. Side members shall be spigotted and bolted to end plates forming a very robust assembly capable of containing any dynamic forces created by Sizer while in operation. The sections shall be easily removable for ease in maintenance.

b) SIZER ROLL

The shaft and gears shall be fully machined from solid one piece forging of high carbon steel/Alloy steel and slotted to accept crushing segments. Circumferential dia. of shaft with tooth should be 700mm minimum. The shaft bearing shall be self-aligning double roll spherical roller bearing or split cylindrical roller bearings with swiveling cartridge and shall be selected for rated life of at least 50,000 hrs at full load. The gears shall be oil lubricated. The tooth profile shall be designed suitably to meet the duty conditions and produce minimum of fine generation. In order to minimise fine generation the roll speed shall be minimum.

c) LUBRICATION

All bearings gears and pinions shall be oil lubricated. Non drive end shaft bearings shall be lubricated from manual fill oil baths. Oil levels should be checked by slight glasses.

d) WEAR PLATES

The Sizer shall be fitted with wear plates completely covering the inside of body and crushing chamber. These plates shall be made from high wear resistant steel and shall be doweled and bolted to units allowing easy removal when required and positive secure long term location.

e) **DRIVE AND CONTROL**

Refer Annexure-1 (Electrical Specification)

f) **ELECTRICAL**

Refer Annexure-1 (Electrical Specification)

5.0 TECHNICAL DATA SHEET FOR EQUIPMENT

Bidders to submit filled in data sheets as per Annexure-2 of TS.

6.0 PAINTING

Painting at Manufacturing Works:

Painting shall be carried out after issue of inspection certificate. All exposed metal parts of the equipment including piping, structure railing etc. wherever applicable, after installation unless otherwise surface protected, shall be first painted with at least two 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, scarping or sand blasting, and the same being inspected and approved by the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative 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 HEC's/NCL's/Consultant's Engineer.

Shop primer for all steel surface which will be exposed to operating temperature below 95°C shall be selected by the successful bidder, 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°C and such primers shall also be subject to the approval of the HEC's/NCL's/Consultant's Engineer.

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

PRESERVATIVE SHOP COATING:

- 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 beforehand 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.
- All other steel surfaces which are not to be painted shall be coated with suitable dust preventive compound subject to the approval of the engineer.

PROTECTION:

All coated surfaces shall be protected against abrasions, impact, discoloration and any other damages. All exposed threaded portions shall be suitably 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.

7.0 INSPECTION , TESTING AND INSPECTION CERTIFICATE

Inspection & Testing to be carried out at Bidders shop/premises after control assembly of sizers, feeders etc.: Load/no load test as per Approved Quality assurance Plan (QAP)

Inspecting Authority : HEC/CMPDIL/NCL/Authorised Agency

7.1 The manufacturer will prepare a detailed quality Assurance Plan (QAP) in purchaser's format & submit the same in Quintuplicate (5) for HEC /CMPDIL/NCL approval. The QAP shall cover all necessary checks related to receiving inspection of raw materials/boughtout items, in process & final inspections including painting, marking, packing etc.

7.2 The HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative and/or outside inspection agency acting on behalf of the Purchaser shall have at all reasonable times access to the Successful bidder'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 and if part of the works is being manufactured or assembled at other premises or works, the Successful bidder shall obtain for the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative permission to inspect as if the works were manufactured or assembled on the Successful bidder's own premises or works.

7.3 Successful bidder shall give the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative fifteen (15) days written notice of any material being ready for testing. Such tests shall be to the Successful bidder's account except for the expenses of the Inspector. The HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative, 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 Successful bidder 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 tests in triplicate.

7.4 The HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative shall within fifteen (15) days from the date of inspection as defined herein give notice in writing to the Successful bidder, of any objection

to any drawings and all or any equipment and workmanship which in his opinion is not in accordance with the Technical Specification. The Successful bidder 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 HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative giving reasons therein, that no modifications are necessary to comply with the contract.

7.5 When the factory tests have been completed at the Successful bidder's or sub-vendors works, the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative shall issue a certificate to this effect within fifteen (15) days after completion of tests but if the tests are not witnessed by the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative, the certificate shall be issued within fifteen (15) days of the receipt of the Successful bidder's test certificate by the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative. Failure of the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative to issue such a certificate shall not prevent the successful bidder from proceeding with the works. The completion of these tests or the issue of the certificate shall not bind the Purchaser to accept the equipment should it, on further tests after erection, be found not to comply with the contract.

7.6 In all cases where the contract provides for tests whether at the premises or works of the Successful bidder or of any sub-vendors, the Successful bidder, 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 HEC's/NCL's/Consultant's Engineer and/or his authorised representative to carry out effectively such tests of the equipment in accordance with the contract and shall given facilities to the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative to accomplish testing.

7.7 The inspection by HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative and issue of Inspection Certificate thereon shall in no way limit the liabilities and responsibilities of the Successful bidder in respect of the agreed quality assurance programme forming a part of the contract.

7.8 INSPECTION & QUALITY CONTROL BEFORE DESPATCH

7.8.1 SPECIAL MATERIAL

The manufacturer should furnish during inspection without extra charges test certificates covering mechanical properties and chemical composition for special raw materials used including that of liners. The certificates should be from the approved testing laboratories such as Small Industries Services, CMERI, Durgapur, NPL, New Delhi etc. If considered necessary, samples for material may be selected as per relevant latest Indian Standards

and code by the Employer's representative from amongst the raw materials and manufactured components of equipment and got tested in the approved laboratory. In case samples so selected fail to meet the standard specifications the whole lot of manufactured components will be rejected and disqualified for use again for any of the Employer's supplies.

7.9 STAGE INSPECTION

Employer/CMPDI/HEC reserves the right to carry out inspection at any stage of the process of manufacture and assembly for which all facilities will be provided by the successful bidder. Before carrying out such inspection, necessary information will be given to the manufacturer by the Employer/CMPDI.

7.10 AVAILABILITY OF STANDARD SPECIFICTION METERS, GAUGES ETC. FOR TESTING & INSPECTION.

The manufacturer will maintain all relevant standards and codes of practice for manufacture, inspection and testing of components of the equipment ordered. He will also maintain a set of meters, gauges etc. as may be required for testing and inspection of components.

7.11 CHECKS DURING INSPECTION

The details of the checks to be carried for various components are to be submitted by the successful bidder for HEC/CMPDI/NCL's approval. However, some indicative checks on different items are given below which should necessarily form part of the quality assurance programme to be agreed with the CMPDI/NCL.

- All plates above 20mm thickness shall be ultrasonically tested for laminations.
- Shaft forgings and castings shall be checked for hardness, microstructure and ultrasonic testing in addition to check for chemical and mechanical properties.
- Following minimum NDT requirements to be ensured for welds:

i) Butt welds : 10% Ultrasonic/Radiographic and 100% Magnetic particle

ii) Fillet welds : 10% Magnetic particle

8.0 TEST

Procedures for start up, trial operation & Performance Guarantee Test shall be as under and will be carried out in presence of Purchaser & Employer. Presence of Successful bidder's representative, if applicable, during above test shall be as per Scope mentioned above.

8.1 START UP

On completion of erection of the equipment by the Purchaser and before start-up, each item of the equipment shall be thoroughly cleaned and then inspected jointly by the Engineer and the Successful bidder 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 Successful bidder's Quality Assurance Programme.

The Successful bidder'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.

8.2 TRIAL OPERATION

8.2.1 The plant shall then be put 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.

8.2.2 The duration of trial operation of the complete equipment shall be fourteen (14) days out of which at least seventy two (72) hours shall be continuous operation on full load or any other duration as may be agreed to, between the Engineer and the Successful bidder. 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.

8.2.3 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.

8.2.4 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 Successful bidder. 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 to the full satisfaction of the Engineer In charge to enable the later to accord permission to carry out performance and guarantee tests on the plant.

8.3 PERFORMANCE AND GUARANTEE TEST

8.3.1 The final test as to the performance and guarantees shall be conducted at site by the Employer. Such tests will be commenced within a period of two (2) months after successful completion of trial operations. Any extension of time beyond the above two (2) months shall be mutually agreed upon.

8.3.2 These tests shall be binding on both the parties (Successful bidder & Purchaser) to determine compliance of the equipment with the performance guarantees.

8.3.3 The available instrumentation and control equipment will be used during such tests and the Engineer In charge will calibrate, all such measuring equipment and devices as far as practicable. However, immeasurable 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.

