

# CEMENT CORPORATION OF INDIA LIMITED

(A Govt. of India Enterprise)

Core V, SCOPE Complex, 7 Lodhi Road NEW DELHI- 110003

CIN-U74899DL1965GOI004322

E-Mail: [proj\\_co@ccilt.in](mailto:proj_co@ccilt.in)

Website: [www.ccilttd.in](http://www.ccilttd.in)

**NIT NO.: GM (T&O)/PROJ/CO/FAS/TDO/202**

**Dt: 10.11.2022**

## **NOTICE INVITING E-TENDER (Only through e-procurement)**

1. Online electronic bids through Electronic Tendering System (ETS) are invited from manufacturers having adequate experience are invited for **“Manufacture, Supply, Erection, Hooking up, Commissioning and PG test of New Fly-ash Steel Silo of Cap 500MT with feeding, extraction and regulating system “**

The tender should meet the eligibility criteria as stated in the tender for qualifying the Techno Commercial Bid. The Complete set of tender documents is available on websites [www.ccilttd.in](http://www.ccilttd.in), [www.eprocure.gov.in](http://www.eprocure.gov.in). & [eprocure.nic.in](http://eprocure.nic.in) . No Reverse Auction will be performed for this Tender

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| E-TENDER NO.   | <b>GM (T&amp;O)/PROJ/CO/FAS/TDO/2022</b>   |
| MODE OF TENDER   | e-procurement system open e-tender (Online Two Bid, Pre-bid & Reverse Auction) through <a href="http://eprocure.nic.in">eprocure.nic.in</a> .                      |
| Date of NIT available to parties to download                     | From: 11.11.2022 (10.00 hrs.)<br>Till: 02.12.2022 (14.00 hrs.)   |
| PRE-BID MEETING  | <b>Pre-bid meeting will be held on 23.11.2022 at 3.00 p.m.</b>   |
| PRE-BID MEETING Venue  | <b>Through V.C ( Link will be provided to interested parties)</b>  |
| Last date for submission of queries by the vendors/bidders.      | The vendors/Bidders need to provide the list of clarifications required, if any along with clause no. of the tender documents <b>prior to the pre-bid meeting.</b> |
| Date of Site visit (if needed) by the vendors/bidders if needed. | <b>On or before 01.12.2022</b>   |

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| Last date of submission of EMD , valid SSI/NSIC/MSME certificate and other documents required as per tender terms & conditions under covering letter     | Rs. <b>13,50,000/-</b><br>(Through e-payment gateway only as per Clause No. 1.0 of Part-II)   |
| Date of starting of open e- tender for submission of on line Techno-Commercial Bid and Price Bid at <a href="http://eprocure.nic.in">eprocure.nic.in</a> | From: 11.11.2022 (10.00 hrs.)<br>Till: 02.12.2022 (15.00 hrs.)  |
| Date & time of opening of Part-A , Techno commercial bid Part-B:<br><br>Price bid<br><br>Reverse Auction start time<br><br>Reverse Auction end time      | <b>05.12.2022 @ 15:30 hrs.</b><br><br>To be communicated separately. 2 days after opening of price<br><br>No Reverse Auction for the Tender |
| Validity of bids   | 120 days from the date of techno- commercial bid opening.   |

Offer is invited for the following on FIRM & FOR destination basis as per details given below:

- 1) Only those tenders will be considered who fulfill the terms & conditions mentioned in the tender documents.
- 2) Only those tenders will be considered who will deposit the EMD as per Clause No. 1.0 of Part-II GTC by due date.
- 3) The price- bid should be submitted as per tender Price-bid format otherwise the tender is liable for rejection.

**SCHEDULE OF MATERIAL:**

| NIT No.                       | Name of the Item   | Quantity                 |
|-------------------------------|--|--------------------------|
| GM (T&O)/PROJ/CO/FAS/TDO/2022 | Manufacture, Supply, Erection, Hooking up, Commissioning and PG test of New Fly-ash Steel Silo of Cap 500MT with feeding, extraction and regulating system | 01 set on turnkey basis. |

## List of Annexure

The tender documents comprise of the following:-

|                         |  |
|-------------------------|--|
| <b>Part I</b>           | <b>Instructions to tenderers</b>   |
| <b>Part II</b>          | <b>General terms &amp; conditions</b>  |
| <b>Annexure –1 to 9</b> | <b>Download from CCI website <a href="http://www.ccilttd.in">www.ccilttd.in</a>. Must be submitted by tenderer duly filled &amp; signed.</b> |
| <b>Annexure – X</b>     | <b>Important Instructions to bidders</b>   |
| <b>Annexure- XII</b>    | <b>Part-III: Special Terms &amp; Conditions</b>  |
| <b>Annexure- XIII</b>   | <b>Part-IV: Technical Specifications (For Drawings refer Annexure XIII.5.1 to Annexure XIII.5.8)</b>   |
| <b>Annexure- XIV</b>    | <b>Price Bid Performa (Price schedule) to be submitted by tenderer duly filled &amp; signed.</b>   |

Please visit our website [www.ccilttd.in](http://www.ccilttd.in) for Part-I: Instruction to bidders, Part-II: General terms & conditions, Integrity pact & all formats (Annexure 1 to 9). Submit the same along with Annexure-XI, XII & XIII duly filled & signed by tenderer.

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## Annexure-XI

**Important instructions for E-procurement**

This is an e-procurement event of CEMENT CORPORATION OF INDIA. You are requested to read the tender terms & conditions (**Annexure: I to VII**) of this tender before submitting your online tender. Tenderers who do not comply with the conditions with documentary proof (wherever required) will not qualify in the Tender for opening of price bid.

| 1                                  | <p>Process of E-Tender:<br/>Registration:<br/>The process involves vendor's registration with <a href="http://www.eprocure.gov.in/eprocure/app">www.eprocure.gov.in/eprocure/app</a>. Only after registration, the vendor(s) can submit his/their bids electronically. Electronic Bidding for submission of Techno-Commercial Bid as well as Price Bid over the internet will be done. The Vendor should possess Class III signing type digital certificate. Vendors are to make their own arrangement for bidding from a P.C. connected with Internet. (Bids will not be recorded without Digital Signature).</p> <p><b>SPECIAL NOTE: THE PRICE BID AND THE TECHNO-COMMERCIAL BID HAS TO BE SUBMITTED ON-LINE AT <a href="http://www.eprocure.gov.in/eprocure/app">www.eprocure.gov.in/eprocure/app</a></b></p> <p>Vendors are required to register themselves online with <a href="http://www.eprocure.gov.in/eprocure/app">www.eprocure.gov.in/eprocure/app</a> → 'Vendor Enrollment' link. Filling up details and creating own user id and password → Submit. Vendors will receive a system generated mail confirming their registration in their email which has been provided during filling the registration form.</p> <p><b>Contact person (Cement Corporation of India):</b></p> <table border="1" data-bbox="279 1003 1451 1297"> <thead> <tr> <th>Name</th> <th></th> <th>Mobile</th> </tr> </thead> <tbody> <tr> <td>B. M. Mahana GM( T &amp;O)</td> <td><a href="mailto:bm.mahana@ccilttd.in">bm.mahana@ccilttd.in</a></td> <td>7799938006</td> </tr> <tr> <td>S.K. Singh DGM(MM)</td> <td><a href="mailto:Sunilk.singh@ccilttd.in">Sunilk.singh@ccilttd.in</a></td> <td>8800141630</td> </tr> <tr> <td>S.S. Prakash Srivastva Dy.M (Mech)</td> <td><a href="mailto:proj_co@ccilttd.in">proj_co@ccilttd.in</a></td> <td>7827389595</td> </tr> </tbody> </table> <p><b>B) System Requirement:</b><br/>Windows 8, 10 Professional Operating System, Internet Browser-9,10 &amp;11. Signing type Class 3 digital signature Java JRE 6 and above</p> | Name       |  | Mobile | B. M. Mahana GM( T &O) | <a href="mailto:bm.mahana@ccilttd.in">bm.mahana@ccilttd.in</a> | 7799938006 | S.K. Singh DGM(MM) | <a href="mailto:Sunilk.singh@ccilttd.in">Sunilk.singh@ccilttd.in</a> | 8800141630 | S.S. Prakash Srivastva Dy.M (Mech) | <a href="mailto:proj_co@ccilttd.in">proj_co@ccilttd.in</a> | 7827389595 |
|------------------------------------|---|------------|--|--------|------------------------|--|------------|--------------------|--|------------|------------------------------------|--|------------|
| Name                               |   | Mobile     |  |        |                        |  |            |                    |  |            |                                    |  |            |
| B. M. Mahana GM( T &O)             | <a href="mailto:bm.mahana@ccilttd.in">bm.mahana@ccilttd.in</a>  | 7799938006 |  |        |                        |  |            |                    |  |            |                                    |  |            |
| S.K. Singh DGM(MM)                 | <a href="mailto:Sunilk.singh@ccilttd.in">Sunilk.singh@ccilttd.in</a>  | 8800141630 |  |        |                        |  |            |                    |  |            |                                    |  |            |
| S.S. Prakash Srivastva Dy.M (Mech) | <a href="mailto:proj_co@ccilttd.in">proj_co@ccilttd.in</a>  | 7827389595 |  |        |                        |  |            |                    |  |            |                                    |  |            |
| 2                                  | <p><b>(A) Part-A Techno-Commercial bid</b> will be opened electronically on specified date and time as given in the NIT. Bidder(s) can witness electronic opening of bid.</p> <p><b>(B) Part-B Price bid</b> will be opened electronically of only those bidder(s) who's Part-A Techno-Commercial Bid is found to be Techno-Commercially acceptable by CCI. Such bidder(s) will be intimated date of opening of Part-B Price bid, through valid email confirmed by them.</p> <p><b>Note:</b><br/>The tenderers are advised to offer their lowest possible rates taking into account the prevailing market conditions. There would generally be no negotiations hence please submit your most competitive prices while submitting the price bid. However, if the rate is still considered high, action as per prevailing instruction/guideline shall be taken.</p>   |            |  |        |                        |  |            |                    |  |            |                                    |  |            |
| 3                                  | <p>All entries in the tender should be entered in online Technical &amp; Commercial Formats without any ambiguity.</p>  |            |  |        |                        |  |            |                    |  |            |                                    |  |            |

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| 4 | In case of failure to access the payment towards cost of tender document & EMD for any reason, the vender, in term, will not have the access to on line e-tender and no correspondence in this respect will be entertained and CCI will not be responsible for any such lapses on this account. Bidder(s) are advised to make remittance of tender fee and EMD through Online well in advance and verify completion of transaction in respect of  |
|   | tender fee and EMD. Vendors are instructed to upload documents in document library. Multiple documents can be uploaded. Maximum size of single document for upload is 5 MB. Once documents are uploaded in the library, vendors can attach documents through Attach Document link against the particular tender. For further assistance please follow instructions of Vendor Help Manual  |
| 5 | All notices/corrigendum and correspondence to the bidder(s) shall be sent by email only during the process till finalization of tender by CCI. Hence the bidders are required to ensure that their corporate email I.D. provided is valid and updated at the stage of registration of vendor with CPP Portal (i.e. Service Provider). Bidders are also requested to ensure validity of their DSC (Digital Signature Certificate).   |
| 6 | The responsibility of downloading the related corrigenda, if any, will be that of the downloading parties.  |
| 7 | E-tender cannot be accessed after the due date and time mentioned in NIT.   |
| 8 | <p><b>Bidding in e-tender:</b></p> <p>a) Bidder(s) need to submit necessary EMD and Tender fees (If ANY) to be eligible to bid online in the e-tender. Tender fees are non-refundable. No interest will be paid on EMD. EMD of the unsuccessful bidder(s) will be refunded by CCI.</p> <p>b) The process involves Electronic Bidding for submission of Techno Commercial Bid as well as Price Bid is explained in Help Manual. 1) In all cases, bidder should use their own ID and Password along with Digital Signature at the time of submission of their bid. 2) During the entire e-tender process, the bidders will remain completely anonymous to one another and also to everybody else.</p> <p>c) The e-tender floor shall remain open from the pre-announced date &amp; time and for as much duration as mentioned above.</p> <p>d) All electronic bids submitted during the e-tender process shall be legally binding on the bidder. Any bid will be considered as the valid bid offered by that bidder and acceptance of the same by the Buyer will form a binding contract between Buyer and the Bidder for execution of supply. Such successful tenderer shall be called hereafter SUPPLIE</p> <p>e) It is mandatory that all the bids are submitted with digital signature certificate otherwise the same will not be accepted by the system. Buyer reserves the right to cancel or reject or accept or withdraw or extend the tender in full or part as the case may be without assigning any reason thereof.</p> <p>f) No deviation of the terms and conditions of the tender document is acceptable. Submission of bid in the e-tender floor by any bidder confirms his acceptance of terms &amp; conditions for the tender.</p> <p>g) Unit of Measure (UOM) is indicated in the e-tender Floor. Rate to be quoted should be in Indian Rupee as per UOM indicated in the e-tender floor/tender document.</p> |

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| 9  | Any order resulting from this open e-tender shall be governed by the terms and conditions mentioned therein.   |
| 10 | No deviation to the technical and commercial terms & conditions are allowed.   |
| 11 | After submitting online bid, the bidder cannot access the tender, once it has been submitted with digital signature  |
| 12 | CCI has the right to cancel this e-tender or extend the due date of receipt of bid(s) without assigning any reason thereof.  |
| 13 | The online tender should be submitted strictly as per the terms and conditions and procedures laid down in the website <a href="http://www.eprocure.gov.in/eprocure/app">www.eprocure.gov.in/eprocure/app</a>  |
| 14 | The bidders must upload all the documents required as per terms of NIT. Any other document uploaded which is not required as per the terms of the NIT shall not be considered.   |
| 15 | The bid will be evaluated based on the filled-in technical & commercial formats.   |
| 16 | The documents uploaded by bidder(s) will be scrutinized. In case any of the information furnished by the bidder is found to be false during scrutiny, punitive action including suspension and banning of business can also be taken against defaulting bidders. |
| 17 | <b>Bidders are requested to read the vendor guide in the page <a href="http://www.eprocure.gov.in/eprocure/app">www.eprocure.gov.in/eprocure/app</a> to familiarize themselves with the system before bidding.</b>   |

**For and on behalf of CCI Ltd.,**

HOD (MM)

### PART- III: -SPECIAL TERMS & CONDITIONS

**Tender for “Manufacture, Supply, Erection, Hooking up, Commissioning and PG test of New Fly-ash Steel Silo of Cap 500MT with feeding, extraction and regulating system at Tandur unit on turnkey basis”.**

This tender contains part –I and Part – II general terms, Part – III special terms and conditions, Part – IV Technical Specification & Data sheet and Price bid. All these documents are to be submitted duly signed and stamped by the tenderers.

**Please visit our website [www.ccilttd.in](http://www.ccilttd.in) for Covering letter, Part-I - Instruction to tenderers, Part-II- General terms & conditions, Integrity pact, Annexure-1-9 and submit the same & Annexure-9 duly filled and signed along with the tender.**

In addition to the General Terms and conditions of the tender Part- I & II the following Special terms and conditions also apply to the contract for the supply of above category of material. These special terms and conditions if contradictory to any of the conditions given in Part-I & II shall prevail upon the conditions given therein:-

#### 1.0) General Information

- a) In the event of negotiations, only downward revision of rates will be allowed. Any change in Techno-commercial terms as agreed earlier, will not be permitted at this stage. Hence, any qualifying remarks in the Price bid revised/negotiated offer will not be entertained.
- b) **Site visit:** The parties who wish to quote should visit the site, know its conditions, and study the same before submitting the offer.

#### 2.0) ELIGIBILITY CRITERIA

Average annual financial turn over during last three years ending 31<sup>st</sup> March of previous financial year should be Rs. 202 lakhs.

Experience of having successfully completed similar works during last seven years ending last day of month previous to the one in which applications are invited should be either of the following:

- a) Three similar completed works costing not less than Rs. 269 lakhs.
- or
- b) Two similar completed works costing not less than Rs. 336 lakhs
- or
- c) One similar completed work costing not less than Rs.538 lakhs.

#### 3.0) SCOPE OF WORK:

The detailed Scope of Work will include **“Manufacture, Supply, Erection, Hooking up, Commissioning and PG test of New Fly-ash Steel Silo of Cap 500MT with feeding, extraction and**

**regulating system”at Tandur unit on turnkey basis.**

Manufacturing, Supply of equipments as per BOQ enclosed in Part-IV technical specifications, Fabrication of structural steel silo, support structure & other allied plate & structural work is in tenderers scope.

Design data along with tentative drawings is enclosed along with Tender. However, the successful bidder will submit the design & drawings considering the site conditions and incorporating minor changes, if any, which will be approved by CCI- TDO Unit.

Successful tenderer has to coordinate with M/s. CCI & design consultant M/s. Strucon Consulting Pvt. Ltd. nominated by M/s. CCI & execute the works as per tender terms & conditions. Address of M/s. Strucon Consulting Pvt. Ltd - Plot A55/12, B-Wing, First Floor, DLF Phase-I, Gurgaon, Haryana, 122002.

The detailed scope of work & technical specifications is given in Part-IV of the tender documents.

**4.0) PRICES :**

The Bank Guarantees as mentioned under different columns (Security Deposit, Advance & Performance guarantee etc.) are to be submitted as per CCI formats from any Nationalized/scheduled Bank only of equal amount as per validity indicated in the relevant clause with claim period of further three months.