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

8.3.5 The guaranteed performance figures of the equipment shall be proved by the Successful bidder during these performance and guarantee tests. Should the results of these tests show any decrease from the guaranteed values, the Successful bidder shall modify the equipment as required to enable it to meet the guarantees. In such case, performance and guarantee tests 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 Successful bidder. Duration of performance guarantee

tests will be of one month of which 6 (six) days continuous on load operation is the minimum requirement and in case it fails, the process of performance guarantee tests will be repeated.

8.3.6 In addition to other tests, the specific tests to be conducted on equipment has been brought out in the technical specifications.

8.3.7 Performance and guarantee test shall make allowance for instrumentation errors as may be decided by the engineer-in-charge.

8.3.8 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.

8.4 TAKING OVER

Upon successful completion of all the tests to be performed at site on equipment furnished and erected by the contractor, the engineer shall issue to the contractor a taking over certificate as a proof of the final acceptance of the equipment. Such certificate shall not unreasonably be withheld 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 contractor of any of his obligations which otherwise survive, by the terms and conditions of the contract after issuance of such certificate.

9.0 GUARANTEE

1) The successful bidder shall warrant that the equipment will be new and in accordance with the technical specification and be free from defects in material, design, manufacture and workmanship.

2) The successful bidder's liability shall be limited to the replacement of any defective parts in the equipment of his own manufacture or those of his sub-contractor (s)/ sub-vendor (s) or replacement of the complete equipment, under normal use and arising solely form faulty design, manufacture, materials, and/or workmanship provided always that such defective parts/ equipment are repairable at the site/ replacing the equipment as a whole without hampering the operation of the plant. Such replaced defective parts/ old equipment shall be returned to the successful bidder unless otherwise arranged.

10.0 SPARES, CONSUMABLES,TOOLS TACKLES

10.1 COMMISSIONING SPARES

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

10.2 SPECIAL TOOLS AND TACKLES

The Successful Bidder 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.

10.3 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, shall be furnished by the Successful Bidder

10.4 LONG TERM AVAILABILITY OF SPARES

The Successful Bidder shall guarantee the long term availability of spares to the owner for the full life of the equipments. The Successful Bidder shall guarantee that before going out of production of spare parts of the equipment he shall give the owner at least twelve (12) months advance notice so that the latter may order his bulk requirement of spares, if he so desires. The same provision will also be applicable to sub-vendors of successful bidder. Further, in case of discontinuance of manufacture of any spares by the Successful Bidder or his sub-vendors the Successful Bidder will provide the owner two years in advance, with full manufacturing drawings, material specifications and technical information required by the owner for the purpose of manufacture of such items.

Further, in case of discontinuance of supply of spares by the Successful Bidder or his sub- vendors the Successful Bidder will provide the owner with full information for replacement of such spares with other equivalent makes, if so required by the owner.

The Successful Bidder shall provide the owner with a "directory" of his sub-vendors giving the addresses and other particulars of his sub-contractors. The owner, if he so desires, shall have the right to procure the spares directly from sub-contractors.

Notwithstanding anything stated elsewhere in the bid documents, the prices of all spares will be generally in accordance with the mutually agreed prices.

The Successful Bidder will indicate in advance the delivery period of the items of spares, which the owner may procure. In case of emergency requirements of spares, the Successful Bidder would make every effort to expedite the manufacture and delivery of such spares on the basis of mutually agreed time schedule.

The procedure specified above shall apply for future procurement of items included in stand by spare list, mandatory spares lists, optional spares list and special tools, plants and equipment list, if any, specified in the bid documents.
The Successful Bidder shall indemnify the owner for the availability of long time spares as per the terms and conditions laid down above.

In case of equipment/ system (including manufactured domestic and overseas) the availability of spare parts for 10 years shall have to be guaranteed by the Successful Bidder. In this regard, the Successful Bidder will have to provide, an undertaking regarding supply of spare parts and maintenance support as and when required.

11.0 PACKING, FORWARDING AND SHIPMENT

11.1 PACKING

All the equipment shall be suitably protected, coated, covered or boxed and crated to prevent damage or deterioration during transit, handling and storage at site till the time of erection.. The Successful Bidder shall be responsible for any loss or damage during transportation, handling and storage due to improper packing.

The Successful Bidder shall prepare detailed packing list of all packages and containers, bundles and loose material forming each and every consignment dispatched to site. The Successful Bidder shall further be responsible for making all necessary arrangements for loading, unloading and other handling right from his works up to the site

12.0 DRAWINGS & DOCUMENTS

12.1 Drawing Approval

12.1.1 All drawings submitted by the Successful bidder 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 mentioned in the specifications.

12.1.2 Each drawing submitted by the successful bidder shall have Title Block approved by the Purchaser (shall be provided to successful bidder) indicating the name of the Employer, Purchaser, name of the project, title, Drawing No. etc. If standard catalogue pages are submitted the applicable items shall be indicated therein. All titles, noting, markings and writings on the drawing shall be in English. All the dimensions should be in metric units.

12.1.3 Drawings shall be submitted for approval in AutoCAD format in CD's along with six copies of hard copies.

12.1.4 Copies of drawings returned to the Successful bidder will be in the form of a print /softcopy with the Employer's marking, or a print made from a CD's for computer base.

12.1.5 The drawings submitted by the Successful bidder shall be reviewed by the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative and shall be modified by the Successful bidder if any modifications and / or corrections are required by the HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative. The Successful bidder shall incorporate such modifications and/or corrections and submit the final drawings for approval. Any delay arising out of failure by the Successful bidder to rectify the drawings in good time shall not alter the contract completion date.

12.1.6 ***Approval by the Nodal Officer or his nominee*:** The successful bidder shall submit specifications and drawings to HEC's/NCL's/Consultant's Engineer in charge or his nominee who is to approve them if they comply with the specifications and drawings. The Successful bidder shall be responsible for the Design & Performance of items/equipment.

12.1.7 The HEC's/NCL's/Consultant's Engineer and/or his duly authorised representative's approval shall not alter the Successful bidder's responsibilities for the Design & Performance of items/equipment.

12.1.8 All the drawings shall be prepared in accordance with the provisions of latest standards. All drawings shall comply with current Indian Standard specifications and shall be sufficiently detailed with dimensions and shall be clear and legible.

12.1.9 If the drawing is “Approved” then one set shall be returned back to the successful Successful bidder duly stamped “Approved”.

If the drawing is “Not Approved” or “Approved as Noted” then one stamped print or softcopy with Appropriate Comments shall be returned back to the Successful bidder for incorporation of comments and resubmission of revised drawings for Approval

12.1.10 After completion of the works the Successful bidder shall replace old drawings by As built drawing after incorporating all corrections from the site under the direction of the HEC’s/NCL’s/Consultant’s Engineer and/or his duly authorised representative.

12.1.11 Further work by the Successful bidder shall be in strict accordance with these drawings and no deviation shall be permitted without the written approval of the HEC’s/NCL’s/Consultant’s Engineer and/or his duly authorised representative, if so required.

12.1.12 All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawings shall be at the Successful bidder’s risk. The Successful bidder may make any changes in the design which are necessary to make the equipment conform, to the provisions and intent of the contract and such changes will again be subject to approval by the HEC’s/NCL’s/Consultant’s Engineer In charge and/or his duly authorised representative. Approval of Successful bidder’s drawings or work by the HEC’s/NCL’s/ Consultant’s Engineer In charge and/or his duly authorised representative shall not relieve the Successful bidder of any of his responsibilities and liabilities under the contract.

12.1.13 Drawings shall include all installation and detailed piping drawings wherever applicable. All piping 100 mm 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.

12.1.14 All Electrical drawing shall include electrical schematic diagram, Equipment & cable layout, Inter connection diagram, cable schedule, Detail bill of material, GA Drawing with BOM and circuit diagram of control panel/VFD panel, cable, VFD & motor selection calculation.

12.2 OPERATING AND MAINTENANCE MANUALS:

"As built" drawings and/ or operating and Maintenance manuals required shall be supplied by the Successful bidder by the dates stated in the contract data. If the Successful bidder does not supply the drawings and / or manuals by the dates stated in the contract data, or they do not receive the Nodal Officer or his Nominee's approval, the Nodal Officer or his Nominee shall withhold the amount stated in the contract data from payments due to the Successful bidder.

12.3 INSTRUCTION MANUALS

12.3.1 The Successful bidder shall submit to the HEC's/NCL's/Consultant's Engineer In charge and/or his duly authorised representative, preliminary instruction manuals for all the equipment, covered under the contract within the time agreed upon between the Purchaser & the Successful bidder. The final instruction manuals complete in all respects shall be submitted by the Successful bidder 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 and maintenance procedures of the equipment. These instruction manuals shall be submitted in the form of two (2) reproducible original and five (5) copies.

12.3.2 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 two (2) reproducible original and five(5) copies shall be submitted by the Successful bidder to the Purchaser.

12.3.3 The Successful bidder shall furnish to the Employer, ten (10) sets of spare parts catalogue.

12.3.4 In addition, the Successful bidder shall supply three (3) sets of all the documents, specifications and as built drawings in CDs. The documents supplied shall be in easily readable, search & printable format.

12.3.5 The Successful bidder has to carry out the work in such a manner that it does not effect the operation of the Plant/Shop. If other Successful bidders are also engaged in the same work site for other jobs, the Successful bidder will work with them in a co-ordination manner.

12.4 LIST OF DRAWINGS /DATA TO BE SUBMITTED ALONG WITH TENDER

a) General arrangement drawing along with load data/

b) Details of bought-out items & component list.

c) List of commissioning spares proposed by the Tenderer.

d) List of recommended 5 years O & M spares of the equipment.

e) Duly filled up questionnaire as per Annexure-2 .

12.5 DRAWINGS & DOCUMENTS TO BE SUBMITTED BY SUCCESSFUL BIDDER

The following Information/documents shall be furnished by the manufacturer/successful bidder :

a) General arrangement drawings of the equipment including Drive and auxiliaries, providing major dimensions, Battery limits of the scope, parts/component list, foundation plan with load data (static & dynamic)

b) Furnishing of detail design calculations in support of different design and equipment parameters.

c) All backup calculation for capacity, motor KW & frame size , VFD rating, of Apron feeder.

d) Power & Control circuit diagram with terminal details, connected electrical load,30 min maximum demand GA drawing of Panel, with Bill of material.

e) Specification/ data sheet of the equipment/ Components including drives, auxiliaries, lubrication system & lubricants etc. and Control system.

f) Quality Assurance plan and inspection /Test procedures.

g) Inspection /Test certificates and Guarantee Certificate for the main equipment, Component and raw material as applicable – During inspection

h) Furnishing of erection,operational, maintenance and spare parts manual supported by the illustrative pamphlet and literature of manufacturers.

i) Overall dimension and weight of bigger and heaviest component.

j) Make and model of equipment/parts/components.

k) Catalogues/leaflets for all equipment including bought out items. Details of bought out items with makes shall be given separately.

12.5 DESIGN CO-ORDINATION

The Successful Bidder shall be responsible for the selection and design of appropriate equipment to provide the best coordinated performance of the entire system. The basic design requirements are detailed out in Technical Specifications. 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 close to the operating range of the unit.

12.6 DESIGN CO-ORDINATION MEETING:

The Successful Bidder will be called upon to attend design co-ordination meetings with the engineer and the consultants of the owner during the period of contract. The Successful Bidder shall attend such meetings at his own cost at or at mutually agreed venue as and when required and fully co-operate with such persons and agencies involved during those discussions.

13.0 TRAINING OF OWNER'S PERSONNEL

The Successful Bidder shall undertake to train free of cost, engineering personnel selected and sent by the owner at the works of the Successful Bidder unless otherwise specified in the technical specifications. The period and the nature of training for the individual personnel shall be agreed upon mutually between the Successful Bidder and the owner. These engineering personnel shall be given special training in the shops, where the equipment will be manufactured and/or their collaborator's works and where possible, in any other plant where equipment manufactured by the Successful Bidder or his collaborator is under installation or test, to enable those personnel to become familiar with the equipment being furnished by the Successful Bidder.

All traveling and living expenses for the engineering personnel to be trained during the total period of training will be borne by the owner. These engineering personnel while undergoing training shall be responsible to the Successful Bidder for discipline.

In the event of the owner, for any reason, failing to avail of the training facilities, he shall not be entitled for any rebate whatsoever on this account.

ANNEXURE-1

ELECTRICAL SPECIFICATION

ANNEXURE- 1

ELECTRICAL SPECIFICATION FOR SEMI MOBILE CRUSHING UNIT WITH APRON FEEDER AND SECONDARY SIZER

1.0 *GENERAL DESCRIPTION*

This specification covers requirement of Electrics for One Set of Semi Mobile Crushing Unit with Apron Feeder and One No. Secondary Sizer of nominal capacity 1600 TPH.

The Semi Mobile Crushing Unit with Apron Feeder and Secondary Sizer shall be complete with the following, however any equipment/item/component not mentioned hereunder or elsewhere in this specification but necessary for the completeness of the system shall be deemed to be in the scope of the tenderer.

a) LT MCC dedicated for Tenderer's Load
b) Local Control Station/Local Push Button Station.
c) Power and Control Junction Boxes.
d) All internal cables including Power and Control Cables.
e) E-Cabin / Operator's Cabin and the required control panels.
f) Mounted electrics like Zero Speed Switch (ZSS), Pull Cord Switch (PCS), etc. for Apron Feeder and other instrumentation Equipment.
g) HT & LT Motor for offered equipment.
h) Starter Panel with VVVF Drive for Apron Feeder
i) Any other Electricals & Instrumentation works (including power / control / instrumentation cables, wirings, control JBs, etc.
j) Complete control and automation work.
k) Interfacing with Plant PLC System
l) Illumination system for integrated semi mobile crushing unit.

1.1 *SEMI MOBILE CRUSHING UNIT WITH APRON FEEDER*

1) Purchaser shall provide only One (1) No. of Power Supply Feeder of 6.6 kV ± 10%, 50 Hz ± 3% from their HT Switchboard at Substation-B up to the terminal Box of Tenderer's HT Motor for Semi Mobile Crushing Unit.

2) Purchaser will also provide Two (2) Nos. of Power Supply Feeder of 415 V ± 10%, 50 Hz ± 3% from their MCC at Substation-B up-to the incomer side of Tenderer's LTMCC (Dedicated for Tenderer's Load) located inside the E-Cabin / Operator's Cabin for Apron Feeder and Auxiliary Loads.

3) Thereafter all the electrics / equipment including Motor, Pump, MCC, Power / Control JB, Power / Control Cables, LCS / Starter Control Panel, E-Cabin / Operator's Cabin including any other Panels, Mounted Electrics such as PCS, ZSS, etc. shall be in the scope of the tenderer.

4) If any other voltage level is required, the same has to be derived by the tenderer using control transformer of appropriate voltage ratio and VA Rating as required by their system.

5) E-Cabin / Operator's Cabin may be Air-Conditioned as per the requirement of the system. The same may be decided by the tenderer and clearly indicated in their offer.

6) Power, Control Cable and Special Cable from offered MCC Panel to respective offered equipment shall be in the scope of the tenderer.

7) Power, Control Cable and Special Cable from Substation to offered MCC Panel shall be in the scope of the Purchaser.
8) The tenderer having additional feeder in Offered MCC panel at E-Cabin Room i.e.
   1) 200A Power Supply Feeder Rock Breaker
   2) 100A Power Supply Feeder for others.
9) Illumination system for integrated semi mobile crushing unit.

1.2 ***SECONDARY SIZER***

1) Purchaser shall provide only Two (2) Nos. of Power Supply Feeder of 6.6 kV ± 10%, 50 Hz ± 3% from their HT Switchboard at Substation-B up to the terminal Box of Tenderer's HT Motor for Secondary Sizer.

2) Purchaser shall provide only One (1) No. of Power Supply Feeder of 415 V ± 10%, 50 Hz ± 3% from their MCC at Substation-B up-to the incomer side of Tenderer's Local Control Panel for Auxiliary Loads.

3) Thereafter all the electrics / equipment including Motor, Pump, MCC, Power / Control JB, Power / Control Cables, LCS / Starter Control Panel including any other Panels, Mounted Electrics such as ZSS, etc. shall be in the scope of the tenderer.

4) If any other voltage level is required, the same has to be derived by the tenderer using control transformer of appropriate voltage ratio and VA Rating as required by their system.

Notes:
- ⇨ The firm has to clearly indicate the power supply requirement in their offer as per their system design.
- ⇨ The firm has to furnish the KW rating of Primary, Secondary Sizer, Apron Feeder and other offered equipments.
- ⇨ Inside E-Cabin Lighting are in the scope of tenderer.

1.3 EXCLUSION

1. HT Switchboard
2. HT Power Cable from Purchaser's HT Switchboard at Substation-B up-to the Terminal Box of Tenderer's Motor for Semi Mobile Crushing Unit.
3. LT Cable from Purchaser's MCC at Substation-B up-to the incomer side of Tenderer's LTMCC located inside E-Cabin / Operator's Cabin.
4. HT Cable from Purchasers HT Switchboard at Substation-B up-to the Terminal Box of Tenderer's Motor for Secondary Sizer.
5. LT Cable from Purchaser's MCC at Substation-B up-to the incomer side of Tenderer's Local Control Panel of Secondary Sizer.
6. Power, Control / Signal Cable from Substation to the LTMCC Panel.
7. Any type of modification in existing system.
8. Reception at site, unloading & storage.
9. Any kind of Civil work for equipment including grading, leveling, survey, soil investigation, design, engineering and construction of foundations and any buildings, etc.
10. Any statutory approvals.