Prices are to be quoted on firm and F.O.R. destination basis inclusive of Packing / forwarding charges, insurance, freight & Entry Tax etc. No escalation during the period of contract / execution of the entire contract / extended period on whatever reasons thereof will be allowed in prices.

The price should be quoted strictly in our prescribed Price Bid format enclosed with the tender, both in figures and words to avoid ambiguities. In case of any difference in figures & words, the lower amount of the two will be taken into consideration.

A) Price quoted by the party in Price Bid Performa on turnkey basis, will be distributed as under :

| S. No. |         | Description  | Percentage of Total quoted price |
|--------|---------|--|----------------------------------|
| 1      | Part –A | Supply of Components / items such as completed bought out items, M.S. plates, structural steels etc. | 60 %                             |
| 2      | Part-B  | Fabrication, Assembling, Fixing and Erection work.   | 25%                              |
| 3      | Part-C  | Commissioning and hooking up with existing system  | 15%                              |

Award of contract will be solely at the discretion of CCI.

**5.0) PROJECT SCHEDULE :**

**5.1)** The complete job as per the scope of work given at Part-IV starting from Manufacture, Supply,



Erection, Hooking up to successful commissioning and PG Test is to be completed **in maximum 4 months** from the date of completion of civil work. The date of completion of civil work will be considered as the zero date for all purposes.

**5.2)** The total number of days required for hooking up will be 07 (seven ) days . If the hooking up time exceeds 07 days, a recovery of Rs. 3.00 Lakhs per day shall be made in addition to any other recoveries as per the provision of the contract.

**The successful tenderer has to submit:**

- a) General Layout, PERT Chart, BarChart, Manufacturing & Billing schedule for the complete project to CCI . Design data along with tentative drawings will be provided by M/s. CCI. However the successful bidder will submit the design & drawings considering the site conditions and incorporating minor changes, if any, which will be approved by CCI- TDO Unit the successful bidder shall submit the above details within 1 Month from the date of award of LOI .Design will be finally approved by CCI within 15 days.
- b) Successful tenderer has to coordinate with M/s. CCI & design consultant M/s. Strucon Consulting Pvt.Ltd. nominated by M/s. CCI & execute the works as per tender terms & conditions. Address of M/s. Strucon Consulting Pvt. Ltd - Plot A55/12, B-Wing, First Floor, DLF Phase-I, Gurgaon, Haryana, 122002
- c) Decision of CCI in respect of all the technical specifications, design, drawings, diagrams, schemes and selection of vendors/contractors will be final.
- d) The successful tenderer has to submit item wise Billing Schedule for the supply of the material in sequence of erection at the site for approval to CCI. The approved billing schedule may be item wise/ tonnage basis as the case may be and shall be used for purpose of raising the bills.

**6.0) PAYMENT TERMS:**

6.1) The party shall be provided a mobilization advance of 10% of the total value against BG. BG should be valid up to one year after commissioning and PG Test. The advance will be adjusted in running bills proportionately.

**6.2) PART- A: Supply of components such as bought out items, machined mild steel cones / support system, M.S. Plate & other structural steel members, purlins / frames, color coated galvanized steel sheets, polycarbonate / translucent sheets for skylight, Air slides, Compressors & fabrication of components, all the other related equipments as per BOI, complete material for electrification of fly-ash silo, hooking up with existing system.**

90% (Ninety percent) of prices of components/items & complete bought out material etc., along with 100% taxes, duties & freight (tax amount to be released only after it appears paid in the GST Portal) will be released within 7 days against submission of running bills.

For this purpose, the tenderer should indicate the breakup of prices involved, item wise as per the

price bid format and get the same approved by CCI before commencement of dispatches. The dispatches should be made in sequence to their erection i.e., the item to be erected 1<sup>st</sup> will be supplied first.

The following documents are to be submitted for release of payment.

- a) Three copies of invoice along with packing list etc.
- b) Certificate of inspection conducted by CCI officials at our site.
- c) Copy of equipment/machinery list along with value as per billing schedule to be submitted by the successful tenderer duly approved by CCI.
- d) Material receipt at CCI Tandur by tenderers representative its unloading and inspection report from the Tandur Cement factory indicating value of material with respect to (b) above.

**6.3) PART- B: Assembling, Fixing & Erection of components including steel silo with extraction system in position at all heights, painting of structures and fixing of color coated galvanized steel sheets and polycarbonate / translucent sheets, side cladding , walkway , ladders , platforms, etc. wherever needed. Complete Electrification of fly-ash silo & hooking up with existing system.**

90% (Ninety percent) of prices of Fabrication, assembling, fixing & Erection work after completion along with 100% taxes, duties & freight, (tax amount to be released only after it appears paid in the GST Portal) will be released within 7 days against submission of running bills.

**6.4) PART- C: Hooking up with existing system and Commissioning of fly-ash silo.**

90% (Ninety percent) of prices of commissioning along with 100% taxes & duties will be released after successful completion of commissioning and submission of running bills.

**6.5) P.G. TEST :**

- a) On successful completion of erection, commissioning & satisfactory completion of P.G. Test, 7% (seven percent) of the total contract prices (excluding taxes, duties & freight), will be released after deduction of L.D. & other recoveries, if any. Detailed PG T&C as per annexure mentioned in Part-IV.
- b) Balance 3 % of total order value will be paid against submission of BG for equivalent amount valid for 01 year from PG test and further claim period of 03 months

All payment will be released through e-transaction mode.

Payments will only be released after submission Security Deposit towards contract vide clause No. 9.0 Part-III Special terms & conditions.

**7.0) MODE OF PAYMENT :**

The tenderer for payment either through e- payment. Approval of billing schedule submitted by the successful tenderer one week before the dispatch of the first consignment by the tenderer.

**The following documents are to be submitted:**

(i) Copy of insurance policy, clearly indicating the part consignment by underwriter, Inspection report by CCI certifying acceptance of consignment and value conforming to the schedule of material already certified by CCI.

(ii) Any other documents as required by CCI Finance.

In case of option for direct payment by tenderer, the same shall be released by RTGS / NEFT on receipt and acceptance of material/ equipment at CCI site or approval of running bills in case of erection and commissioning charges, as mentioned above at Clause No.3.4.

**8.0) PENALTY / L.D.:**

Any delay beyond the scheduled completion period of the project will attract penalty @ 0.5% delay perfortnight of the total contract value subject to the maximum ceiling of 5% of the total contract value.

The date of successful commissioning on the basis of certificate given by CCI will be treated as the date of completion for the purpose of calculating penalty. However, Performance Guarantee Test shall be carried out as per technical specifications (Part- IV) within a period of 15 days from the date of successful commissioning.

**9.0) SECURITY DEPOSIT:**

The successful tenderer shall have to furnish Security Deposit equivalent to 10 % (ten percent) of the total value of the contract including taxes & duties by way of e-payment / Bank Guarantee (in CCI format to be provided by CCI) in lieu of Clause 2.0 of PART – II of the tender towards satisfactory performance of the contract within 15 days from the date of award of the work order to our Tandur unit.

This Security Deposit shall be refunded within 03 months from the date of satisfactory completion of the PG Test and on basis of certificates given by CCI.

**10.0) INVOICING:**

Three set of copies of invoices showing basic rates, full taxes amount / GST, freight etc. etc. along with packing list, delivery challan, Railway Receipt / Lorry Receipt / Parcel way bill or similar other documents are to be sent to the consignee, in case of direct payment option by NEFT/RTGS submitted to CCI duly certified by CCI representative in the manner specified for obtaining payment. Copy of these documents should also be sent immediately after dispatch of the consignment to the destination by fax / mail to avoid demurrage / wharf age.

Three copies of invoices of which one shall be original duly pre-receipted along with Packing list/delivery challan shall be sent to the paying authority directly.

If any extra charges including wharf age / demurrage are incurred in taking delivery of the consignment due to supplier's failure to observe the conditions mentioned above, the same would be recovered from the supplier.

**11.0) CONSIGNEE:**

HOD (MM) – Tandur (TS). However, the consignment note (C/N) / LR / RR shall be endorsed by CCI in

the name of tenderers representative posted at CCI Tandur Unit to facilitate receipt, unloading, transport and safe custody by him at CCI's site.

The successful tenderer should ensure that their site in-charge would be available at Tandur unit, before the first lot of material reaches the unit, for ensuring the receipt, unloading of the material and its safe unloading as well as custody etc.

Transit insurance, insurance during storage will be in the scope of successful Tenderer only.

**12.0) PAYING AUTHORITY:**

H.O.D. ( FINANCE ) – TANDUR CEMENT FACTORY, TANDUR

**13.0) INSPECTION:**

The equipments/materials shall be inspected by CCI at its plant site by the Corporation representative. However ,CCI retains the option to inspect the items at suppliers location.

Inspection shall, in no way, absolve the responsibility of the supplier for workmanship, quality and performance guarantee offered by them.

**14.0) PERFORMANCE GUARANTEE TESTS:**

The successful tenderer shall be required to give performance guarantee tests as per tender clause separately given in Annexure XIII.7 of the tender document within 30 days from the date of successful commissioning.

The tenderer shall ensure that proper illumination level inside / outside in Fly-ash silo and other equipment lighting as specified.

**15.0) WARRANTY/ GUARANTEE:**

The tenderer shall guarantee that all the equipments supplied by them whether manufactured at their works or fabricated at our site or by their sub-suppliers or purchased from any other source and supplied to the Corporation will be new and free from all defects and shall be of first class workmanship and quality.

The tenderer shall warranty that to replace, rectify or repair free of cost at our Factory site, the components or the parts of the machinery, including the bought outs which have become unserviceable due to any of the defects within a period of 12 (twelve) months from the date of successful commissioning of the plant or 18 (Eighteen) months from the date of completion of the delivery whichever is earlier. If the tenderer is not complying with the above within a reasonable time, the Corporation shall have the option to rectify, repair or replace the defective parts / machinery after expiry of two weeks" notice and at the risk and cost of the tenderer.

**16.0) TRANSPORTATION, INSURANCE& HANDLING AT SITE:**

The freight and insurance charges will be borne by the successful tenderer. All loading, unloading,

transportation and storage at site will be done by the successful tenderer. Suitable covered space shall be provided by CCI for critical and other sensitive components free of charges. Erection cum storage insurance shall also be included in the successful tenderers scope.

#### **17.0) TECHNICAL INFORMATION / DATA:**

The tenderers are required to furnish the information particulars i.e. capacity, power in KW, material of construction & any other special parameters along with their tender.

#### **18.0) SUBMISSION OF BAR CHART, MANUFACTURING & SUPPLY, BILLING SCHEDULES etc.**

Bar chart, Manufacturing, Supply & Billing schedule within 1 month from the date of LOI.

#### **19.0) REPORTS:**

Weekly report of the dispatches for each previous week shall be sent by the Successful tenderer by Monday of subsequent week to the CCI, Tandur with following particulars:

- i) Quantity due for supply during the month.
- ii) Quantity actually dispatched with reasons for variation.
- iii) LR / RR No. and date.
- iv) Bill No. and date.
- v) Quantity awaiting dispatches.

#### **20.0) AWARD OF CONTRACT AND OTHER TERMS & CONDITIONS:**

##### **The Corporation reserves the right:-**

- 01) To accept the sole and unfettered discretion any tender for whole or part quantities/part work or to reject any or all tenders without assigning any reasons thereof and without, entitling the tenderer to any claims whatsoever, Firms which have failed to fulfill earlier contractual obligation may not be considered.
- 02) The parties who wish to quote for the Tender shall visit the Factory on any working day & see the site condition, study before submitting the offer.
- 03) Electrical power supply will be provided by CCI for machines like, Welding machines, hand lamps, drilling machines etc., free of cost. However same tools and tackles shall be arranged by Tenderer.
- 04) Accommodation for labour will be arranged by the Contractor / tenderer at his own cost. Accommodation for Staff will be arranged by the M/s. CCI on chargeable basis subject to availability.
- 05) The lodging/boarding and transportation of the workmen shall be the responsibility of the Contractor / tenderer.
- 06) CCI will not be liable for any loss to the Contractor on account of non-availability of fronts or services due to reasons beyond control of the Corporation.
- 07) All the Contractor's workmen must observe the rules and regulations of CCI, State and Central Governments in and outside the working area.
- 08) Contractors have to arrange required safety shoes, safety helmets and PPE for your

- workmen engaged in the factory.
- 09) ESIC provision has to be adhered by the contractor & payment of ESI share to Govt., by the contractor timely & proof of the same has to be produced to CCI on monthly basis.
  - 10) Mustering in & out of the contractors workforce shall be regulated as per the instructions of our personal security department.
  - 11) The Contractor will also obtain Labour License from the relevant labour authority before starting the job at site as required under the Contract Labour (Regulation & Abolition) Act, 1970 & Rules framed therein.
  - 12) The Contractor shall maintain proper records under various Act/Statutory in force and shall produce the same for Inspection as and when required by CCI/Statutory authorities, to do so.
  - 13) While working, the Contractor will provide and take care of the safety measures as per stipulation of Factories Act & Rules without any exception. In case of accident of Contractor's workmen, CCI is not liable to pay any compensation on this account. In case of emergency, the contractor's workmen will be allowed OPD treatment or First Aid treatment free of cost.
  - 14) The Contractor will also provide Insurance coverage to his workforce against risk like, accident and medical treatment and will also observe all rules & regulations under the Factories Act & Rules.
  - 15) The Contractor shall all times indemnify CCI against all losses, damages and claims for compensation under the provisions of the Workmen Compensation Act, or any other Law in force by or in respect of any workmen employed by him.
  - 16) The Contractor will ensure issue of employment cards to his workmen which is required to be produced while entering the Factory at Main Gate of CCI daily.
  - 17) Any notice proposed to be taken by the Contractor against the labours on account of misconduct/indiscipline or any other act will be initiated in consultation with CCI.
  - 18) The Contractor shall ensure payment of minimum wages to his workmen as per Minimum Wages Act of Govt. of Telangana at the present prevailing rates.
  - 19) Running Account Bills to be submitted to HOD (MECH) at every fortnight and payment shall be made within 07 days of receipt and acceptance of bills after adjustment of recoveries, if any. However, acquaintance for making payment to workmen for the previous month will be submitted along with subsequent bills.
  - 20) Necessary insurance should be arranged by tenderer as per CCI regulations.
  - 21) Contractors have to arrange required wear safety shoes, safety helmets and PPE for your workmen engaged in the factory.
  - 22) Contractors have to arrange the valid labour license as per the state & central Govt. Rules.
  - 23) ESIC provision has to be adhered by the contractor & payment of ESI submit to Govt., in the continuation timely & proof of the same has to be produced to CCI on monthly basis.
  - 24) Payment Authority: HOD (Fin) CCI TDO.
  - 25) All Contractor workmen should stay within the vicinity of Company premises and

without permission of the Engineers in-charge; none of your workmen should leave the premises.

- 26) Manpower strength has to be certified by section in-charge of mechanical department on daily basis.
- 27) Damage of company's properties, loss and compensation payable to contract employee / other persons on account of accidents etc., which may occur to your account and responsibility.
- 28) Contractors are fully responsible for discipline of your workmen inside the factory & lodging place.
- 29) After completion of the work, you have to clear the waste materials generated from the workshop. Otherwise, penalty will be imposed on you.
- 30) Security Deposit amount will be refunded after completion of defect liability period of Six months, on satisfactory performance, on production of Unconditional No Claim Certificate.
- 31) Before settlement of final payment, the Contractor has to deposit all the statutory records, registers, payment sheets, payment of compensation towards final payment to the labour and any other records with CCI after 03 months from the date of completion/termination of contract.
- 32) **E.M.D. of Rs. (13, 50,000/-) through RTGS is to be made as per clause no. 1.0 of Part-II GTC. The relevant details of CCI account to which the payment is to be credited is as mentioned below**
  - **Beneficiary Name: Cement Corporation of India Limited**
  - **Beneficiary Account Number : 72870200000040**
  - **IFSC Code : BARB0DBSCOP**
  - **Branch & Bank Name: Bank of Baroda , Core VI, SCOPE COMPLEX, NEW DELHI- 110003**
- 33) GST-TDS @ 2% will be deducted from Running Bill's as per GST Act.
- 34) PAN No. under I.T. Act has to be furnished by the Contractor before release of 1<sup>st</sup> R.A. Bill payment by CCI. TDS will be deducted as applicable.
- 35) In case of any dispute, the findings of G.M.,CCI-Tandur shall be final and binding to all and in case of any dis-satisfaction with the decision of G.M.,CCI-Tandur, it will be subject to jurisdiction of Civil Courts, Tandur, Vikarabad Dist., T.S. only.
- 36) A separate agreement on a non-judicial stamp paper has to be executed by the Contractor(s) to whom the work will be awarded on successful tenderer(s).
- 37) Tenderer are fully responsible for discipline of their workmen inside the factory & lodging place.
- 38) However, GST as applicable shall be payable for which GST Registration No. & copy of Registration Certificate to be provided by the party. In the absence of this information your firm will be treated as unregistered firm and your prices will be loaded accordingly.
- 39) GST-TDS @ 2% will be deducted at source as TDS on GST as applicable.
- 40) General: GST rates to be indicated. In case GST is mentioned as '0' in price bid, it shall be treated as inclusive and landed cost shall be arrived for comparison by debiting the

input credit from the quoted rates.