1.4 Tenderer shall keep provision of individual annunciation for the following features:

1. A.C. control supply failure
2. D.C. control supply failure
3. Primary Crusher hydraulic pressure high

4. Primary Crusher lub. System fault
5. Primary Crusher lub. Oil Tank level low
6. Primary Crusher control temperature high
7. Primary Crusher system fault
8. Primary Crusher Sizer tripped
9. Primary Crusher box level high
10. Secondary Sizer hydraulic pressure high
11. Secondary Sizer lub. System fault
12. Secondary Sizer lub. Oil Tank level low
13. Secondary Sizer control temperature high
14. Secondary Sizer system fault
15. Secondary Sizer tripped

1.5 The equipment should be able to trip on occurrence of any of the following fault / conditions:

1) Single phasing of the power supply
2) Motor winding and bearing overheating for HT & high capacity LT motors.
3) Bearing temperature of mechanical equipment like gearbox, HT drives, etc.
4) Motor overload.
5) Any other fault if found necessary during detailed engineering stage by the purchaser.
6) Bearing and winding temperature high of HT motors of critical equipment like crusher, sizer, apron feeder, belt conveyor and fire fighting pumps.

1.6 The Local Station shall have the following facilities:

1. Start – Stop push button
2. Selector switch (Remote - Local)
3. Emergency stop switch
4. Indication lamp (Yellow)

2.0 ***SCOPE MATRIX***

Sl. No.	Description	Vendor's Scope	HEC's Scope
	Electricals and Instrumentation		
1	415 V Motor Control Centre (MCC – Dedicated for SMCP Load) located inside E- Cabin	Yes	No
2	HT Switchboard at Substation-B	No	Yes
3	Motors for Sizers, Apron Feeder and Spillage Conveyor	Yes	No
4	VVVF Drive for Apron feeder	Yes	No
5	Control Desk with HMI located in E-Cabin/Operator's Cabin	Yes	No
6	UPS System, Non-Redundant type (1x100%) Back-up for 30 min	Yes	No
7(A)	HT Cable from Purchaser's HT Switchboard up to the Terminal Box of HT Motor	No	Yes
7(B)	LT Power Cable from Purchaser's MCC up to the LVMCC (dedicated for tenderer's load) located inside the E-Cabin/ Operator's Cabin	No	Yes
7(C)	LT Power Cable from Purchaser's MCC up to the incomer side of Tenderer's Local Control Panel of Secondary Sizer	No	Yes
7(D)	Control/Signal Cable from Substation to the respective equipment	No	Yes

7(E)	All internal cable including power/control cable or any other cable required thereafter for the Tenderer's system	Yes	No
8	Field Device/Safety Switch, Local Push Button Station, Power & Control Junction Box, Emergency Stop Push Button, Level detector.	Yes	No
9	Earthing System		
	a)Prep. Of Outside Earth Pit and interconnection with GI Flat	No	Yes
	b)Offered panel earthing and interconnection with outside earth pit	Yes	No
10	Illumination System on SMCP (LED Type), Lighting Fixtures, Lighting JB, Lighting Cable etc. for Semi Mobile Crushing Unit	Yes	No
11	Illumination System on SMCP (LED Type), Lighting Fixtures, Lighting JB, Lighting Cable in E-Cabin	Yes	No
12	Electrically operated Siren suitable for 415 V supply, Double Mounting, Industrial Heavy Duty type	No	Yes

3.0 ***SERVICE CONDITIONS***

- Ambient air temperature : 4^0C to 50^0C
- Altitude : Maximum up to 1000 M above MSL
- Relative Humidity : 100%
- Pollution degree : Degree 4 as per IS : 13947 (Part I)
  (i.e. the pollution generates persistent conductivity caused by conductive dust)

4.0 ***OPERATING CONDITIONS***

- Nominal system Voltage : 415 V $\pm$ 10%
  6.6 kV $\pm$ 10%
- Supply Frequency : 50 Hz $\pm$ 3% for 415 V and 6.6 kV System
- Highest Fault Level : 31 MVA at 415 V and 250 MVA at 6.6 kV
- System Earthing : Solidly Earthed for 415 V
  Restricted Earthed for 6.6 kV

5.0 ***ELECTRICS FOR SIZER***

i) DRIVE AND CONTROL

The Sizer shall be driven by an AC induction motor of suitable rating which provides high starting torque for above mentioned duty conditions. Drive shall be direct type or with reduction unit of suitable type of gearbox and controlled torque coupling. Necessary protective devices will be incorporated in the system to protect the motor from severe surge load resulting from large piece of tramp iron in the crushing chamber.

The hydraulic lubrication and electro-mechanical controls, which forms inherent part of the Sizer and its auxiliaries will be in the scope of supply and will be properly designed to achieve the desired signaling and protective requirements. The power supply to the main motor and auxiliary motors will be fed from the CHP motor control centers. The sequence control and inter-lock of all auxiliary motors and other protective devices of the Sizer will also form part of the scope of supply and included in the offer.

Suitable protective devices shall be provided for mechanical overload. Suitable speed monitor shall also be provided to prevent damage in the event of jamming and inter locking in case speed falls below the pre-determined speed. Scroll back facility for tramp iron removal shall be provided.

ii) MOTOR

The Sizer motor shall be suitable for 6.6 kV, 3 phase 50 Hz supply system with +/- 10% voltage variation, complete with cables boxes with glands. Other LT motors will be suitable for 415V, 3phase, and 50Hz supply system with +/- 10% voltage variation, complete with cables boxes with glands. The Motor shall have high power factor say 0.9 lagging approx. at 75% to 100% full load and shall have low weight/ kW ratio.

iii) STARTER AND CONTROL PANEL

This shall be adequately rated for the operation of the Sizer. The control panel shall have the following features and confirm to relevant IS specifications.

a) Off-load isolator
b) Circuit breaker with under voltage release and electrical/ mechanical inter lock
c) Interlock with the door for the isolator
d) Protections
    i) Motor control centre
    ii) Motor protection relay with over load, earth fault, single phase stall protection and unbalance condition, solid state
e) Cable entry box for incoming and outgoing entry
f) Enclosure shall be suitable for outdoor duty dust / vermin proof and top canopy as per IS: 55.
g) Space heater shall be provided for motor rating 30 kW and above.

Suitable lifting devices will be provided for ease in installation, dismantling and taking out components of secondary sizer for maintenance. The components/parts will also be provided with lifting lugs.

The equipment shall be complete with all the mounted Electrics like Zero Speed Switch (ZSS), etc and other instrumentation Equipment for the successful operation of the machine. The supplier has to furnish complete technical details of all the mounted electrics for Sizer. The supplier will indicate the feeder type, rating etc for running the equipment.

6.0 ***SPECIFICATION FOR INDUCTION MOTORS CONTINUOUS RATING AND DUTY TYPE VOLTAGES 415 V & 6.6 kV***

A) ELECTRICAL

a) The motors shall be of continuous duty (S1) and rating type in accordance with relevant code.
b) The motor shall be designed to deliver rated output with the terminal voltage differing from its rated value by not more than + 10%, frequency differing from its rated value by not more than + 3% and any combination of these limited to 10%.
c) The motors shall be capable of withstanding the forces associated with the maximum in rush current, the locked rotor torque and the pull out torque at the highest system voltage and at the upper limit of supply frequency during starting.
d) The motors shall be capable of starting and accelerating to the rated speed along-with the fully loaded driven equipment without exceeding the acceptable winding temperature even when the supply voltage is 80% of rated voltage.
e) The motors shall be suitable for two cold starts in succession under the normal loading condition.
f) The motors shall withstand for 15 seconds without stalling or abrupt change in speed under gradual increase of torque up to 1.6 times its rated value, the voltage and frequency being maintained at their rated value.

g) The accelerating torque at any speed with the lowest starting voltages shall be at least 10% of rated full load torque.

B) MECHANICAL

a) The method of cooling for LT/HT motors shall depend upon the system requirement.
b) The enclosures for motor shall have IP52 protection for indoor application and IP55 protection for outdoor applications in accordance with IS: 4961.
c) The motor vibration shall confirm to the requirements in accordance with relevant code.
d) The motor noise level shall confirm to the requirements in accordance with relevant code.

C) CONSTRUCTIONAL DETAILS

i) General

a) The motor and its components such as stator, rotor end shield, terminal boxes and the bearings shall be designed to be readily inter-changeable as integral units for the same design and rating.
b) All non-metallic components used shall be resistant to flame propagation.
c) All heavy parts of the motors shall be provided with necessary lifting arrangements.

ii) Stator Frames and Shields

a) The stator frames and end shields shall be rugged and made of cast iron conforming to relevant code.

b) The frame holding the stator core and windings must be strong and rigid to withstand short circuit force and unbalanced magnetic pull and minimise vibrations.

iii) Cooling Arrangements

HT and LT Squirrel cage motors shall be Totally Enclosed, Fan Cooled, (TEFC) by a light weight cast Aluminium fan of bi-directional design and very low inertia. The fan shall be keyed to the shaft. Slip-ring type motors, if provided for Roll Crusher/Gyratory Crusher/Secondary Sizer shall be with CACA cooling.

iv) Enclosures

The enclosure shall be totally enclosed fan cooled with suitable means for breathing and drainage. The drain hole diameter shall not exceed 6 mm.

v) Stator

a) The stator core shall be built up of low loss high permeability steel laminations.
b) The winding shall be two layer type consisting of synthetic enameled copper conductors in Semi closed slots.
c) Insulation shall be class-B for 415V motors and class -F for HT motors.
d) All winding overhangs and leads shall be adequately supported braced and blocked.

vi) Rotor

a) The rotor core shall be of similar construction to that of the stator
b) The cage bars for cage motors shall be of copper.
c) The complete rotor shall be dynamically balanced with the fan on the shaft for TEFC motors ensuring vibration free smooth running.

vii) Shaft

The shaft shall be manufactured from high grade steel, preferably C-40. The sustained deflection of the shaft shall well below 10% of the air gap.

viii) Bearings

a) The bearings shall be ball / roller type for 415 V motors and roller / pedestal type for HT motors.
b) The bearings shall be self lubricated.
c) The bearings shall be in accordance with the relevant codes.
d) 415 V motors shall be grease lubricated. 3.3kV / 6.6 kV motors shall be oil lubricated.

ix) Terminal Box

a) Terminal boxes integral with the stator frame shall be provided with terminals for stator leads.
b) Terminals shall be suitable for receiving single layer armoured Aluminium conductor PVC/XLPE insulated cables.
c) Terminal boxes shall be suitable for top entry of cables.

x) Earthing Terminals

Two independent earthing terminals shall be provided in accordance with I.E Rules on diagonally opposite corners of the motor for bolted connection.

xi) Mounting

The motors for Roll Crusher, Gyratory Crusher, Secondary Sizer, pumps, compressors, fans, and blowers shall have the mounting B3 and the motors for conveyors shall have the mounting B5 in accordance with DIN 42950 or as specified elsewhere in this tender.

xii) Auxiliary Devices

The motor shall be suitable for the auxiliary devices mentioned below:

Type of load	Auxiliary devices on the shaft
Compressor and fans	Pulleys
Conveyors, feeders and Screens	Gears/Fluid coupling
HT motors	Embedded Resistance Temperature Detectors (RTD) 6 nos. for windings with additional 2 nos. for bearings for HT motors
Space Heaters	Space Heaters suitable for 230 V, 50 Hz, single phase supply system shall be provided for motors, wherever applicable.

xiii) Performance

The values of minimum full load speed, maximum full load current, minimum pull out torque and minimum locked motor torque as percentage of full load torque at rated voltage and frequency for duty type S1 shall be in accordance with relevant code.

xiv) Rating Plate

A rating plate stating the following information shall be supplied with each motor:

a) Reference standard
b) Name of manufacturer
c) Manufacturer's number and frame reference
d) Type of duty
e) Class of insulation
f) Frequency in Hz
g) Number of phases
h) Rated output in kW
i) Rated voltage and winding connections
j) Current, approximate in amperes at rated output
k) Speeds in revolutions per minute, at rated output
l) Rotor (Secondary) voltage and winding connections
m) Rotor (Secondary) current in amperes at rated output
n) Ambient temperature
o) Enclosure Type

xv) Multipoint Digital Temperature Scanner

The digital temperature scanner of required number of channels for monitoring bearing and winding temperature of 6.6 kV motors shall be provided in respective control consoles. For each motor eight points are to be monitored, 2 for bearing and 6 for winding. For all the points RTD probes shall be provided in the bearings and the windings of the motors. The scanners shall also have required battery back-up.

Specific Features:

The scanners shall have two alarm levels per channel which shall be assigned as “High” and “Extra High”. When the motor (bearing or winding) achieves high temperature the audio-visual alarm shall be switched on at respective control console, but if the temperature rises further and reaches extra high level, the motor shall trip automatically with an audio-visual signal, thereby stopping all the equipment/drives which are ahead in sequence. The scanner shall also have the facility of monitoring any channel without stopping the scanning and automatic increment of channel display at every 4 seconds for manual data logging.

The tenderer shall bring out the salient features of the scanner to be offered explaining its working. The bidder shall also enclose manufacturer’s catalogue/technical leaflets in support.

xvi) All motors shall be provided with eye bolts, lugs or other means to facilitate lifting.

xvii) The design, manufacture, installation and performance testing shall conform to the latest revisions of the Indian Standards or their equivalent IEC standards for the applicable motor type and rating, and to the latest Indian Electricity Acts, Indian Electricity Rules and IS: 325.

xviii) Motor rating above 110 kW shall be treated as HT Motor.

7.0 *SPECIFICATION FOR 415 VOLT MOTOR CONTROL CENTRES*

7.1 *CONSTRUCTIONAL DETAILS OF MCC*

a. Motor Control Centres (MCCs) shall be of metal enclosed, indoor, floor- mounted, single front, free-standing type. Each panel shall comprise one or more of the modules.
b. MCC frames and load bearing members shall be fabricated using suitable mild steel structural sections or pressed and shaped cold-rolled sheet steel of thickness not less than 2.0 mm. Frames shall be enclosed in cold-rolled sheet steel of thickness not less than 1.6 mm. Doors and covers shall also be of cold rolled sheet steel of thickness not less than 1.6 mm. Stiffeners shall be provided wherever necessary. The gland plate thickness shall be 3.0 mm (minimum) for hot/cold rolled sheet steel and 4.0 mm (minimum) for non-magnetic material.
c. All panel edges and cover/door edges shall be reinforced against distortion by rolling, bending or by the addition of welded reinforcement members. The top covers of the panels should be designed such that they do not permanently bulge/bend by the weight of maintenance personnel working on it.
d. The complete structures shall be rigid, self-supporting, free from flaws, twists and bends. All cutouts shall be true in shape and devoid of sharp edges.
e. All switchboards shall be of dust-proof and vermin-proof construction and shall be provided with a degree of protection of IP 52 as per IS:2147. However, the bus-bars chambers having a degree of protection of IP 42 are also acceptable where continuous bus-bars rating is 1600 A and above. Provision shall be made in all compartments for providing IP 52 degree of protection, when circuit- breaker or module trolley has been removed. All cutouts shall be provided with synthetic rubber gaskets. The switchboards which are meant for outdoor duty shall be provided with degree of protection of IP 54 as per IS:2147.
f. Provision of louvers on switchboards would not be preferred. However, louvers backed with metal screen are acceptable on the bus-bars chambers where continuous bus-bars rating is 1600 A and above.
g. The switchboard shall be of uniform height.
h. Switchboard shall be extendable on both sides by the addition of vertical sections after removing the end covers.
i. Switchboard shall be supplied with base frames made of structural steel sections along-with all necessary mounting hardware.
j. All switchboard shall be divided into distinct vertical sections (panels), each comprising of the following compartments.

7.1.1 **Bus-bars Compartment**

A completely enclosed bus bar compartment shall be provided for the horizontal and vertical bus-bars. Bolted covers shall be provided for access to horizontal and vertical bus-bars and all joints for repair and maintenance which shall be feasible without disturbing any feeder compartment. Auxiliary and power bus-bars shall be in separate compartments.

7.1.2 **Switchgear/feeder Compartment**

All equipment associated with incomer or outgoing feeder shall be housed in a separate compartment of the vertical section. The compartment shall be sheet steel enclosed on all sides with the withdraw-able units in position or removed. Insulating sheet at rear of the compartment is also acceptable. The front of the compartment shall be provided with the hinged single leaf door with captive screws for positive closure.

7.1.3 **Cable Compartment or Cable Alley**

A full-height vertical cable alley of required width shall be provided for power and control cables. Cable terminations located in cable alley shall be suitably shrouded to prevent accidental contact by falling of tools etc. For distribution boards, the partition between the feeder compartment and cable alley made of FRP sheet shall be provided. Cable alley door shall be hinged.