- 41) Income Tax PAN No. has to be intimated before making 1st payment by CCI & TDS will be deducted as per rules of IT.
- 42) GST will be reimbursed after making GST payment by the party & upload their GST invoice in their GST portal. Later Proof has to be submitted accordingly for the release of payment.



**PART- IV: TECHNICAL SPECIFICATIONS**

**Tender for “Manufacture, Supply, Erection, Hooking up, Commissioning and PG test of New Fly-ash Steel Silo of Cap 500MT with feeding, extraction and regulating system “.**

**ANNEXURE – XIII.1****1.0 PRESENT SYSTEM:****Brief description:**

Tandur Cement Factory(TCF) is a unit of Cement Corporation of India Limited (CCI), (A Govt. of India Enterprise) is a single kiln plant using dry process technology of 3000 TPD clinker.

Tandur cement factory is situated approximately 130 KM from Hyderabad via Vikarabad route. It is well connected with road and rail. From Tandur, railway station (Hyderabad to Mumbai main line) is 15 KM away.

Currently feeding Fly-ash to both the Cement mills through dump hopper connected to mill feeding belt.

**Soil investigation report of CCI Plant:**

- 1) Safe load bearing capacity of Black Cotton soil is 5.0 MT / M<sup>2</sup>. However, the foundation may be designed based on assumption that it will rest on Rock/Limestone of safe bearing capacity of 40.0 MT / M<sup>2</sup>.

Level of Soil: CCI Tandur plant is covered by Black Cotton soil layer of about (One) 1 Mtr. Average thickness over hard rock (Limestone strata).

**Existing Process & Equipment specifications details:**

There are two Cement Mills of cap 100 TPH each in operation. Both the mills are of open circuit type. Currently feeding Fly-ash to both the Cement mills through dump hopper connected to mill feeding belt.

**2.0 PROPOSED SYSTEM:**

New Fly-ash steel silo of cap 500 MT for feeding of Fly-ash to both the mills as per flow chart enclosed along with up-stream & downstream equipments.

**Expectation from party/vendor/supplier:**

Successful tenderer has to coordinate with the design consultant M/s. Strucon Consulting Pvt. Ltd. nominated by M/s. CCI & execute the works as per design data & drawings provided by the consultant. However Parties are expected to carry out any extra jobs / In addition to the scope of work which has not been mentioned in the scope of work arises during execution of work and required for the smooth operation of the Fly-ash feeding & extraction system without any additional charges as it is turnkey project.

Efforts have been made to give clarity to the parties/vendors/suppliers to extent possible. However, Interested parties/vendors/supplier should depute their representative to visit our site for physical inspection of the site for study of layout and required/necessary data collection, accordingly before submitting their offer for which all cooperation will be extended by us.

- a) Party should visit the site and study the site conditions for Manufacture, supply of components, Erection, Commissioning & hooking up with existing system.
- b) Process/GA Diagram & layout of proposed system along with process instrument details will be provided by M/s. CCI.
- c) Party should give the list of bought-out item by them and their supply just before the time of their erection duly approved by CCI.
- d) Tenderer should execute all the jobs related to Electrical & Instrumentation as per technical specifications provided by M/s. CCI.
- e) Minimum Hookup & commissioning time will be considered.
- f) Performance Guarantee/warranty for achieving scope of work.

Parties are requested to carry out anything extra / In addition to the scope of work which have not been covered and are essential for the proposed system without any extra cost.

### 3.0 Scope of Work

- 1.- Manufacture, Supply, Erection, Hooking up, Commissioning and PG test of New Fly-ash Steel Silo of Capacity 500MT with feeding , extraction & regulating system as per design specifications provided by consultant nominated by M/s. CCI.
2. Electrical and Instrumentation schemes and supply of the equipments as per requirement of tender.
3. Design data along with tentative drawings will be provided by M/s. CCI. However the successful bidder will submit the design & drawings considering the site conditions and incorporating minor changes, if any, which will be approved by CCI- TDO Unit.
4. Successful tenderer has to execute the works as per design provided by consultant M/s. Strucon Consulting Pvt. Ltd. nominated by M/s. CCI & along with Civil Contractor assigned by M/s. CCI for smooth execution of the works as per tender terms & conditions.
5. The civil foundation/ concrete work is in the scope of CCI however the final grouting of the equipments will be in the scope of successful tenderer.
6. Manufacturing, Supply of equipments as per BOQ enclosed in Part-IV technical specifications, Fabrication of structural steel silo, support structure & other allied plate & structural work is in tenderers scope.

#### Activity wise break up of total scope of works is as under:-

1. Installation of new Fly-ash steel silo of cap 500MT along with required up-stream & down-stream equipments. (Refer Annexure XIII.4)
2. Manufacture & Supply of equipments / components. (As per technical specifications enclosed in Part-IV).
3. Fabrication of all items related to tender (As per technical specifications enclosed in Part-IV).
4. Erection and commissioning of the equipments by the tenderer in coordination with the Civil contractor assigned by CCI for smooth erection work of silo.
5. Hooking up with the existing system.
6. Performance Guarantee Test.
7. The party has to coordinate with Director of Factories for this project related necessary permissions & approvals before execution of work.
8. Please refer to Annexure XIII.5.1 to Annexure XIII.5.8 for drawings of the proposed system.

The above activities may be taken up by one individual tenderer or by forming a consortium of two or more with overall responsibility resting with the leader of the consortium members who will fulfill the techno commercial terms & conditions of the tender and shall be responsible to CCI in all aspect of the tender.

The leader of the Consortium could be any party taking up work (i) Installation of new Steel Fly-ash silo ii) manufacturing, supply etc. iii) Fabrication of structural steel items (iv) Erection &

Commissioning (v) Hooking up works (vi) PG test.

**Sequence of activities and payments thereof:**

- a) Successful tenderer has to accept the order and sign the Agreement within a week's time.
- b) Submission of Bar chart, & Billing schedule within 1 month from the date of LOI.
- c) Review/Approval from CCI will be accorded within 15 days from date of submission and after having discussion / clarifications of points.
- d) Supply/ fabrication of sheet metal and structural steel for site fabrication of steel silo, chutes & other required items.
- e) Supply of bought out items of mechanical, Electrical & Instrumentation viz., fans and its motors, conveyors , panels ,MCC, cables etc.
- f) Erection of equipments in sequence after / along with Civil work. The party has to coordinate with M/s. Strucon Consulting Pvt. Ltd. nominated by M/s. CCI for all the interconnecting items b/w civil & other departments.
- g) Electrical and instrumentation work.
- h) Charging of control panels and simulation
- i) Hooking up with existing system & trial run and Performance Guarantee test.

The complete project is on Turnkey basis, from concept to commissioning.

**: SCOPE OF WORK ALONG WITH OTHER ALLIED DETAILS:-**

The scope of supply includes but not limited to the following items for the successful erection and commissioning of the Steel Fly-ash silo.

The Broad scope of work includes Manufacture, supply, Erection , commissioning of mechanical, electrical, Instrumentation and Controls with all required accessories with PG trial , feeding, extraction , regulating system & hook up with existing system of new Steel Fly-ash silo.

The technical specification and parameters given by us are only to give a broad view about the present and proposed system.

The supply portion consists of the following equipments accessories along with BOQ. (Any item left out in the list (BOQ) but required for the smooth, trouble free running of the system also form and part of scope and the same may be specifically mentioned in your offer).

1. Operator station (SCADA System) of Siemens make (Version: CEMAT V9.0) along with PC should be provided by tenderer for smooth operation of System.
2. Air compressor along with dryer & receiver tank (1W + 1S) of suitable capacity required for Purging of bag filters & other pneumatically operated equipments.

**Supply of the following items (Bought out items):**

- a) All equipments as per technical specifications (BOQ) provided in Part-IV Annexure-XIII.4. M.S.Steel should be from reputed make preferably SAIL/TATA/JINDAL.
- b) All required power, instrumentation and control cables with cable Trays and other required accessories for cable connection and etc.
- c) Suitable platforms with hand railing wherever necessary (For example: For level Indicators,

Rapping motor areas, Hopper bottom (ie) below air lock and conveyor system.) All platforms should have ladders (Step ladder / Monkey ladder).The type of the ladder as approved by CCI at drawing approval stage.(Any ladder more than 5mt should be staircase with suitable landings)

- d) All Fabricated/structural items should have one coat of Red Oxide and one coat of smoke Greysynthetic enamel paint for non insulated parts.
- e) As per Indian Electricity Rules standard earthing through separate earth pits for all electrical equipment should be done by successful tenderer.
- f) In the M.C.C. for each size /category of feeders, a spare feeder may be provided.
- g) Successful tenderer should submit all details regarding manufacture & supply of components required for installation of fly-ash silo.
- h) Any other equipments/accessories required for the smooth running of the system (will be in the scope of tenderer).

**Requirements:**

- 1) Insulation of the ducts & Equipments wherever required.
- 2) Welding electrodes make of L&T/ ADOR FON/D&H should be used.
- 3) Any other equipments/accessories required for the smooth running of the system (will be in the scope of tenderer).

**4.0 PLATFORMS:**

- i) Platforms & staircases suitable for the maintenance and operation of all the equipments shall be provided by the tenderer.
- ii) All platforms shall have staircases (not monkey ladders) for accessibility and hand railings for safety.

**5.0 BYPASS CHUTES:** Fabricated from MS Plates of thickness not less than 8 mm

## **6.0. DIVERTING VALVES / DAMPERS MANUAL / AUTO REMOTE:**

The diverting valves shall be manually operated, fitted with anti-friction bearings (SKF/FAG -MAKE) for smooth operation. Bush bearings shall not be acceptable.

## **7.0 CHUTES:**

All chutes (common chute, gravity chutes and inverted Y-chutes) shall be fabricated from wear resistant plate. The thickness of plates used for fabrication shall not be less than 8 mm.

## **8.0 GENERAL POINTS:**

The following shall be within the scope of the tenderer:

- i) All the modifications required to be carried out in the existing system, hooking up of the proposed system with the existing mechanical, electrical equipments and control system and removal of the existing equipments which come in the way of the proposed system.
- ii) All interconnecting chutes, ducting, piping etc. and also insulation of them wherever required.
- iii) Even though the scope of equipment supply is elaborated it is the responsibility of the tenderer to ensure that manufacture, supply, erection & commissioning is complete including auxiliaries, ducts, chutes, supports, dampers, expansion joints and any other items required for proper functioning of the proposed Systems on turnkey basis.
- iv) Four sets of Operational and Instructions manuals of all equipments, six prints (along with soft copy) of all drawings prepared for the system, fabrication and erection.
- v) One set of all reproducible of all the drawings prepared for the proposal to be supplied by the successful tenderer after approval and execution of the job by incorporating the changes made during erection and commissioning.
- vi) Manufacturing drawings (6 sets along with soft copy) of the following spares are to be supplied by the tenderer:-
  - a) Sizes of the bearings / bearing housings and couplings.
  - b) Technical specifications of filter bags / cages.
  - c) Technical specifications of compressor & dryer.
  - d) Dimensional general arrangement drawings with Civil, Mechanical, Electrical and Instrumentation schemes to be furnished.
- vii) Control panel and power distribution board for supply to all drives should be designed and engineered by the tenderer but shall be as per approval of CCI. Suitable local on/lockable off push buttons are to be provided for all the drives. 20% spare modules / feeders are to be provided / incorporated in the MCC with minimum one Extra feeder for every category.
- viii) All power control and instrumentation cables required for the system and earth conductors for grounding with main grid shall be of suitable size. Wherever cable trays are not existing, suitable cable trays shall be provided. Separate earth pits shall be provided for new installations.
- ix) Each floor of a shed to be suitably illuminated by providing energy efficient LED lamps of Philips / Osram / Bajaj make. PVC armored aluminum conductor cable size 2x2.5 / 4x2.5 sq.mm to be laid for this purpose and to be kept in the scope of supply / erection / commissioning. Besides, suitable miniature circuit breaker panel in dust & vermin proof. Lighting distribution board (LDB) to be provided / installed by the successful tenderer.
- x) For electrical instrumentation equipment and other related items, special conditions, over and above those given in the preceding Para's are given below :-

- xi) All the equipments are to be suitably mounted, assembled, aligned and inter- connected with various sections, checking of each components for satisfactory mechanical and electrical operation and cleaning of contacts, mounting of loose supplied components to their respective positions, setting of relays in accordance with the requirements, Mounting and properly wired of all converters, Isolators, Transmitters and Hooking up with the existing Siemens make DCS System.
- xii) Laying of LT control, instrumentation and special cables including supply / fabrication of all cable accessories such as junction boxes, indoor, outdoor end termination / straight through / tee joining kit for cables, cable gland, cable lugs, cable ferrules, rigid / flexible pipes, cable racks/ supports / trays etc. cable laying shall be as per approved schedule and shall be carried out in a neat and systematic manner with codified markings.
- xiii) Supply and erection of earthing station, mains and connections with all accessories for the proposed system including control arrangement. The work includes earthing of all drives, cables, power equipment and electrical boxes. The instrumentation panels and screened cables should be separately and effectively earthed. All work shall be carried out in accordance with Indian Electricity Rules and the code of practice as per Indian standards IS 3043.
  - a) Supply and erection of lighting system inside / outside sheds is under the scope of this order as per statutory requirement.
  - b) All erection and standard tests as per BIS and electricity regulations shall be carried out, documented and countersigned by the purchaser's representative, which shall be an integral part of the installation and commissioning work.
  - c) The successful tenderer shall provide all the drawings, layouts and relevant data for getting the statutory approval from the central electricity authorities as per rules in vogue
  - d) For laying of screened / shielded cables separate cable trays shall be provided.
  - e) Software engineer / programmer will stay for 01 month after commissioning of the System for any modification / additional programming needed as per process requirement.

## **9.0 INSULATION:**

- i) The tenderer shall use lightly resin bonded rock wool mattresses having density of 100 kg/m<sup>3</sup> (minimum) with one side G.I. wire netting of ¾" x 24 SWG as insulation material confirming to IS: 8183.
- ii) 22 SWG plain aluminum sheet shall be used as cladding material over the insulation.
- iii) All ancillary material to be used shall be of best commercial quality.
- iv) The work involves cleaning of the ducts to be insulated and after cleaning of areas.
- v) Providing of 10G G.I. sheets lugs to hold the insulation mattress in position for equipments of higher diameter ducts.
- vi) Providing & fixing of MS Spacer rings made out of 25 x 3 mm MS Flat to hold the sheet metal cladding in position for equipments and pipe lines above 4" diameter only.
- vii) Providing & fixing of LRB Mattresses backed with one side GI Wire netting of size ¾" x 24 SWG in required thickness and stitching the joints with GI lacing wire.
- viii) Providing & fixing of 22 SWG Plain aluminum sheet with proper grooves and overlaps and held in position by means of GI self-tapping screws and sealing the sheet joints using suitable sealant. Further, the cladding shall be secured by means of Aluminum Band 20mm x 22 G at 45mm c/c.

- ix) The contractor has to make all arrangements, including scaffolding arrangement, tools & tackles, required manpower for carrying out the jobs.
- x) At the actual site, surfaces have to be cleaned with wire brush and are to be repaired as and where required before putting the insulation. Removal of insulation material wherever required (as per site condition) is in tenderers scope.

**10.0 Electrical/Instrumentation: Scope of Supply and work:**

- i) The tenderer has to get approval of CEA.
- ii) Supply, Erection and Commissioning of Remote I/O Panel and laying of power cable, control supply cables, communication cable (Profibus), cable glands, lugs, ferrules etc. shall be in the tenderer scope.
- iii) As all the DOL, RDOL drives, field instruments such as level transmitter(4-20mA output), pressure/draft transmitters(4-20mA output), solid flow feeder, Dosing valve operation, Bin weighing system controls, Zero speed monitor, current transmitters(4-20 mA output) for above 2 HP drives, pressure switches and dust collector solenoid valves operation are to be monitored and controlled from Central control room through SCADA station therefore the tenderer has to supply the separate Remote IO panel duly fitted and wired with Siemens make DI/DO, AI/AO, Power supply and Communication(profibus) modules compatible with the existing DCS System of Simatic Manager S7(Wincc SCADA) supplied by Siemens Private Limited system. The remote I/O panel is to be integrated/Hooked up with the existing DCS system.
- iv) Engineering and Operator(SCADA) station(2 no's) Loaded with Siemens make SimaticManager with Winc software to be supplied by the tenderer.
- v) Logic and Graphics development in Engineering and SCADA station is to be done by the supplier.
- vi) The number of DI/DO and AI/AO in the remote I/O panel should be 20 % extra than the actual requirement to control the complete system from the central control station. The actual number of DI/DO and AI/AO will be decided at the time engineering.