7.1.4 **Control Compartment**

A separate compartment shall be provided for relays and other control devices associated with a circuit breaker.

a) Sheet steel barriers shall be provided between two adjacent vertical panels running to the full height of the switchboard, except for the horizontal bus-bars compartment.

b) After isolation of power and control circuit connections it shall be possible to safely carryout maintenance in a compartment with the bus-bars and adjacent circuit live. Necessary shrouding arrangement shall be provided for this purpose. Wherever two breaker compartments are provided in the same vertical section, insulating barriers and shrouds shall be provided in the rear cable compartment to avoid accidental touch with the live parts of one circuit when working on the other circuit.

c) 415 V MCCs and ACDBs shall be of single-front construction. All single- front switchboards shall be provided with single-leaf, hinged or bolted covers at the rear. The switchboard shall be provided with "DANGER" labels.

d) All 415 V circuit breaker modules shall be of draw-out type having distinct 'Service' and 'Test' positions. For modules of size more than half the panel height, double guides shall be provided for smooth removal or insertion of module.

e) Each switchboard shall be provided with undrilled, removable type gland plate which shall cover the entire cable alley. Sufficient cable glanding space shall be provided. The gland plate shall preferably be provided in two distinct parts for the ease of terminating additional cables in future. The gland plate shall be provided with gasket to ensure enclosure protection.

7.1.5 **Clearances**

The clearance and dimensions of all electrical component inside the module/ switchboard shall be as per relevant IS. All connections from the bus-bars up-to switch/fuses shall be fully shrouded/insulated and securely bolted to minimize the risk of phase to phase and phase to earth short circuits.

7.2 ***POWER BUS-BARS AND INSULATORS***

a. All 415 V Switchboards, MCCs and ACDBs shall be provided with three phase and neutral bus-bars.

b. All bus-bars and jumper connections shall be of high conductivity aluminium alloy/copper of adequate size.

c. The cross-section of the bus-bars shall be uniform throughout the length of switchboard and shall be adequately supported and braced to withstand the stresses due to the specified short circuit currents. Neutral bus-bars short circuit strength shall be same as main bus-bars.

d. All bus-bars shall be adequately supported by suitable non-hygroscopic insulators. Separate supports shall be provided, for each phase and neutral bus-bars. The bus-bars insulators shall be supported on the main structure.

e. The overlap of the bus-bars at each joint surface shall be such that the length of overlap shall be equal to or greater than the width of the bus-bars. All copper to aluminium joints shall be provided with suitable bi-metallic washers.

f. All bus-bars shall be color coded as per IS : 375.

g. The neutral bus in MCC shall be connected to earth bus at two points by separate vertical droppers which shall be insulated from MCC enclosure. The neutral bus shall not be earthed in all the other boards in which incomers are not from transformers.

7.3 *AUXILIARY BUS-BARS AND CONTROL TRANSFORMERS*

7.3.1 Control Transformers and AC Control Supply Bus bar

Each bus-section of all Switchgears and MCCs shall be provided with one (1) no. 415 V/110V control transformer dry type, of insulation class B or better. The 110 V AC control supply from the control transformers shall be run through the MCC by means of two sets of control supply bus-bars of electrolytic copper. The control supply to different modules shall be tapped individually from the control supply bus-bars. One pole of secondary winding of control transformers shall be solidly grounded through a test link. The transformer body shall be earthed at two points.

7.3.2 DC Control Supply

415 V/220V control transformer with converter unit shall be provided for PLC based control system in each section of the MCC and shall be coupled through Bus coupler arrangement.

7.4 *EARTH BUS AND EARTHING*

a) A galvanized steel earth bus shall be provided at the bottom of each panel and shall extend throughout the length of each switchboard. It shall be welded/bolted to the framework of each panel and breaker earthing contact bar. Vertical earth bus shall be provided in each vertical section which shall in turn be bolted/welded to main horizontal earth bus.

b) The earth bus shall have sufficient cross section to carry the momentary short circuit and short time fault current to earth, without exceeding the allowable temperature rise.

c) Suitable arrangements shall be provided at each end of the horizontal earth bus for bolting to earthing conductors. The horizontal earth bus shall project out of the switchboard ends and shall have predrilled holes for this connection. All joint splices to earth bus shall be made through at-least two bolts and taps by proper lug and bolts connection.

d) All non-current carrying metal work of the switchboard shall be effectively bonded to the earth bus. Electrical conductivity of the whole switchgear enclosure framework and truck shall be maintained even after painting.

e) All metallic cases of relays, instruments and other panel-mounted equipments shall be connected to earth by independent stranded copper wire of size not less than 2.5 sq. mm. All the equipment mounted on the door shall be earthed through flexible wire/braids. Insulation color code of earthing wires shall be green. Earthing wires shall be connected to terminals with suitable clamp connectors, soldering is not acceptable. Looping of earth connections which would result in loss of earth connections to other devices, when a device is removed, is not acceptable.

f) VT and CT secondary neutral point earthing shall be at one place only, i.e., on the terminal block. Such earthing shall be made through links so that earthing of one secondary circuit shall be removed without disturbing the earthing of other circuit.

g) All hinged doors having potential carrying equipment mounted on it shall be earthed by flexible wire/braid. For doors not having potential carrying equipment mounted on it, earth continuity through scraping hinges/hinge pins of proven design may also be acceptable. The Bidder shall establish earth continuity at site also.

8.0 ***SPECIFICATION FOR 1.1 KV GRADE POWER CABLE, CONTROL CABLE, SCREENED/SPECIAL CABLE AND TRAILING CABLE***

Specification for 1.1 kV grade power cable, control cable, screened/special cable and trailing cable shall be as per attached Annexure-A.

9.0 ***SPECIFICATION FOR POWER DISTRIBUTION BOARD, LOCAL CONTROL STATION, MOTOR CONTROL CENTRE AND MAJOR COMPONENTS***

Specification for power distribution board, local control station, motor control centre and major components shall be as per attached Annexure-B.

Notes:

1. All the Electrics envisaged in the scheme for the control of the equipment shall be in the scope of the tenderer.
2. Equipment Supply shall be complete in all respect. Any item/component not mentioned in this specification but necessary for the completeness of the system shall be deemed to be in the scope of the tenderer.

ANNEXURE-2

TECHNICAL DATA SHEET –TO BE FILLED IN BY BIDDERS AND SUBMITTED ALONG WITH OFFER

ANNEXURE-2

TECHNICAL DATA SHEET FOR FEED HOPPER

Sl.No.	Parameter	Description
1.	Nos. offered	01
2.	Hopper Capacity	170T
3.	Material	To be furnished by bidder
4.	Liner	To be furnished by bidder
5.	Feeding arrangement, Hopper design	To be furnished by bidder

TECHNICAL DATA SHEET FOR HEAVY DUTY APRON FEEDER

SL NO	DESCRIPTION	SPECIFICATIONS
1.	Type / model of Apron Feeder	To be furnished by Bidder
2.	Size of Apron Feeder	To be furnished by Bidder
3.	Number Offered	01
4.	Make	To be furnished by bidder
5.	**Capacity** Peak Nominal Lower limit	 1920 TPH 1600 TPH 50% of nominal capacity
6.	Feed Size (mm)	To be furnished by bidder
7.	Conveyor inclination (degree)	To be furnished by bidder
8.	Nominal conveying speed (m/min)	To be furnished by bidder
9.	Type of Chain	To be furnished by bidder
10.	Chain arrangement	To be furnished by bidder
11.	Material of sprockets	To be furnished by bidder
12.	Sprocket shaft bearing	To be furnished by bidder
13.	Type of drive	To be furnished by bidder

14.	Main motor Rating (KW) and rpm	To be furnished by bidder
15.	Weight of Apron feeder without drive unit	To be furnished by bidder
16.	Weight of Apron feeder with drive unit	To be furnished by bidder
17.	Type, make and size of Bearings used	To be furnished by bidder
18.	Material offered for: • Main Frame • Side board • Pans (Apron) • Conveyor Chains • Impact Rollers • Carner Rollers • Sprocket • Shafts • Ultimate Tensile Strength in Kg/mm2, % elongation and Brinell Hardness No.	To be furnished by bidder
19.	Lubrication Arrangement envisaged for: • Roller Bearings • Chain • Pin etc.	To be furnished by bidder
20.	Provision for Wear resistant replaceable liners pans etc	To be furnished by bidder
21.	Whether spillage-collecting conveyor required?	To be furnished by bidder
22.	Details of the variable speed drive arrangement	Speed variation with VVVF
23.	Details of • Drive motor • Reducers • Coupling • VFD	To be furnished by bidder
24.	Drawings • General arrangement dimensioned drawing of Apron feeder with Motor	

	• Foundation arrangement drawing with anchor bolt positions and load for feeder with motor • Drive arrangement details • Feeding and discharge chutes details • Maker's descriptive pamphlets • Detailed equipment specification with constructional features	To be furnished by bidder

.