**Make of the equipment(Instrumentation)**

- |   |                                 |
|---|---------------------------------|
| 1. Continues Silo level transmitter (4-20mA)        | - Siemens/Rosemount/Thoshinwal. |
| 2. Pressure/Draft and current transmitter (4-20 mA) | - Siemens/Rosemount/Thoshinwal  |
| 3. Solid Flow Feeder                                | - Schenck Process               |
| 4. Dosing valves/Motorized gate                     | - Schenck Process               |
| 5. Bin weighing system                              | - Schenck Process               |
| 6. Pressure switches                                | - indfoss                       |
| 7. Desktop Computers                                | - Dell/HP                       |



### CCI TANDUR: EQUIPMENT LIST WITH TECHNICAL SPECIFICATIONS FOR NEW FLY-ASH SILO

| S.No | Eqp. No     | Equipment Description                  | Specification  | Capacity   | Qty.  | KW /RPM | Remarks  |
|------|-------------|--|--|--|-------|---------|--|
| 1    | 532 BF 01   | Bag Filter on Top of fly-ash silo      | Pulsejet bag filter for fly-ash dust, Air to cloth ratio 1.2 ; inlet dust load 50 gm/m <sup>3</sup> , outlet dust load < 30 mg/Nm <sup>3</sup>                                 | 8000m <sup>3</sup> /hr                               | 1     | -       |  |
| 2    | 532 FN01    | Bag filter fan on top of fly-ash silo  | Type- Centrifugal Backward curve blades, inlet static pressure- 300mmwg  | 9200m <sup>3</sup> /hr                               | 1     | 15/1440 | Directly coupled, mounted on anti vibration pads   |
| 3    | 532 RF01    | Rotary feeder under bag filter hopper  | 250mm dia, adjustable vanes for wear, directly coupled geared motor  |  | 1     | 0.55    |  |
| 4    | 532 SB 01   | Fly-ash Silo                           | MS construction, dry fly-ash @ 0.7 T/m <sup>3</sup> , 9 m dia  | 500 MT   | 1     | -       | Fabrication drawings shall be provided             |
| 5    | 532 LI01    | High Level indicator                   | Capacitance Type with polyethylene coated bar probe  |  | 1     |         |  |
| 6    | 532 AV01    | Air balance Valve with mounting socket | For limiting over pressure and vacuum in the silo  |  | 1     |         |  |
| 7    | 532 SP01    | Silo Pilot                             | Radio Frequency type level measuring device for intermittent level indication & digital display of level in silo.  |  | 1     |         |  |
| 8    | 532 AE01    | Aeration pads                          | 200 mm open air slides mounted on conical bottom portion of silo, Special Synthetic fabric suited for 140 Deg C with air permeability of 400m <sup>3</sup> /m <sup>2</sup> /hr |  | 1 set |         | aeration pads to cover min 66% of bottom cone area |
| 9    | 532 BL01-02 | Roots Blower for Silo aeration         | Twin or tri lobe blowers with suction filter, suction and discharge silencers  | 450m <sup>3</sup> / hr @ 0.65 bar discharge pressure | 2     | 15/1440 | 1 working + 1 standby                              |

|    |                |  |   |   |      |         |                       |
|----|----------------|--|---|---|------|---------|-----------------------|
| 10 | 532AH<br>01-02 | Air heater for roots blower                  |   |   | 2    | 2.2     |                       |
| 11 |                | Air Piping header from blower to silo        | MS pipe with necessary elbows, flanges, gaskets, throttle valves and accessories                  |   | LS   |         |                       |
| 12 |                | Pneumatic Butter fly valves                  | In air pipe line with solenoid valves and limit switches  |   | LS   |         |                       |
| 13 | 532<br>CP01-02 | Air Compressor for Fly-ash unloading         | Screw compressor non lubricated type for bulk unloading rate of min 120 TPH                       | 20m <sup>3</sup> / min @ 4.5 bar discharge pressure | 2    | 90/1440 | 1 working + 1 standby |
| 14 | 532<br>AR01    | Air receiver                                 |   | 3 m <sup>3</sup>                                    | 1    |         |                       |
| 15 |                | Air Piping                                   | MS ERW pipe with flanges,gaskets, fittings, valves as applicable                                  |   | LS   |         |                       |
| 16 |                | Control Air piping                           | For operation of pneumatic gates, solenoid valves etc with flanges, elbows, gaskets, hardware etc |   | LS   |         |                       |
| 17 |                | Quick release coupling with Hose             | suitable diameter for air line, apprx 50 or 65 NB, minimum 5 m length                             |   | 2    |         |                       |
| 18 |                | Quick release coupling with Hose             | suitable diameter for air line, apprx 150 NB, minimum 5 m length                                  |   | 2    |         |                       |
| 19 |                | Long Radius Bend with Cast Basalt lining     | 150 NB, 90 Deg for fly-ash transport  |   | 4    |         |                       |
| 20 |                | Target box-on top of fly ash Silo            | MS  |   | 2    |         | 2 sets                |
| 21 |                | Transport Pipe for Fly-ash Transport         | 150 NB sch 40 seamless pipe   |   | 80 M |         | 2 sets                |
| 22 |                | Piping for compressed air                    | 50 or 65 NB, Heavy grade ERW pipe   |   | 20 M |         |                       |
| 23 |                | Pipe coupling ,pipe gaskets and hardware etc | 50 or 65 NB airline   |   | LS   |         |                       |
| 24 |                | Pipe coupling ,pipe gaskets and hardware etc | 150 NB fly-ash transport pipe line  |   | LS   |         |                       |

|    |                 |   |   |        |       |      |  |
|----|-----------------|---|---|--------|-------|------|--|
| 25 | 532 SG<br>01-02 | Manual Cut off gate<br>for silo extraction    | Size 200 mm, with<br>matching flanges. MS<br>Construction with spindle<br>hand wheel inclusive of<br>gasket and fasteners   | 45 TPH | 2     | -    |  |
| 26 | 532 PG<br>01-02 | Pneumatic Cut off gate<br>for silo extraction | Size 200 mm, with<br>matching flanges. MS<br>Construction with<br>pneumatic cylinder<br>gaskets<br>and fasteners  | 45 TPH | 2     | -    |  |
| 27 | 532 DZ<br>01-02 | Motorised Flow<br>Control gate                | Size 200 mm, with<br>matching flanges,<br>regulating type 0-100%<br>outflow   | 45 TPH | 2     | 0.37 |  |
| 28 | 532 AS<br>01-02 | Airslide discharge<br>spout                   | Width 200 mm, 10 deg<br>slope, with special<br>synthetic fabric and<br>flexible<br>connection   | 45 TPH | 2     | -    |  |
| 29 | 532 BI<br>01-02 | Control bin                                   | MS construction<br>mounted on load cells<br>with aerated<br>bottom  | 20 T   | 2     |      |  |
| 30 | 532 LI<br>02-03 | High Level indicator for<br>control bins      | Capacitance Type with<br>polyethylene coated bar<br>probe   |        | 2     |      |  |
| 31 | 532 LC<br>01-02 | Load Cells                                    | 1 line +2 dummy,<br>Compression type with<br>digital indicator, junction<br>box and cables for<br>monitoring flow of<br>material<br>to mill   | 25 T   | 3     |      |  |
| 32 | 532<br>AE02-03  | Aeration pads                                 | 200 mm open airslides<br>mounted on conical<br>bottom portion of silo,<br>Special Synthetic fabric<br>suited for 140 Deg C with<br>air permeability of<br>400m <sup>3</sup> /m <sup>2</sup> /hr |        | 1 set |      |  |
| 33 | 532 SG<br>03-04 | Manual Cut off gate<br>for bin extraction     | Size 200 mm, with<br>matching flanges. MS<br>Construction with spindle<br>hand wheel inclusive of<br>gasket and fasteners   | 45 TPH | 2     |      |  |
| 34 | 532 PG<br>03-04 | Pneumatic Cut off gate<br>for bin extraction  | Size 200 mm, with<br>matching flanges. MS<br>Construction with<br>pneumatic cylinder<br>gaskets   | 45 TPH | 2     |      |  |

|    |                 |  |   |  |    |        |  |
|----|-----------------|--|---|--|----|--------|--|
|    |                 |  | and fasteners   |  |    |        |  |
| 35 | 532 DZ<br>03-04 | Motorised Flow<br>Control gate for bin<br>extraction   | Size 200 mm, with<br>matching flanges,<br>regulating type 0-100%<br>outflow   | 45 TPH   | 2  | 0.37   |  |
| 36 | 532 AS<br>03-04 | Airslide discharge<br>spout  | Width 200 mm, 10 deg<br>slope, with special<br>synthetic fabric and<br>flexibleconnection   | 45 TPH   | 2  |        |  |
| 37 | 532<br>BL03     | Roots Blower for bin<br>aeration   | Twin or tri lobe blowers<br>with suction filter,<br>suctionand discharge<br>silencers   | 300m <sup>3</sup> / hr<br>@ 0.5 bar<br>discharge<br>pressure | 1  | 9/1440 |  |
| 38 | 532AH<br>03     | Air heater for roots<br>blower   |   |  | 1  | 2.2    |  |
| 39 |                 | Air Piping headerfrom<br>blower to control bin   | MS pipe with necessary<br>elbows, flanges, gaskets,<br>throttle valves and<br>accessories   |  | LS |        |  |
| 40 |                 | Pneumatic Butter fly<br>valves   | In air pipe line with<br>solenoid valves and limit<br>switches  |  | LS |        |  |
| 41 | 532<br>FM01-02  | Solid flow meter   | Impact type for<br>calibrationof dry fly-ash,<br>accuracy +/-1% includes<br>microprocessor based<br>control system                        | 45TPH  | 2  |        |  |
| 42 | 532 AS<br>05    | Airslide from<br>flowmeter 532FM01to<br>Divertor 532 DB01  | Width 200 mm, 10 deg<br>slope, length 2600 mm<br>with special synthetic<br>fabric and flexible<br>connection along with<br>short supports | 45 TPH   | 1  |        |  |
| 43 | 532 AS<br>06    | Airslide discharge<br>spout from Divertor<br>532 DB01 to mill no1<br>feeding airslide<br>532 AS 11 | Width 200 mm, 10 deg<br>slope, with special<br>synthetic fabric and<br>flexibleconnection   | 45 TPH   | 1  |        |  |
| 44 | 532 AS<br>07    | Airslide from Divertor<br>532 DB01 to mill no 2<br>feedingairslide 532 AS<br>14                    | Width 200 mm, 10 deg<br>slope, length 800 mm<br>withspecial synthetic<br>fabric andflexible<br>connection along<br>with short supports    | 45 TPH   | 1  |        |  |

|    |                 |  |   |          |    |          |  |
|----|-----------------|--|---|----------|----|----------|--|
| 45 | 532 DB<br>01    | Airslide Diversion box with aerated bottom for AS 06 & 07                              | 500 dia with 1 inlet for 200mm wide air slide and 2outlets for 200 mm wide air slide  | 45 TPH   | 1  |          |  |
| 46 | 532 AB<br>01    | Air slide blower for AS 05-07 and DB 01  | High Pressure Centrifugal fan, 63 mbar static pressure, with air intake filter, throttle valve and directly driven design bearing mounted | 5 m3/min | 1  | 3.7/3000 |  |
| 47 |                 | Air piping from blower to air slides   | MS pipe with accessories and throttle valves  |          | LS |          |  |
| 48 | 532 PG<br>05-06 | Pneumatic Cut offgate at Diversion box 532 DB 01                                       | Size 200 mm, with matching flanges. MS Construction with pneumatic cylinder gaskets and fasteners   | 45 TPH   | 2  |          |  |
| 49 | 532 AS<br>08    | Airslide from flowmeter 532FM02to Divertor 532 DB02                                    | Width 200 mm, 10 deg slope, length 3000 mm with special synthetic fabric and flexible connection along with short supports                | 45 TPH   | 1  |          |  |
| 50 | 532 AS<br>09    | Airslide from Divertor 532 DB02 to mill no 1 feedingairslide 532 AS 11                 | Width 250 mm, 10 deg slope, length 1000 mm with special synthetic fabric and flexible connection along with short supports                | 45 TPH   | 1  |          |  |
| 51 | 532 AS<br>10    | Airslide discharge spout from Divertor 532 DB02 to mill no2 feeding airslide 532 AS 14 | Width 250 mm, 10 deg slope, with special synthetic fabric and flexibleconnection  | 45 TPH   | 1  |          |  |
| 52 | 532 DB<br>02    | Airslide Diversion box with aerated bottom for AS 09 &10                               | 500 dia with 1 inlet for 250mm wide air slide and 2outlets for 250 mm wide air slide  | 45 TPH   | 1  |          |  |
| 53 | 532 AB<br>02    | Airslide blower for AS 08-09 and DB 02   | High Pressure Centrifugal fan, 63 mbar static pressure, with air intake filter, throttle valve and directly driven design bearing mounted | 5 m3/min | 1  | 3.7/3000 |  |
| 54 |                 | Air piping from blower to airslides  | MS pipe with accessories and throttle valves  |          | LS |          |  |

|    |                 |   |   |        |   |  |  |
|----|-----------------|---|---|--------|---|--|--|
| 55 | 532 PG<br>07-08 | Pneumatic Cut offgate<br>at Diversion box 532<br>DB 01    | Size 200 mm, with<br>matching flanges. MS<br>Construction with<br>pneumatic cylinder<br>gaskets<br>and fasteners                          | 45 TPH | 2 |  |  |
| 56 | 532 AS<br>08    | Airslide from<br>flowmeter 532FM02to<br>Divertor 532 DB02 | Width 200 mm, 10 deg<br>slope, length 3000 mm<br>with special synthetic<br>fabric and flexible<br>connection along with<br>short supports | 45 TPH | 1 |  |  |

|    |                 |  |  |          |    |          |  |
|----|-----------------|--|--|----------|----|----------|--|
| 57 | 532 AS<br>09    | Airslide from Divertor<br>532 DB02 to mill no 1<br>feedingairslide 532 AS<br>11                    | Width 200 mm, 10 deg<br>slope, length 1000 mm<br>with special synthetic<br>fabric and flexible<br>connection along with<br>short supports                | 45 TPH   | 1  |          |  |
| 58 | 532 AS<br>10    | Airslide discharge<br>spout from Divertor<br>532 DB02 to mill no2<br>feeding airslide<br>532 AS 14 | Width 200 mm, 10 deg<br>slope, with special<br>synthetic fabric and<br>flexibleconnection  | 45 TPH   | 1  |          |  |
| 59 | 532 DB<br>02    | Airslide Diversion box<br>with aerated bottom<br>for AS 09 &<br>10                                 | 500 dia with 1 inlet for<br>200mm wide air slide and<br>2outlets for 200 mm<br>wide<br>air slide   | 45 TPH   | 1  |          |  |
| 60 | 532 AB<br>02    | Airslide blower for AS<br>08-09 and DB 02  | High Pressure Centrifugal<br>fan, 63 mbar static<br>pressure, with air intake<br>filter, throttle valve and<br>directly driven design<br>bearing mounted | 5 m3/min | 1  | 3.7/3000 |  |
| 61 |                 | Air piping from blower<br>to airslides   | MS pipe with accessories<br>and throttle valves  |          | LS |          |  |
| 62 | 532 PG<br>07-08 | Pneumatic Cut offgate<br>at Diversion box 532<br>DB 01   | Size 200 mm, with<br>matching flanges. MS<br>Construction with<br>pneumatic cylinder<br>gaskets<br>and fasteners   | 45 TPH   | 2  |          |  |
| 63 | 532 AS<br>11    | Air slide from 532AS<br>06 & 09 to<br>Diverter 532 DB03 for<br>mill no 1 feeding                   | Width 200 mm, 10 deg<br>slope, length 7200 mm<br>with special synthetic<br>fabric and flexible<br>connection along with<br>short supports                | 45 TPH   | 1  |          |  |

|    |                 |  |  |          |    |          |  |
|----|-----------------|--|--|----------|----|----------|--|
| 64 | 532 AB<br>03    | Airslide blower for AS<br>532 AS 11 and DB<br>03                                 | High Pressure Centrifugal<br>fan, 63 mbar static<br>pressure, with air intake<br>filter, throttle valve and<br>directly driven design<br>bearing mounted | 8 m3/min | 1  | 3.7/3000 |  |
| 65 |                 | Air piping from blower<br>to airslides   | MS pipe with accessories<br>and throttle valves  |          | LS |          |  |
| 66 | 532 DB<br>03    | Airslide Diversion box<br>with aerated bottom<br>for AS 12 &13                   | 500 dia with 1 inlet for<br>200mm wide air slide and<br>2outlets for 200 mm<br>wide air slide  | 45 TPH   | 1  |          |  |
| 67 | 532 PG<br>09-10 | Pneumatic Cut offgate<br>at Diversion box 532<br>DB 03                           | Size 200 mm, with<br>matching flanges. MS<br>Construction with<br>pneumatic cylinder<br>gaskets<br>and fasteners   | 45 TPH   | 2  |          |  |
| 68 | 532 AS<br>12    | Airslide from Divertor<br>532 DB03 to cement<br>mill no 1inlet feeding           | Width 200 mm, 10 deg<br>slope, length 6900 mm<br>with special synthetic<br>fabric and flexible<br>connection along with<br>short supports                | 45 TPH   | 1  |          |  |
| 69 | 532 AB<br>04    | Airslide blower forAS<br>532 AS 12   | High Pressure Centrifugal<br>fan, 63 mbar static<br>pressure, with air intake<br>filter, throttle valve and<br>directly driven design<br>bearing mounted | 8 m3/min | 1  | 3.7/3000 |  |
| 70 |                 | Air piping from blower<br>to air slides  | MS pipe with accessories<br>and throttle valves  |          | LS |          |  |
| 71 | 532 AS<br>14    | Air slide from 532AS<br>07 & 10 to<br>Diverter 532 DB04 for<br>mill no 2 feeding | Width 200 mm, 10 deg<br>slope, length 7900 mm<br>with special synthetic<br>fabric and flexible<br>connection along with<br>short supports                | 45 TPH   | 1  |          |  |
| 72 | 532 AB<br>06    | Airslide blower for AS<br>532 AS 14 and DB<br>04                                 | High Pressure Centrifugal<br>fan, 63 mbar static<br>pressure, with air intake<br>filter, throttle valve and<br>directly driven design<br>bearing mounted | 8 m3/min | 1  | 3.7/3000 |  |
| 73 |                 | Air piping from blower<br>to airslides   | MS pipe with accessories<br>and throttle valves  |          | LS |          |  |

|    |                 |   |   |           |    |          |  |
|----|-----------------|---|---|-----------|----|----------|--|
| 74 | 532 DB<br>04    | Airslide Diversion box with aerated bottom for AS 15 &16                          | 500 dia with 1 inlet for 200mm wide air slide and 2outlets for 200 mm wide air slide  | 45 TPH    | 1  |          |  |
| 75 | 532 PG<br>11-12 | Pneumatic Cut offgate at Diversion box 532 DB 04                                  | Size 200 mm, with matching flanges. MS Construction with pneumatic cylinder gaskets and fasteners   | 45 TPH    | 2  |          |  |
| 76 | 532 AS<br>15    | Airslide from Divertor 532 DB04 to cement mill no 2inlet feeding                  | Width 200 mm, 10 deg slope, length 6900 mm with special synthetic fabric and flexible connection along with short supports                | 45 TPH    | 1  |          |  |
| 77 | 532 AB<br>07    | Airslide blower forAS 532 AS 12   | High Pressure Centrifugal fan, 63 mbar static pressure, with air intake filter, throttle valve and directly driven design bearing mounted | 8 m3/min  | 1  | 3.7/3000 |  |
| 78 |                 | Air piping from blower to airslides   | MS pipe with accessories and throttle valves  |           | LS |          |  |
| 79 | 532 BF<br>02    | Bag Filter for control bin and airslide venting                                   | Pulsejet bag filter for fly-ash dust, Air to cloth ratio 1.2 ; inlet dust load 50 gm/m3, outlet dust load < 30 mg/Nm3                     | 5000m3/hr | 1  | -        |  |
| 80 | 532<br>FN02     | Bag filter fan for 532 BF02   | Type- Centrifugal Backwardcurve blades, inlet static pressure-300mmwg   | 5750m3/hr | 1  | 9.3/1440 | Directly coupled, mounted on anti vibration pads |
| 81 | 532<br>RF01     | Rotary feeder under bagfilter hopper  | 250mm dia, adjustable vanes for wear, directly coupled geared motor   |           | 1  | 0.55     |  |
| 82 | 532 AS<br>13    | Airslide from Divertor 532 DB03 to cement mill no 1outlet Bucket elevator feeding | Width 200 mm, 10 deg slope, length 20400 mm with special synthetic fabric and flexible connection along with short supports               | 45 TPH    | 1  |          |  |



|    |           |  |   |  |    |          |                       |
|----|-----------|--|---|--|----|----------|-----------------------|
| 83 | 532 AB 05 | Airslide blower for AS 532 AS 13   | High Pressure Centrifugal fan, 63 mbar static pressure, with air intake filter, throttle valve and directly driven design bearing mounted | 20 m <sup>3</sup> /min                           | 1  | 7.5/3000 |                       |
| 84 |           | Air piping from blower to airslides  | MS pipe with accessories and throttle valves  |  | LS |          |                       |
| 85 | 532 AS 16 | Airslide from Divertor 532 DB04 to cement mill no 2 outlet Bucket elevator feeding | Width 200 mm, 10 deg slope, length 20400 mm with special synthetic fabric and flexible connection along with short supports               | 45 TPH   | 1  |          |                       |
| 86 | 532 AB 08 | Airslide blower for AS 532 AS 16   | High Pressure Centrifugal fan, 63 mbar static pressure, with air intake filter, throttle valve and directly driven design bearing mounted | 20 m <sup>3</sup> /min                           | 1  | 7.5/3000 |                       |
| 87 |           | Air piping from blower to airslides  | MS pipe with accessories and throttle valves  |  | LS |          |                       |
| 88 | 532 CP03  | Air Compressor for bag filter and instruments                                      | Screw compressor non lubricated type  | 1m <sup>3</sup> / min @ 8 bar discharge pressure | 2  | 9.3/1440 | 1 working + 1 standby |
| 89 | 532 DR 01 | Air dryer for compressed air   | Oil free with max moisture 0.1gm/NM <sup>3</sup>  | 1m <sup>3</sup> / min @ 8 bar discharge pressure | 1  | 2.2      |                       |
| 90 | 532 AR 02 | Air receiver   | MS suited for max 10 bar pressure   | 0.2 m <sup>3</sup>                               | 1  |          |                       |

### **ELECTRICAL DRIVE LIST & FEEDER LIST**

| CCI TANDUR: FEEDER LIST WITH TECHNICAL SPECIFICATIONS FOR NEW FLY-ASH SILO |         |                                  |                                 |        |             |          |           |      |     |              |            |         |
|--|---------|----------------------------------|---------------------------------|--------|-------------|----------|-----------|------|-----|--------------|------------|---------|
| S.No   | Eqp. No | Feeder Description               | KW / RPM /Specification details | Rating | Feeder Type | Quantity | Motor FLC | MCCB | OLR | Back up Fuse | Cable Size | Remarks |
| 1  |         | Incomer for New Fly Ash Silo MCC |                                 | 1600 A | ACB         |          |           |      |     |              |            |         |

|    |            |   |                  |       |            |   |       |       |           |       |                   |  |                     |
|----|------------|---|------------------|-------|------------|---|-------|-------|-----------|-------|-------------------|--|---------------------|
| 2  | 532 BF 01  | Bag Filter Control Panel Outgoing           |                  | 16 A  | MCCB       | 1 |       | 16A   |           |       |                   |  |                     |
| 3  | 532 FN01   | Bag filter fan O/G on top of fly-ash silo   | 15 KW / 1440 RPM |       | DOL        | 1 | 24 A  | 63A   | 22-30 A   | 50 A  | 3c x 10 sq.mm AL  |  |                     |
| 4  | 532 RF01   | Rotary feeder O/G under bagfilter hopper    | 0.55 KW          |       | DOL        | 1 | 0.9A  | 16A   | 0.5-2.5 A | 4.0 A | 3c x 2.5 sq.mm CU |  |                     |
| 5  | 532 SB 01  | Fly-ash Silo Control Panel O/G Spare        |                  | 16 A  | MCCB       | 1 | -     | 16 A  |           |       |                   |  |                     |
| 6  | 532 SP01   | Spare 16A                                   |                  | 16 A  | MCCB       | 1 |       | 16 A  |           |       |                   |  | Instrument          |
| 7  | 532 CTR 01 | Control Supply O/G 1                        |                  | 32 A  | MCCB       | 1 |       | 32 A  |           |       |                   |  | Control Transformer |
| 8  | 532 SP02   | Spare 32 A                                  |                  | 32 A  | MCCB       | 1 |       | 32 A  |           |       |                   |  | Instrument          |
| 9  | 532 BL01   | Roots Blower O/G for Silo aeration          | 15 KW / 1440 RPM |       | DOL        | 1 | 24 A  | 63A   | 22-30 A   | 50 A  | 3c x 10 sq.mm AL  |  |                     |
| 10 | 532 BL02   | Standby Roots Blower O/G for Silo aeration  | 15 KW / 1440 RPM |       | DOL        | 1 | 24 A  | 63A   | 22-32 A   | 50 A  | 3c x 10 sq.mm AL  |  |                     |
| 11 | 532AH 01   | Air heater O/G for roots blower             | 2.2 KW           | 32 A  | SFU / MCCB | 1 |       | 32A   |           |       | 2.5 sq mm CU      |  | Air Heater          |
| 12 | 532AH 02   | Air heater O/G for roots blower             | 2.2 Kw           | 32 A  | SFU / MCCB | 1 |       | 32A   |           |       | 2.5 sq mm CU      |  | Air Heater          |
| 13 | 532 CP01   | Air Compressor O/G 1 for Fly- ash unloading | 90 KW / 1440 RPM | 250 A | HDOL       | 1 | 146 A | 250 A | 140-170 A | 250 A | 3c x 150 sq.mm AL |  |                     |

|    |            |  |                   |       |      |   |       |       |           |       |                   |                   |
|----|------------|--|-------------------|-------|------|---|-------|-------|-----------|-------|-------------------|-------------------|
| 14 | 532 CP02   | Air Compressor O/G 2 for Fly-ash unloading         | 90 KW / 1440 RPM  | 250 A | HDOL | 1 | 146 A | 250 A | 140-170 A | 250 A | 3c x 150 sq.mm AL |                   |
| 15 | 532 CP03-1 | Air compressor O/G for Control air                 | 9.3 KW / 1440 RPM |       | DOL  | 1 | 19A   | 63 A  | 14-20A    | 32A   | 3c x 6.0 sq.mm AL |                   |
| 16 | 532 CP03-2 | Air compressor O/G for Control air                 | 9.3 KW / 1440 RPM |       | DOL  | 1 | 19A   | 63 A  | 14-20A    | 32A   | 3c x 6.0 sq.mm AL |                   |
| 17 | 532 DZ01   | Motorized Flow Control gate O/G1                   | 0.37 KW / ### RPM |       | RDOL | 1 | 0.6 A | 16A   | 0.5-2.5A  | 4.0 A | 3c x 2.5 sq.mm AL |                   |
| 18 | 532 DZ02   | Motorized Flow Control gate                        | 0.37 KW / ### RPM |       | RDOL | 1 | 0.6 A | 16A   | 0.5-2.5A  | 4.0 A | 3c x 2.5 sq.mm AL |                   |
| 19 | 532 SP03   |  |                   | 16    | MCCB | 1 |       | 16A   |           |       |                   | Instrument /spare |
| 20 | 532 SP04   |  |                   | 16    | MCCB | 1 |       | 16A   |           |       |                   | spare             |
| 21 | 532 LC01   | Load Cells CP O/G                                  |                   | 16    | MCCB | 1 |       | 16A   |           |       |                   | 25 T              |
| 22 | 532 LC02   | Load Cells CP O/G                                  |                   | 16    | MCCB | 1 |       | 16A   |           |       | Instrument        |                   |
| 23 | 532 DZ03-  | Motorized Flow Control gate O/G for bin extraction | 0.37 KW / ### RPM |       | RDOL | 1 | 0.6 A | 16A   | 0.5-2.5A  | 4.0 A | 3c x 2.5 sq.mm AL |                   |
| 24 | 532 DZ04   | Motorized Flow Control gate O/G for bin extraction | 0.37 KW / ### RPM |       | RDOL | 1 | 0.6 A | 16A   | 0.5-2.5A  | 4.0 A | 3c x 2.5 sq.mm AL |                   |
| 25 | 532 BL03   | Roots Blower O/G for bin aeration                  | 9.0 KW / 1440 RPM |       | DOL  | 1 | 16 A  | 63A   | 14-20 A   | 32 A  | 3c x 6.0 sq.mm AL |                   |

|    |          |   |                   |      |      |   |       |      |        |      |                   |            |
|----|----------|---|-------------------|------|------|---|-------|------|--------|------|-------------------|------------|
| 26 | 532AH03  | Air heater O/G for roots blower                         | 2.2 KW            | 32 A | MCCB | 1 |       | 32A  |        |      |                   | Heater     |
| 27 | 532 FM01 | Feeder for Solid flow meter CP O/G 1                    |                   | 16 A | MCCB | 1 |       | 16A  |        |      |                   | Instrument |
| 28 | 532 FM02 | SFU for Solid flowmeter CP O/G 2                        |                   | 16 A | MCCB | 1 |       | 16A  |        |      |                   | Instrument |
| 29 | 532 AB01 | Airslide blower for AS 05-07 and DB 01 O/G              | 3.7 KW / 1440 RPM |      | DOL  | 1 | 6.0 A | 32A  | 6-12 A | 20 A | 3c x 6.0 sq.mm AL | Spare      |
| 30 | 532 AB02 | Air slide blower for AS 08-09 and DB 02 O/G             | 3.7 KW / 1440 RPM |      | DOL  | 1 | 6.0 A | 32A  | 6-12 A | 20 A | 3c x 6.0 sq.mm AL | Spare      |
| 31 | 532 AB03 | Air slide blower for AS 532 AS 11 and DB 03 O/G         | 3.7 KW / 1440 RPM |      | DOL  | 1 | 6.0 A | 32A  | 6-12 A | 20 A | 3c x 6.0 sq.mm AL |            |
| 32 | 532 AB04 | Air slide blower for AS 532 AS 12 O/G                   | 3.7 KW / 1440 RPM |      | DOL  | 1 | 6.0 A | 32A  | 6-12 A | 20 A | 3c x 6.0 sq.mm AL |            |
| 33 | 532 AB06 | Air slide blower for AS 532 AS 14 and DB 04             | 3.7 KW / 1440 RPM |      | DOL  | 1 | 6.0 A | 32A  | 6-12 A | 20 A | 3c x 6.0 sq.mm AL |            |
| 34 | 532 AB07 | Air slide blower for AS 532 AS 12 O/G                   | 3.7 KW / 1440 RPM |      | DOL  | 1 | 6.0 A | 32A  | 6-12 A | 20 A | 3c x 6.0 sq.mm AL |            |
| 35 | 532 BF02 | Bag Filter CP O/G for control bin and air slide venting |                   | 32   | MCCB | 1 | -     | 32 A |        |      |                   |            |
| 36 | 532 FN02 | Bag filter fan O/G for 532 BF02                         | 9.3 KW / 1440 RPM |      | DOL  | 1 | 19A   | 63 A | 14-20A | 32A  | 3c x 6.0 sq.mm    |            |

|    |              |   |                         |       |      |   |        |       |               |       |                            |        |
|----|--------------|---|-------------------------|-------|------|---|--------|-------|---------------|-------|----------------------------|--------|
|    |              |   |                         |       |      |   |        |       |               |       | AL                         |        |
| 37 | 532 AB<br>05 | Airslide<br>blower forAS<br>532 AS<br>13 O/G  | 7.5 KW /<br>3000<br>RPM |       | DOL  | 1 | 12.1 A | 63 A  | 10-<br>16A    | 25 A  | 3c x<br>6.0<br>sq.mm<br>AL | Spare  |
| 38 | 532 AB<br>08 | Air slide<br>blower forAS<br>532 AS<br>16 O/G | 7.5 KW /<br>3000<br>RPM |       | DOL  | 1 | 12.1 A | 63 A  | 10-<br>16A    | 25 A  | 3c x<br>6.0<br>sq.mm<br>AL | Spare  |
| 39 | 532<br>SP05  | Spare - 15KW                                  | 15 KW /<br>1440<br>RPM  |       | DOL  | 1 | 24 A   | 63A   | 22-30<br>A    | 50 A  | 3c x<br>10<br>sq.mm<br>AL  |        |
| 40 | 532<br>SP06  | Spare 0.55/<br>0.37<br>KW                     | 0.55 KW                 |       | DOL  | 1 | 0.9A   | 16A   | 0.5-<br>2.5 A | 4.0 A | 3c x<br>2.5<br>sq.mm<br>CU |        |
| 41 | 532 SP<br>07 | Spare 3.7KW                                   | 3.7 KW /<br>1440<br>RPM |       | DOL  | 1 | 6.0 A  | 32A   | 6-12<br>A     | 20 A  | 3c x<br>6.0<br>sq.mm<br>AL | Spare  |
| 42 | 532 SP<br>08 | Spare - 9.3KW                                 | 9.3 KW /<br>1440<br>RPM |       | DOL  | 1 | 19A    | 63 A  | 14-<br>20A    | 32A   | 3c x<br>6.0<br>sq.mm<br>AL |        |
| 43 | 532 SP<br>09 | Spare - 7.5KW                                 | 7.5 KW /<br>3000<br>RPM |       | DOL  | 1 | 12.1 A | 63 A  | 10-<br>16A    | 25 A  | 3c x<br>6.0<br>sq.mm<br>AL | Spare  |
| 44 | 532 SP<br>10 | Spare 3.7KW                                   | 3.7 KW /<br>1440<br>RPM |       | DOL  | 1 | 6.0 A  | 32A   | 6-12<br>A     | 20 A  | 3c x<br>6.0<br>sq.mm<br>AL | Spare  |
| 45 | 532 SP<br>11 | Spare -32<br>A                                |                         | 32 A  | MCCB | 1 |        | 32A   |               |       |                            | Heater |
| 46 | 532 SP<br>12 | Spare 90KW                                    | 90 KW /<br>1440<br>RPM  | 250 A | HDOL | 1 | 146 A  | 250 A | 140-<br>170 A | 250 A | 3c x<br>150<br>sq.mm<br>AL |        |
| 47 | 532 SP<br>13 | Spare -16<br>A                                |                         | 16 A  | MCCB | 1 |        | 16A   |               |       |                            | Heater |
| 48 | 532 SP<br>14 | Spare -16<br>A                                |                         | 16 A  | MCCB | 1 |        | 16A   |               |       |                            | Heater |
| 49 | 532 SP<br>15 | Spare RDOL -<br>16<br>A                       | 0.37 KW /<br>###<br>RPM |       | RDOL | 1 | 0.6 A  | 16A   | 0.5-<br>2.5A  | 4.0 A | 3c x<br>2.5<br>sq.mm<br>AL |        |

|    |               |                         |  |      |      |   |  |      |  |  |                        |
|----|---------------|-------------------------|--|------|------|---|--|------|--|--|------------------------|
| 50 | 532<br>CTR 02 | Control Supply<br>O/G 2 |  | 32 A | MCCB | 1 |  | 32 A |  |  | Control<br>Transformer |
| 51 | 532<br>LTG 01 | Lighting -<br>32 A      |  | 32 A | MCCB | 1 |  | 32A  |  |  | Lighting               |