TECHNICAL DATA SHEET FOR PRIMARY SIZER

Sl. No.	Description	Specification/ Remarks
1	Type/ Model	To be furnished by Bidder
2	**Capacity** Peak crushing capacity Nominal crushing capacity	 1920 TPH 1600 TPH
3	Quantity required	1 (One)
4	Over all dimension (Length X Width X Height)	To be furnished by Bidder
5	Material	ROM Coal
6.	Feed Size	Upto1500 mm X 1000mm X1000mm in general
7.	Product Size	(-) 300 mm nominal. Oversize if any should not be more than 400 mm in any direction
8.	Min.guaranteed tip wear life (T of coal crushed)	To be furnished by Bidder
9	Fines generation (%)	To be furnished by Bidder
10.	Shaft Configuration No. of teeth/segment Roll Length	

	Roll Speed Bearing Type/ Make Lubrication System	To be furnished by Bidder
11.	**Gear Box** Type Output Torque Maximum Peak overload torque Transmission Ratio Number of Stages Lubrication Type Approximate mass Bearing Type/Make	To be furnished by Bidder
12.	**Motor** Rating KW, RPM, V, Hz	To be furnished by Bidder
13.	**Coupling** Type Make Size	To be furnished by Bidder
14.	Drive Arrangement	To be furnished by Bidder
15	Weight of Equipment with drive unit	To be furnished by Bidder
16.	Weight of Equipment without drive unit	To be furnished by Bidder
17.	Weight of heaviest Single unit	To be furnished by Bidder
18.	Safety Protection	To be furnished by Bidder
19.	Power & Capacity Calculation	To be furnished after placement of order
20.	Product (Sieve) Analysis	To be furnished by Bidder
21.	Material of Construction Main Frame Roll Shell Roll Segment with Teeth Bearing Housing	To be furnished by Bidder

	Frame Liner Shaft Any other details	
22.	General write up for various units & Special features	To be furnished by Bidder
23.	Electrics	To be furnished by Bidder
24	**Drawings** • General arrangement dimensioned drawing of Secondary sizer with drive unit • Foundation arrangement drawing with anchor bolt positions and load for sizer with drive unit • Drive arrangement details • Feeding and discharge chutes details • Maker's descriptive pamphlets • Detailed equipment specification with constructional features	To be furnished by Bidder

TECHNICAL DATA SHEET FOR SECONDARY SIZER

Sl. No.	**Description**	**Specification/ Remarks**
1	Type/ Model	To be furnished by Bidder
2	**Capacity** Peak crushing capacity Nominal crushing capacity	 1920 TPH 1600 TPH
3	Quantity required	1 (One)
4	Over all dimension (LengthXWidthXHeight)	To be furnished by Bidder
5	Material	ROM Coal

6.	Feed Size	(-) 300 mm nominal
7.	Product Size	(-) 100 mm (95% minimum) (upto 150mm size limited to 5%)
8.	In feed Method	Bidder to suggest suitable feeder arrangement.
9.	Min. guaranteed tip wear life (T of coal crushed)	To be furnished by Bidder
10.	Fines generation (%)	To be furnished by Bidder
11.	Shaft Configuration No. of teeth/segment No. of Segment/shaft Roll Length Roll Speed Bearing Type/ Make Lubrication System	To be furnished by Bidder
12.	**Gear Box** Type Output Torque Maximum Peak overload torque Transmission Ratio Number of Stages Lubrication Type Bearing Type/Make	To be furnished by Bidder
13.	**Motor** Rating KW, RPM, V, Hz	To be furnished by Bidder
14.	**Coupling** Type Make Size	To be furnished by Bidder
15	Drive Arrangement	To be furnished by Bidder

16	Weight of Equipment with drive unit	To be furnished by Bidder
17.	Weight of Equipment without drive unit	To be furnished by Bidder
18.	Weight of heaviest Single unit	To be furnished by Bidder
19.	Safety Protection	To be furnished by Bidder
20.	Power & Capacity Calculation	To be furnished after placement of order
21	Product (Sieve) Analysis	To be furnished by Bidder
22.	Material of Construction Main Frame Roll Shell Roll Segment with Teeth Bearing Housing Frame Liner Shaft Any other details	To be furnished by Bidder
23	General write up for various units & Special features	To be furnished by Bidder
24	Electrics	To be furnished by Bidder
25	**Drawings** • General arrangement dimensioned drawing of Secondary sizer with drive unit • Foundation arrangement drawing with anchor bolt positions and load for sizer with drive unit • Drive arrangement details • Feeding and discharge chutes details • Maker's descriptive pamphlets • Detailed equipment specification with constructional features	To be furnished by Bidder

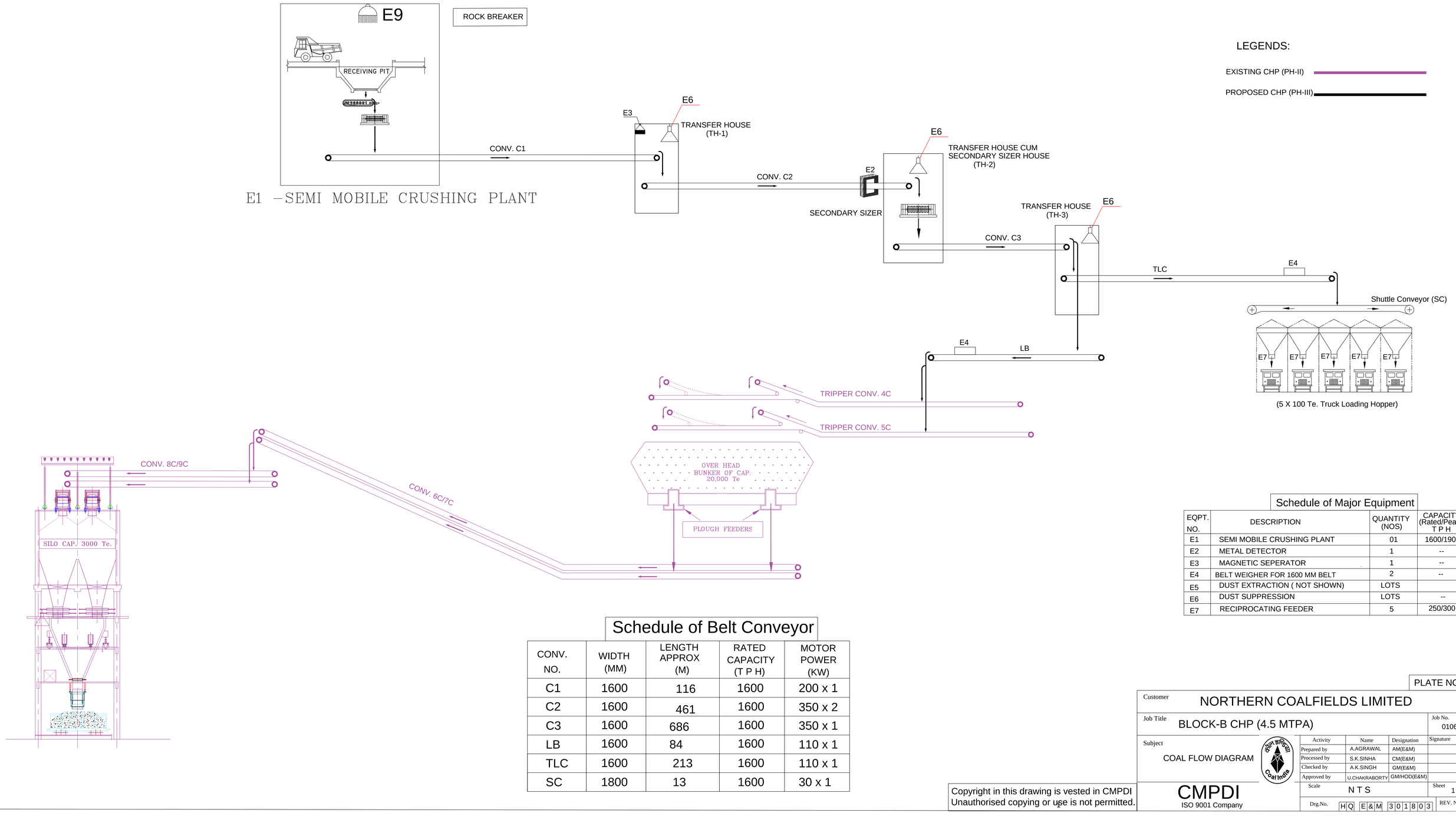
LIST OF FIVE YEARS OPERATION AND MAINTENANCE SPARES

Sl.No.	Items	Qty.	Minimum guaranteed life (in terms of coal crushed)
1.			
2.			
3.			
4.			