### CCI TANDUR: DRIVE LIST FOR NEW FLY-ASH SILO

| S.No | Eqp.No        | Equipment Description                  | Specification   | KW   | RPM  | CableSize         | FLC   | Type | Remarks   |
|------|---------------|--|---|------|------|-------------------|-------|------|-----------|
| 1    | 532<br>FN01   | Bag filter fan on top of fly-ash silo  | Type- Centrifugal Backward curve blades, inlet static pressure-300mmwg        | 15   | 1440 | 3c x 6.0 sq.mm cu | 24 A  | DOL  |           |
| 2    | 532<br>RF01   | Rotary feeder under bagfilter hopper   | 250mm dia, adjustable vanes for wear, directly coupled geared motor           | 0.55 |      | 3c x 2.5 sq.mm cu | 0.9A  | DOL  |           |
| 3    | 532<br>BL01   | Roots Blower for Silo aeration         | Twin or tri lobe blowers with suction filter, suction and discharge silencers | 15   | 1440 | 3c x 6.0 sq.mm cu | 24 A  | DOL  | 1 working |
| 4    | 532<br>BL02   | Standby Roots Blower for Silo aeration | Twin or tri lobe blowers with suction filter, suction and discharge silencers | 15   | 1440 | 3c x 6.0 sq.mm cu | 24 A  | DOL  | 1 standby |
| 5    | 532<br>CP01   | Air Compressor for Fly-ash unloading   | Screw compressor non lubricated type for bulker unloading rate of min 120TPH  | 90   | 1440 | 3c x 110 sq.mm cu | 146 A | HDOL |           |
| 6    | 532<br>CP02   | Air Compressor for Fly-ash unloading   | Screw compressor non lubricated type for bulker unloading rate of min 120TPH  | 90   | 1440 | 3c x 110 sq.mm cu | 146 A | HDOL |           |
| 7    | 532<br>CP03-1 | Air compressor for Control air         | Screw compressor non lubricated type with airdryer                            | 9.3  | 1440 | 3c x 6.0 sq.mm cu | 15 A  | DOL  |           |
| 8    | 532<br>CP03-2 | Air compressor for Control air         | Screw compressor non lubricated type with airdryer                            | 9.3  | 1440 | 3c x 6.0 sq.mm cu | 15 A  | DOL  |           |

|    |               |   |   |      |      |                      |           |      |  |
|----|---------------|---|---|------|------|----------------------|-----------|------|--|
| 9  | 532 DZ<br>01  | Motorised<br>Flow Control<br>gate                       | Size 200 mm, with<br>matching flanges,<br>regulating type 0-<br>100% outflow  | 0.37 |      | 3c x 2.5<br>sq.mm cu | 0.6 A     | RDOL |  |
| 10 | 532 DZ<br>02  | Motorised<br>Flow Control<br>gate                       | Size 200 mm, with<br>matching flanges,<br>regulating type 0-<br>100% outflow  | 0.37 |      | 3c x 2.5<br>sq.mm cu | 0.6 A     | RDOL |  |
| 11 | 532 DZ<br>03- | Motorised<br>Flow Control<br>gate for bin<br>extraction | Size 200 mm, with<br>matching flanges,<br>regulating type 0-<br>100% outflow  | 0.37 |      | 0.37                 | 0.6 A     | RDOL |  |
| 12 | 532 DZ<br>04  | Motorised<br>Flow Control<br>gate for bin<br>extraction | Size 200 mm, with<br>matching flanges,<br>regulating type 0-<br>100% outflow  | 0.37 |      | 3c x 2.5<br>sq.mm cu | 0.6 A     | RDOL |  |
| 13 | 532<br>BL03   | Roots Blower<br>for bin<br>aeration                     | Twin or tri lobe<br>blowers with<br>suction filter,<br>suction and<br>discharge silencers   | 9    | 1440 | 3c x 6.0<br>sq.mm cu | 14.5<br>A | DOL  |  |
| 14 | 532 AB<br>01  | Airslide blower<br>for AS 05-07<br>and DB 01            | High Pressure<br>Centrifugal fan, 63<br>mbar static<br>pressure, with air<br>intake filter,<br>throttle valve and<br>directly driven<br>design bearing<br>mounted | 3.7  | 3000 | 3c x 4.0<br>sq.mm cu | 6.0 A     | DOL  |  |
| 15 | 532 AB<br>02  | Airslide blower<br>for AS 08-09<br>and DB 02            | High Pressure<br>Centrifugal fan, 63<br>mbar static<br>pressure, with air<br>intake filter,<br>throttle valve and<br>directly driven<br>design bearing<br>mounted | 3.7  | 3000 | 3c x 4.0<br>sq.mm cu | 6.0 A     | DOL  |  |
| 16 | 532 AB<br>03  | Airslide blower<br>for AS 532 AS<br>11 and DB 03        | High Pressure<br>Centrifugal fan, 63<br>mbar static<br>pressure, with air<br>intake filter,<br>throttle valve and<br>directly driven<br>design bearing<br>mounted | 3.7  | 3000 | 3c x 4.0<br>sq.mm cu | 6.0 A     | DOL  |  |

|    |              |  |   |      |      |                      |           |     |  |
|----|--------------|--|---|------|------|----------------------|-----------|-----|--|
| 17 | 532 AB<br>04 | Airslide blower<br>for AS 532 AS<br>12           | High Pressure<br>Centrifugal fan, 63<br>mbar static<br>pressure,with air<br>intake filter,<br>throttlevalve and<br>directly driven<br>design bearing<br>mounted | 3.7  | 3000 | 3c x 4.0<br>sq.mm cu | 6.0 A     | DOL |  |
| 18 | 532 AB<br>06 | Airslide blower<br>for AS 532 AS<br>14 and DB 04 | High Pressure<br>Centrifugal fan, 63<br>mbar static<br>pressure,with air<br>intake filter,<br>throttlevalve and<br>directly driven<br>design bearing<br>mounted | 3.7  | 3000 | 3c x 4.0<br>sq.mm cu | 6.0 A     | DOL |  |
| 19 | 532 AB<br>07 | Airslide blower<br>for AS 532 AS<br>12           | High Pressure<br>Centrifugal fan, 63<br>mbar static<br>pressure,with air<br>intake filter,<br>throttlevalve and<br>directly driven<br>design bearing<br>mounted | 3.7  | 3000 | 3c x 4.0<br>sq.mm cu | 6.0 A     | DOL |  |
| 20 | 532<br>FN02  | Bag filter fan<br>for 532 BF02                   | Type- Centrifugal<br>Backwardcurve<br>blades, inlet static<br>pressure-<br>300mmwg  | 9.3  | 1440 | 3c x 6.0<br>sq.mm cu | 15 A      | DOL | Directly<br>coupled,<br>mountedon<br>anti<br>vibration<br>pads |
| 21 | 532<br>RF01  | Rotary feeder<br>under bagfilter<br>hopper       | 250mm dia,<br>adjustable vanes<br>for wear, directly<br>coupled geared<br>motor   | 0.55 |      | 3c x 2.5<br>sq.mm cu | 0.9 A     | DOL |  |
| 22 | 532 AB<br>05 | Airslide blower<br>for AS 532 AS<br>13           | High Pressure<br>Centrifugal fan, 63<br>mbar static<br>pressure,with air<br>intake filter,<br>throttlevalve and<br>directly driven<br>design bearing<br>mounted | 7.5  | 3000 | 3c x 6.0<br>sq.mm cu | 12.1<br>A | DOL |  |



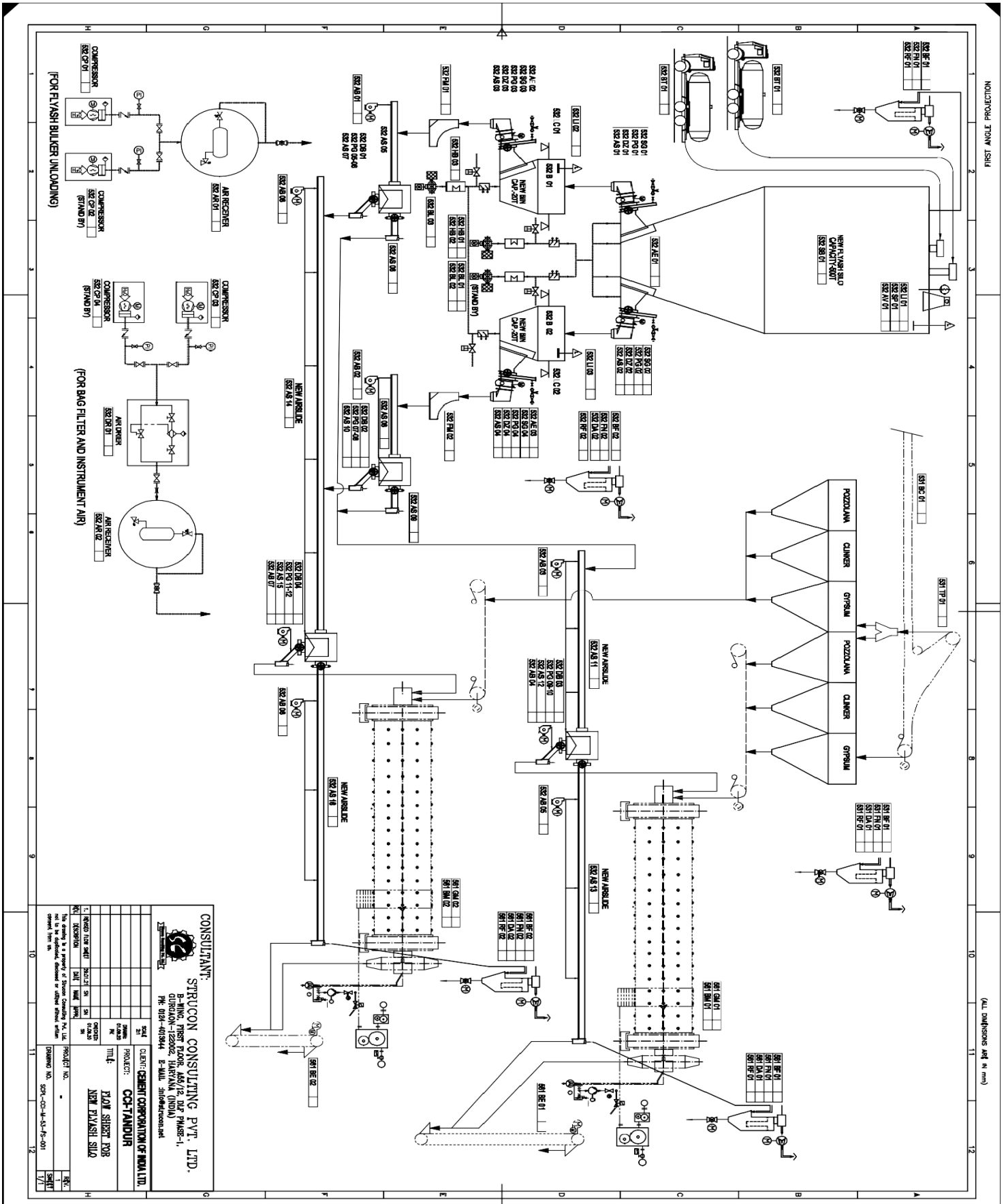
|    |              |  |   |     |      |                      |           |     |  |
|----|--------------|--|---|-----|------|----------------------|-----------|-----|--|
| 23 | 532 AB<br>08 | Airslide blower<br>for AS 532 AS<br>16 | High Pressure<br>Centrifugal fan, 63<br>mbar static<br>pressure,with air<br>intake filter,<br>throttlevalve and<br>directly driven<br>design bearing<br>mounted | 7.5 | 3000 | 3c x 6.0<br>sq.mm cu | 12.1<br>A | DOL |  |
|----|--------------|--|---|-----|------|----------------------|-----------|-----|--|

**Note :**

1. The Tenderer will supply & install the equipments not mentioned in the above list for smoothoperation of the Fly-ash handling system.
2. The tenderer may contact the M/s. CCI representative for further clarifications in BOQ & GADrawings as mentioned in part -IV

# ANNEXURE XIII.5.1

## A) FLOWSHEET OF FLYASH SILO CIRCUIT (PROPOSED)



FIRST ANGLE PROJECTION

(All dimensions in mm)

**CONSULTANT**  
**STRUCON CONSULTING PVT. LTD.**  
 B-100C, FIRST FLOOR, ANA/72, DLF PHASE-II,  
 GURUKUL-120002, GHAZIABAD, U.P., INDIA  
 TEL: 0181-401944, E-MAIL: info@strucon.com

**CLIENT: CEMENT CORPORATION OF INDIA LTD.**  
**PROJECT: CCM-TANDUR**  
**TITLE: PLOW SHEET FOR NEW FLYASH SILO**

|     |                |          |    |      |      |
|-----|----------------|----------|----|------|------|
| NO. | REVISION       | DATE     | BY | CHKD | APPD |
| 1   | ISSUED FOR MFG | 20/12/11 | SI | SI   | SI   |
| 2   | REVISION       |          | SI | SI   | SI   |

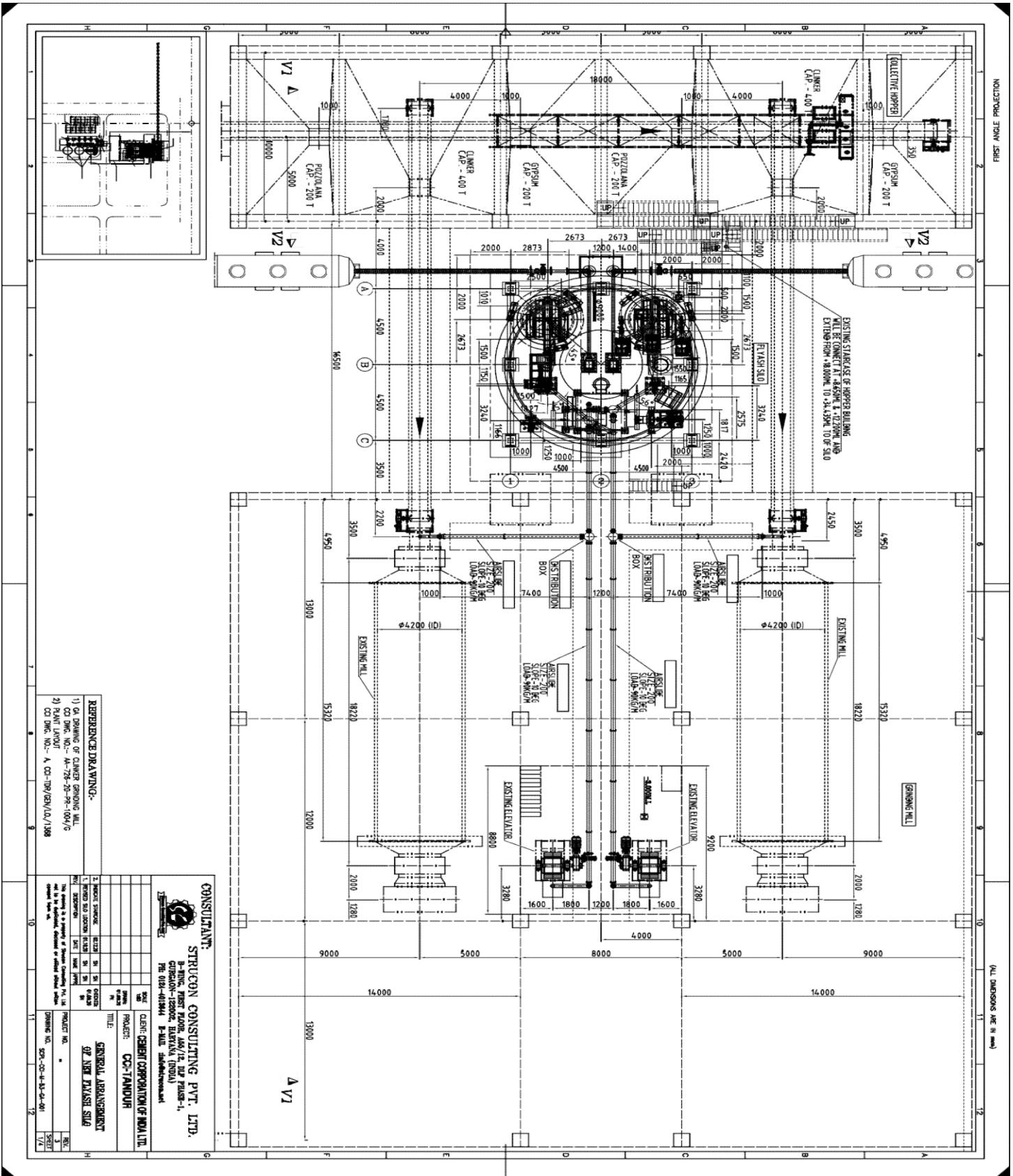
This drawing is a property of Strucon Consulting Pvt. Ltd. and is not to be reproduced, disclosed or copied without written consent from Strucon.

PROJECT NO.: \_\_\_\_\_  
 DRAWING NO.: CCM-TANDUR-SI-FS-001

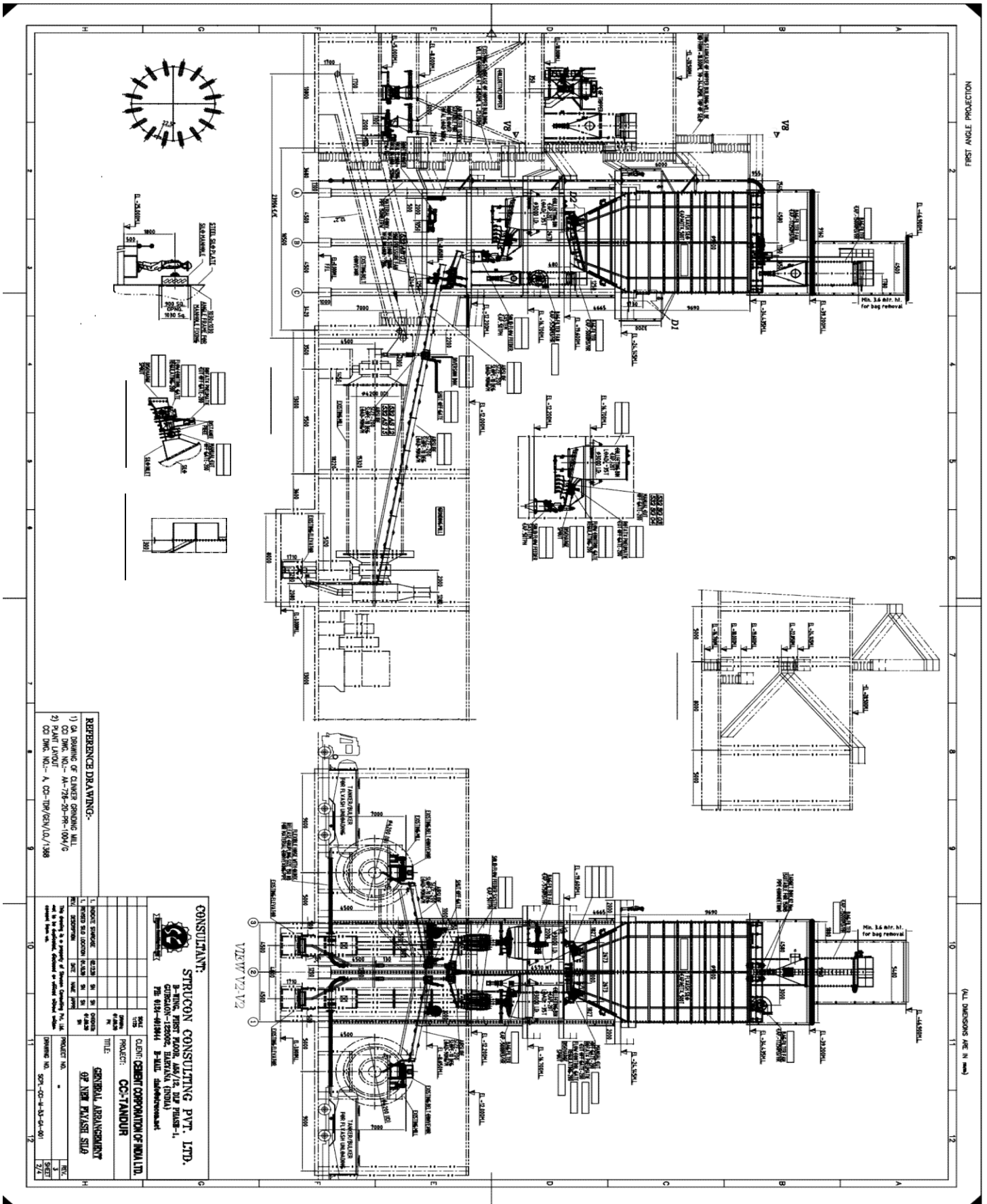
DATE: \_\_\_\_\_  
 SCALE: \_\_\_\_\_

# ANNEXURE XIII.5.2

## B) GA DRAWINGS OF FLYASH SILO



C) GA DRAWINGS OF FLYASH SILO



FIRST ANGLE PROJECTION

(ALL DIMENSIONS IN MM)

REFERENCE DRAWINGS:-

- 1) GA DRAWING OF CLAYERS GRINDING MILL
- 2) GA DRAWING OF CLAYERS GRINDING MILL
- 3) GA DRAWING OF CLAYERS GRINDING MILL

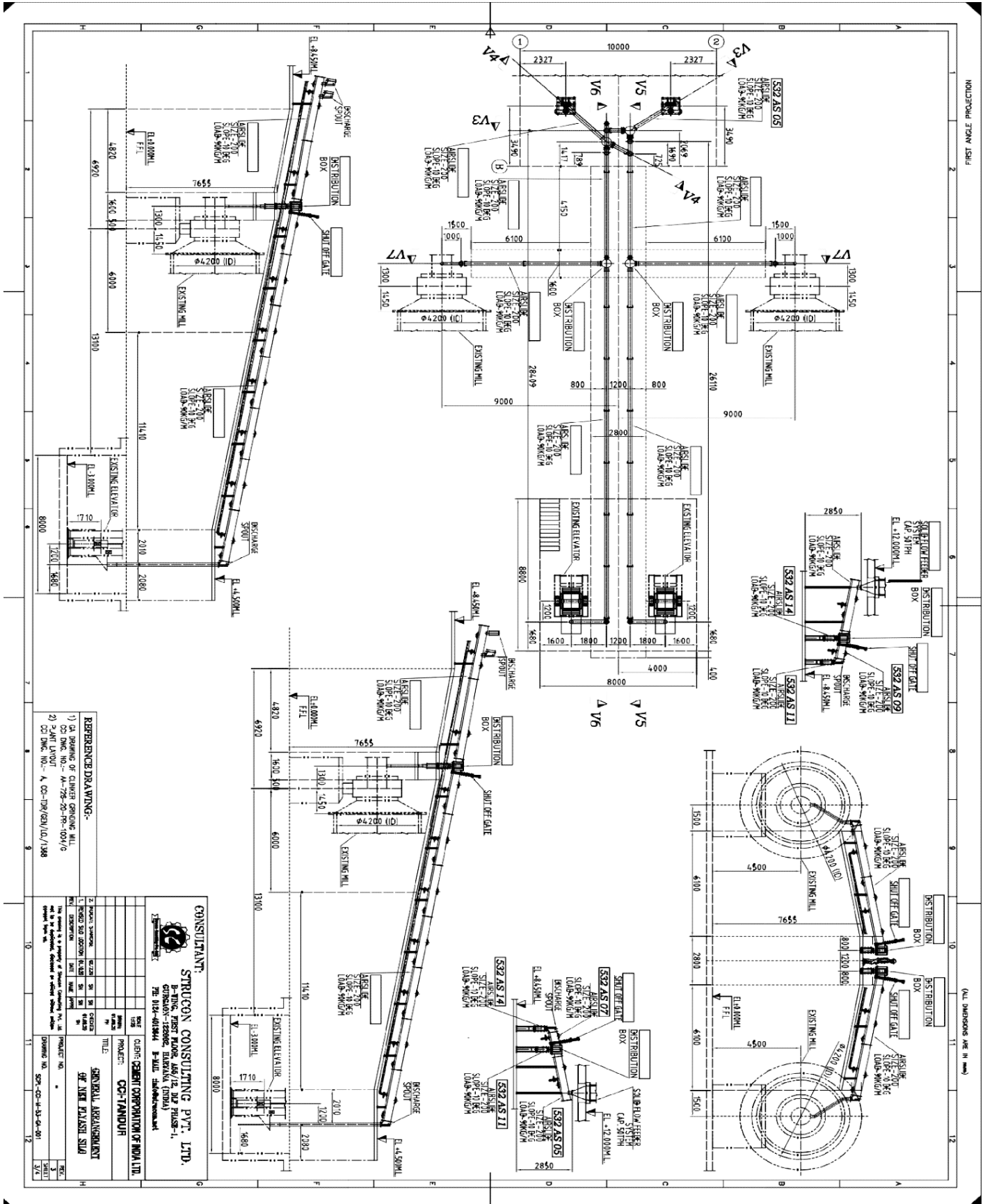
**CONSULTANT:**  
**STRUCON CONSULTING PVT. LTD.**  
 B-301, FIRST FLOOR, 4th/12th FLOOR PHASE-1,  
 GURGAON-122002, GURGAON (INDIA)  
 TEL: 0124-4019441 B-3011, Gurgaon

**CLIENT:** CEMENT CORPORATION OF INDIA LTD.  
**PROJECT:** CC-1 ANDUR  
**TITLE:** GENERAL ARRANGEMENT OF NEW FLYASH SILO

**PROJECT NO.:** \_\_\_\_\_  
**SHEET NO.:** 3/7

# ANNEXURE XIII.5.4

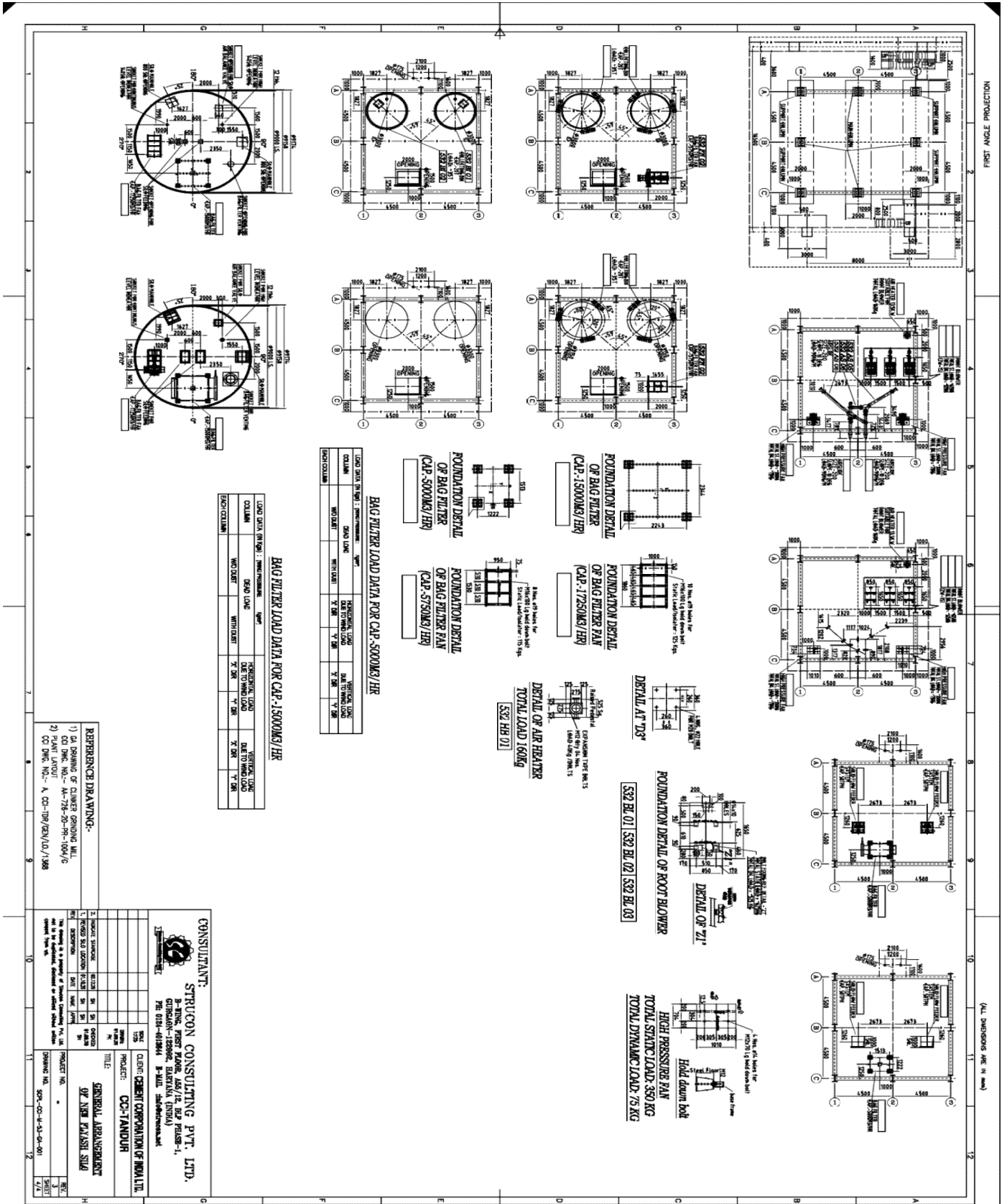
## D) GA DRAWINGS OF FLYASH SILO



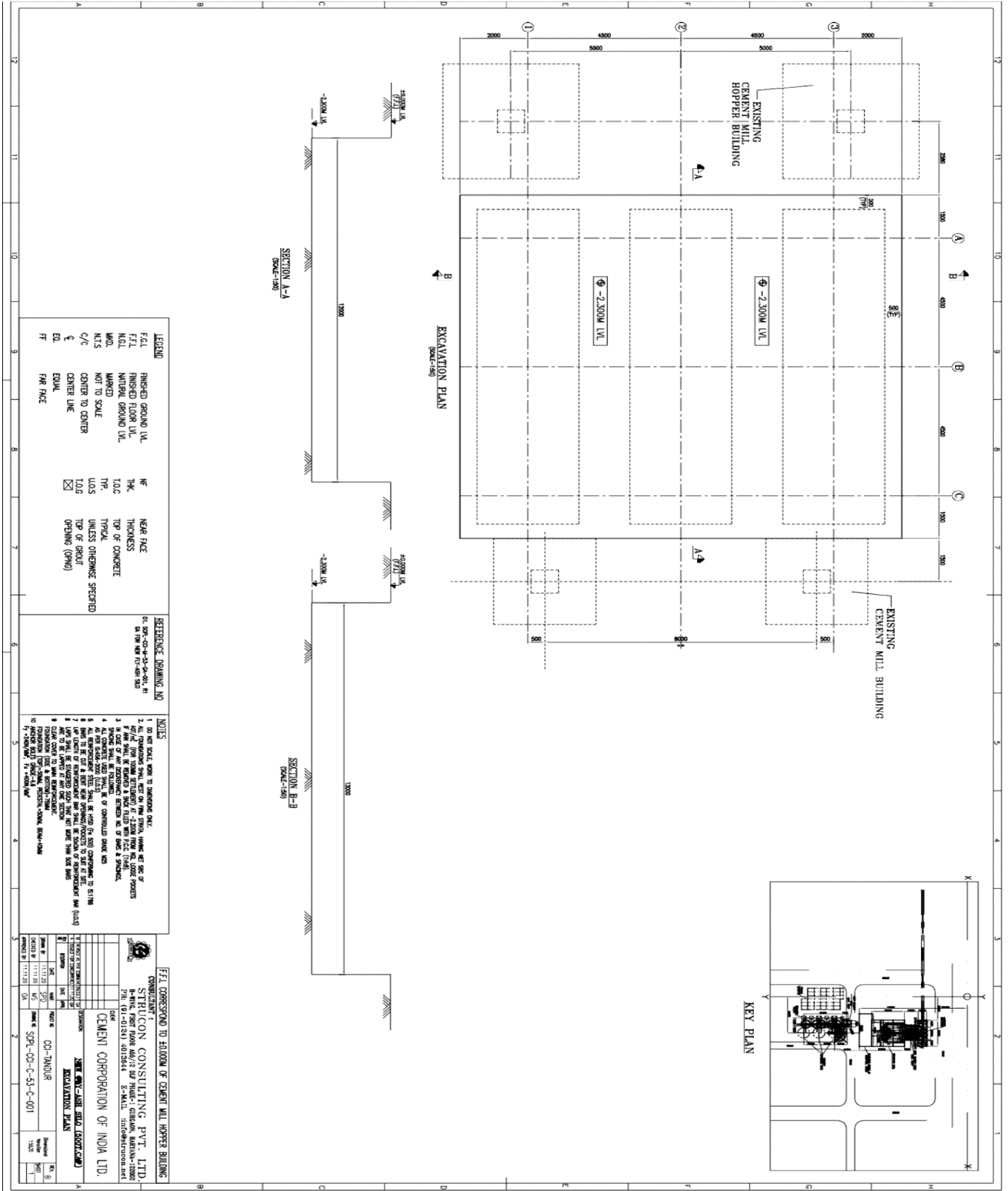
REFERENCE DRAWING:-  
 1) GA DRAWING OF CLIMBER EXISTING HILL  
 CD DMC NO.- A-796-20-R-101/G  
 2) GA LAYOUT  
 CD DMC NO.- A-103-109/021/01/188

|                               |  |  |  |                   |  |             |  |
|-------------------------------|--|--|--|-------------------|--|-------------|--|
| CONSULTANT                    |  | DATE                                   |  | BY                |  | CHECKED     |  |
| STRUCOON CONSULTING PVT. LTD. |  | 11/05/2024                             |  | S. S. SINGH       |  | S. S. SINGH |  |
| PROJECT                       |  | CLIENT                                 |  | TITLE             |  | SCALE       |  |
| COO-TANPOUR                   |  | GENERAL ARRANGEMENT OF NEW FLYASH SILO |  | 1:1               |  | 1/4         |  |
| PROJECT NO.                   |  | CLIENT'S PROJECT NO.                   |  | DRAWING NO.       |  | SHEET NO.   |  |
| COO-TANPOUR                   |  | GENERAL ARRANGEMENT OF NEW FLYASH SILO |  | ANNEXURE XIII.5.4 |  | 1/4         |  |