Above list shall be submitted for each equipment –Primary sizer, apron feeder, secondary sizer etc.

ANNEXURE-3

TENDER DRAWINGS



LEGENDS:

EXISTING CHP (PH-II)

PROPOSED CHP (PH-III)

Schedule of Belt Conveyor

CONV. NO.	WIDTH (MM)	LENGTH APPROX (M)	RATED CAPACITY (T P H)	MOTOR POWER (KW)
C1	1600	116	1600	200 x 1
C2	1600	461	1600	350 x 2
C3	1600	686	1600	350 x 1
LB	1600	84	1600	110 x 1
TLC	1600	213	1600	110 x 1
SC	1800	13	1600	30 x 1

Schedule of Major Equipment

EQPT. NO.	DESCRIPTION	QUANTITY (NOS)	CAPACITY (Rated/Peak) T P H
E1	SEMI MOBILE CRUSHING PLANT	01	1600/1900
E2	METAL DETECTOR	1	--
E3	MAGNETIC SEPERATOR	1	--
E4	BELT WEIGHER FOR 1600 MM BELT	2	--
E5	DUST EXTRACTION (NOT SHOWN)	LOTS	
E6	DUST SUPPRESSION	LOTS	--
E7	RECIPROCATING FEEDER	5	250/300

PLATE NO. - 2

Customer: NORTHERN COALFIELDS LIMITED

Job Title: BLOCK-B CHP (4.5 MTPA)

Job No.: 010619118

Subject: COAL FLOW DIAGRAM

Activity	Name	Designation	Signature	Date
Prepared by	A.AGRAWAL	AM(E&M)		FEB 20
Processed by	S.K.SINHA	CM(E&M)		FEB 20
Checked by	A.K.SINGH	GM(E&M)		FEB 20
Approved by	U.CHAKRABORTY	GM/HOD(E&M)		FEB 20

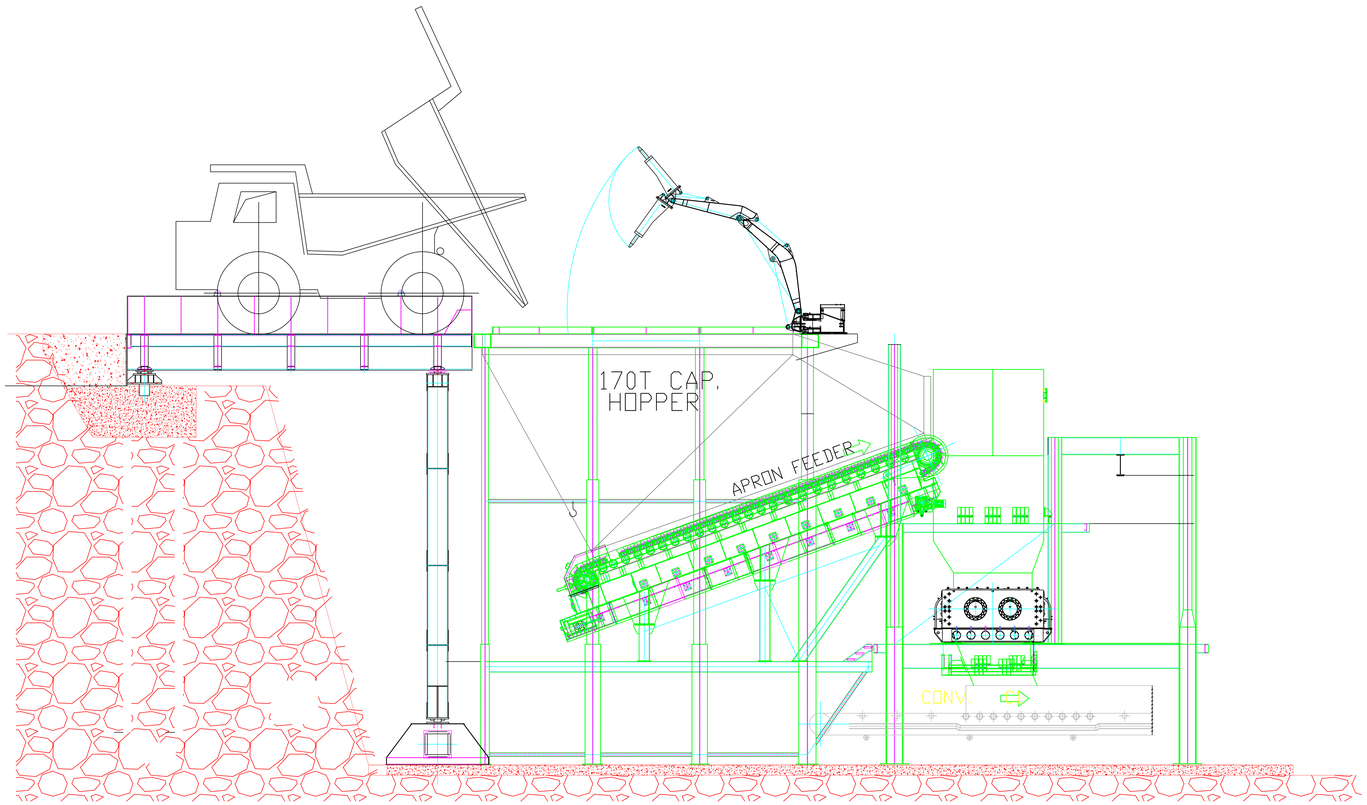
Scale: N T S

Sheet: 1 OF 1

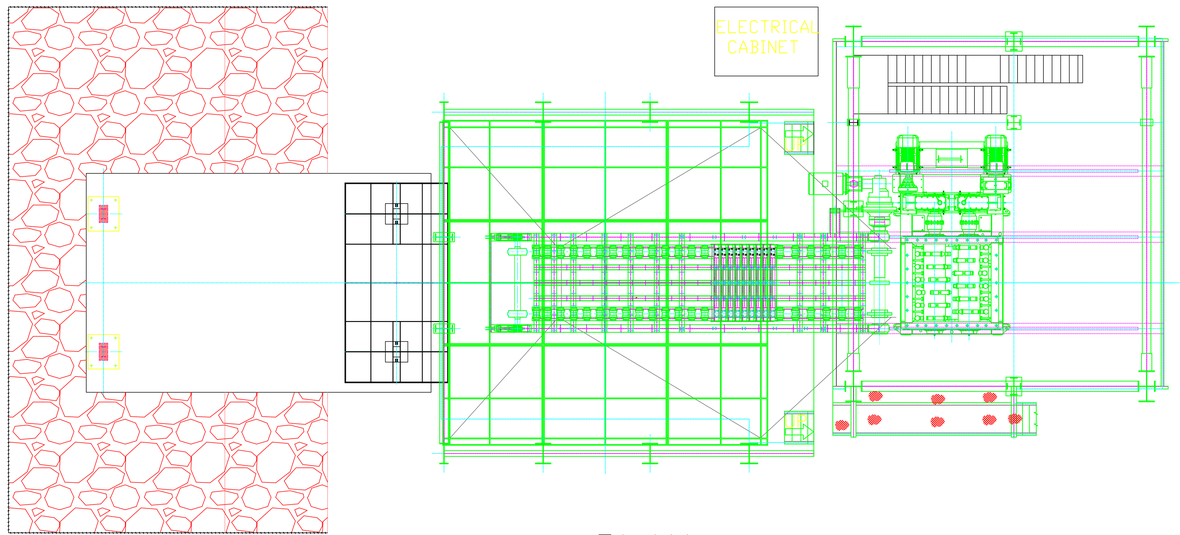
CMPDI
ISO 9001 Company

Drg.No. HQ E&M 301803

REV. No. 0



ELEVATION



PLAN

PLATE NO. - 3

NOTE :

1. PRELIMINARY DRAWING. NOT TO BE USED FOR CONSTRUCTION PURPOSES
2. SHAPE OF THE RECEIVING HOPPER IS INDICATIVE ONLY.

Customer	NORTHERN COALFIELDS LIMITED				
Job Title	BLOCK-B CHP(4.5 MTY)			Job No.	010619118
Subject		Activity	Name	Designation	Signature / Date
GA OF SEMI-MOBILE CRUSHER		Prepared by	A.AGRAWAL	DM(E&M)	FEB 20
		Processed by	S.K.SINHA	CM(E&M)	
		Checked by	A.K.SINGH	GM(E&M)	
		Approved by	U.CHAKRAVARTY	GM(E&M)/HOD	
CMPDI ISO 9001 Company		Scale	N T S	Sheet	1 OF 1
		Drg.No.	HQ E&M 30180 9	REV. No.	0