E) GA DRAWINGS OF FLYASH SILO

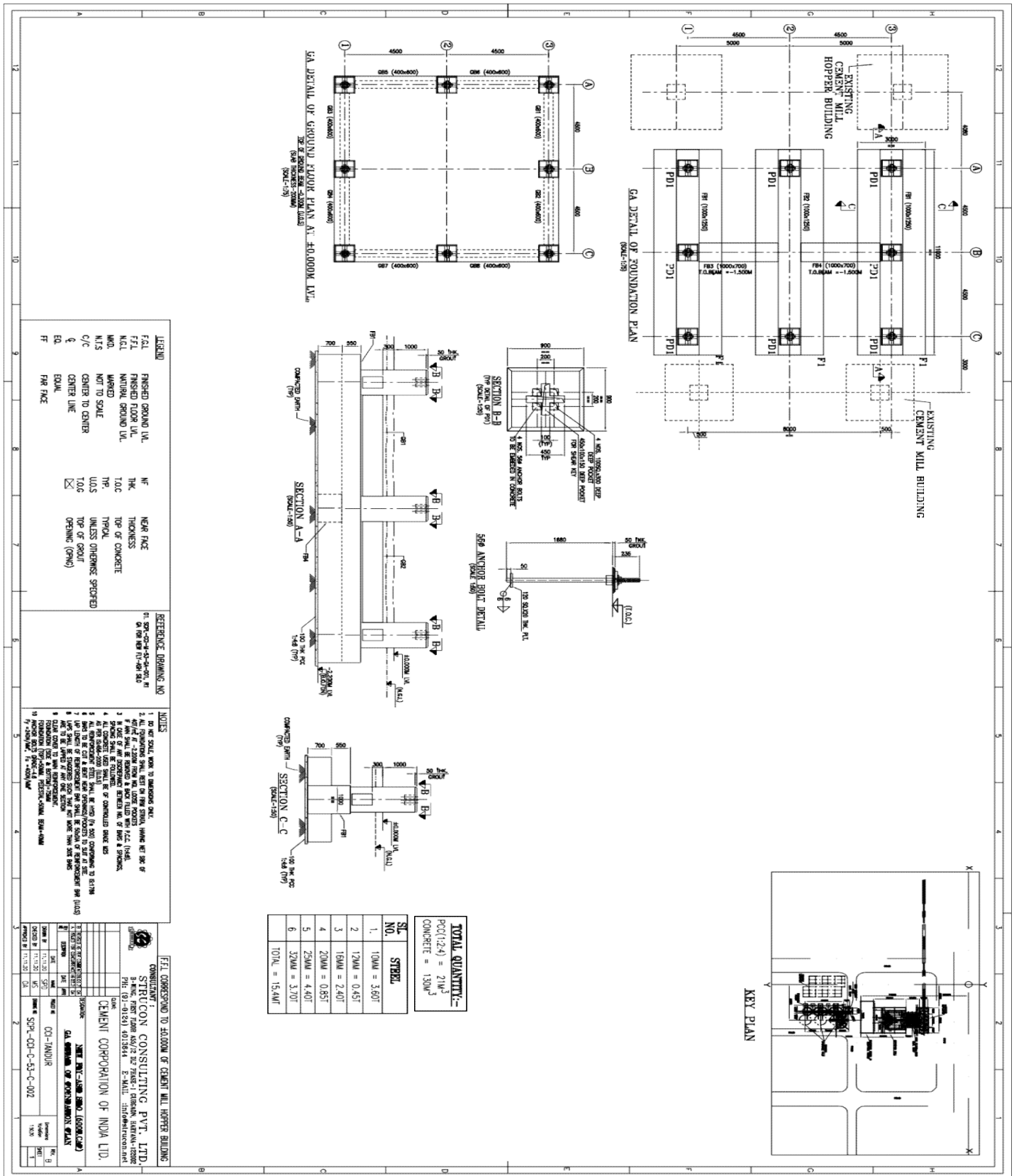


**ANNEXURE XIII.5.6**  
**F) CIVIL DRAWING**



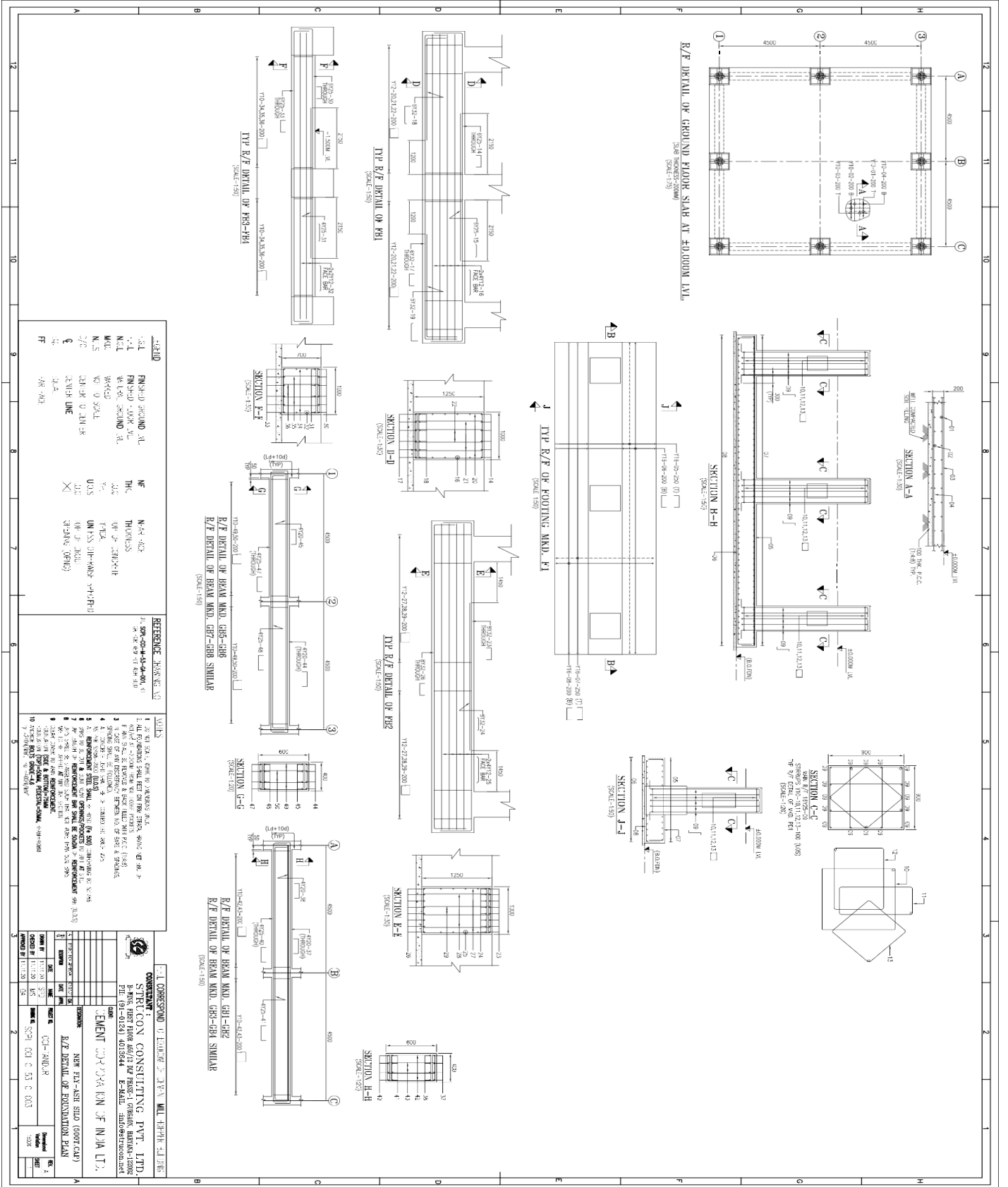
# ANNEXURE XIII.5.7

## G) CIVIL DRAWING





**ANNEXURE XIII.5.8**  
**H) CIVIL DRAWING**



**TERMS & CONDITIONS FOR ERECTION AND COMMISSIONING**

**1.0 RESPONSIBILITY OF THE SUCCESSFUL TENDERER:**

A schedule for the erection work will be made out by the contractor keeping in view the supply schedule and the construction schedule for carrying out the job sequentially within the overall time schedule as specified in the order.

Unloading and handling of all the equipments forming scope of supply, from the railway wagons or road transport (truck/ trailer) to the contractor's storage shed/yards or to the storage points within the plant areas, as may be indicated by CCI. However, required storage area will be provided by CCI for the critical& other sensitive equipments.

Safety of contractor's equipments during transportation and handling and safe custody of all the equipments during the storage.

Successful tenderer at his expenses shall comply with all labour laws and shall indemnify Cement Corporation of India Ltd. (CCI) against accident/damage caused to their equipment or employees.

Handling and transportation of all equipments from storage sheds/yards/storage points/CCI's goddown /storage yards to the equipment foundations and placing them over the foundations.

The contractor shall be responsible for demurrage and wharf age charged by railways, all damages, shortages and security of materials and equipment under his charge till the same are erected and commissioned on full load, certified in writing as such and taken over by the CCI.

Safety of personnel will be the responsibility of the tenderer. All required PPE (Personal protection equipment) has to be provided by the contractor.

Tenderer should ensure the timely payment to their work force as per minimum wages.

**2.0 TOOLS AND TACKLES**

Arrangement of all tools and tackles, instruments, cranes, winches, derricks, ropes, sleepers, lifting and transport equipment, jacks, chain blocks, crow bars, welding and gas cutting sets,

testing and checking equipments etc. in adequate numbers will be the responsibility of tenderer.

### **3.0 CHECKING OF EQUIPMENT FOUNDATION**

Checking of levels, foundation center distances cross checking, alignment of Civil foundations and structure for machinery installation purpose according to the relevant drawing & design. For any modifications required in the existing civil structures and other structures for erecting fly-ash silo without damaging to the existing structure, the tenderer has to follow up with the design consultant & Civil contractor nominated by M/s. CCI & finish the work.

### **4.0 COMPLETION OF ERECTION WORK**

Rectification/modification as required before erection as well as during erection and after trial run of machineries with and without load, shall be the responsibility of the contractor.

Arrangement of adequate number of safety equipments for erection and storing shall be the responsibility of the contractor.

Arrangement of all necessary erection materials like machined and un-machined packing will be made by the contractor.

Erection, staging structures and necessary supporting hardware consumables as may be required shall be arranged by the contractor.

Contractor shall provide all approved foundation drawings, structural drawings, erection drawings, permissible erection tolerances and relevant performance in reproducible sheets for individual equipments erection and checks. All checking of the erected machinery would be done with these basic drawings and tolerances.

The contractor may carry out fabrication work at site for which facilities like space and power supply will be provided free of cost by CCI.

Roof & Side cladding work shall be carried out by 25 SWG I.S. standard C.G.I. sheet as per established practices.

The contractor at his own cost for all equipments, platform, hand railings, supports and structures etc will do painting with red-oxide and two coats of enamel paints.

The existing equipments removed from their foundation including scrap materials are to be shifted to a place indicated by CCI. The entire work premises are to be cleaned after completion of erection work.

## **5.0 ELECTRICAL AND INSTRUMENTATION ERECTION:**

For electrical and instrumentation equipment and other related items, special conditions, over and above those given in the preceding para's are given below.

All the equipments such as motors, starter panels, switchgear panels, control equipments, etc. are to be suitably mounted, assembled, aligned and inter-connected with various sections, checking of each components for satisfactory mechanical and electrical operation and cleaning of contacts, mounting of loose supplied components to their respective positions, setting of relays in accordance with the requirements.

Laying of LT, control, instrumentation and special cables including supply / fabrication of all cable accessories such as junction boxes, indoor, outdoor end termination/straight through/tee jointing kit for cables; cable glands; cable lugs; cable ferrules, rigid/flexible pipes cable racks/supports/trays etc. Cable laying shall be as per approved schedule and shall be carried out in a neat and systematic manner with codified markings.

Supply and erection of earthing stations; mains and connections with all accessories for the mechanical transportation system including control arrangement. The work includes double earthing of all drives, cables, power equipment and electrical boxes. The instrumentation panels and screened cables should be separately and effectively earthed. All work shall be carried out in accordance with Indian Electricity Rules and the code of practice as per Indian Standards.

Supply and erection of lighting system inside the covered sheds is under the scope of this order, as per statutory requirement.

All erection and standard tests as per BIS and electricity regulations shall be carried out, documented and countersigned by the purchaser's representative, which shall be an integral part of the installation and commissioning work.

Complete automation system should be integrated with our DCS System supplied by SIEMENS with SIMATIC MANAGER PCS-7.

The tenderer shall provide all the drawings, layouts and relevant data for getting the statutory approval from the State Government authorities/Electrical Inspectorate as per rules in vogue.

## **6.0 OTHER TERMS AND CONDITIONS Commencement and completion period of erection.**

The detailed time schedule for erection is to be prepared in consultation with CCI and will be approved by CCI. Alteration of schedule will be kept to minimum but not changed without written approval of CCI.

Erection of equipment of a section will be considered completed, when each unit is ready for trial & commissioning. If any defects or deficiencies are found during the pre-commissioning

test, or trial run, due to sub-standard quality of equipment, workmanship of the contractor, the same shall be rectified/replaced by the contractor expeditiously.

### **Contractor's site Supervisory Staff:**

All necessary staff headed by the site Manager or Resident Engineer should be available at site according to the progress of erection and quantum of erection. Replacement in case of unforeseen eventualities shall be done expeditiously, Manager will be considered as Chief Authority representing the contractor for all purposes of communications with CCI and his representatives. He will also be responsible for his sub-supplier representatives, staff etc. for this purpose.

Site Electrical in-charge must possess valid Electrical Supervisory license.

### **Site Facilities:**

CCI will provide necessary water and electrical power facilities and cement 43/53 gr. within the factory premises for the purpose of erection and civil works to the contractor @ free of cost.

Land for storage yard, site office and fabrication yard shall be made available to the contractor within the factory premises free of cost.

The accommodation to the Staff / Engineer of the contractor shall be provided on chargeable basis, if available. No transportation will be provided by CCI.

### **TRIAL RUNS AND COMMISSIONING**

- a) After the completion of erection work of mechanical, electrical and instrumentation equipments, party shall offer the entire system for trial runs and commissioning. The alignment of all the drives and the equipments shall be checked jointly and defects, if any, shall be rectified by the party.
- b) After the erection but before the power supply is switched on, the insulation of all electrical equipments shall be tested by suitable instrument and any defects revealed shall be rectified by the party.
- c) All the motors of equipments shall be run on no load at least for eight hours.
- d) On supply of power to the system, the following tests shall be carried out – The correctness of all the circuits, interlocks and sequence of operation etc.

e) The satisfactory operation of all the protective devices

i) Satisfactory operation of all the local push button (LPBs)  
ii) Calibration of all the instruments.

iii) After the successful no load trials/tests as indicated above, the defects observed, if any, shall be rectified by the party before taking load trial.

The following details shall be recorded in regard to the trial and commissioning of the system.

(a) Alignment of all motors, gear boxes and equipments

(b) Value of insulation resistance of motors and other electrical equipments.

(c) Correctness of all circuits, interlocks, sequence of operations and calibration data of all instruments.

(d) Satisfactory operation of all protective devices.

(e) Any other remark, if required.

**PERFORMANCE GUARANTEE TEST**

**A. Performance Guarantee Test for System as a whole**

The duration of the performance guarantee test for the system as a whole shall be 16 hours (3 trials each of 16 hrs). For any interruption in between exceeding 2 hours, the duration of the test shall be extended accordingly. However, if the total stoppage of the complete system / each mill exceeds 06 hours, the test is to be repeated for another 16 hours in the same manner.

The extraction system should be able to provide material to the mills with respect to set point (Max set point: 35tph & Minimum set point: 15 tph) given in the system with 5% margin.

The tenderer shall rectify the defects, if any, observed during the above test, and only after the rectification of such defects test can be further conducted.

Dust emission of installed bag filters should be less than 30 mg/Nm<sup>3</sup>.

If dust emission is found more than 30mg/ Nm<sup>3</sup>, which is not acceptable. Party/Tenderer has to achieve the required emission level by replacing bags and other modification of the system to get ultimately either equal or less than 30mg/Nm<sup>3</sup> with no extra cost to M/s. CCI.

During the test, the actual Kw and current drawn at the full load capacity of the system by each drive shall be compared with the rated current for 10 per cent margin. The tenderer shall be required to replace the drive in which 10% margin is not available over and above the rated capacity.

The Party shall provide the instruments, including electrical meters, tools and tackles, equipments required for the performance guarantee tests. All arrangements for the performance guarantee test shall be carried out by the Party.

The Party shall guarantee the successful and satisfactory operation of the equipments and materials supplied, erected and commissioned under the contract, as per the specifications and documents.

The Party shall further guarantee that the equipments and materials supplied by them and installed under their supervision shall be free from all defects in design, material and workmanship and shall upon written notice from the CCI, rectify such defects as developed under the normal use of the said equipments and material within the period of guarantee / warranty specified in the relevant clause of terms and conditions of the contract PART – III.

The modifications / alterations/rectification, if any, shall be carried out immediately on completion of the performance guarantee test, but in any case within a period of 15 days from the date of

performance guarantee test. In case the Party fails to carry out the modifications / alterations / rectification within the above period, CCI reserves the right to carry out the same at the risk and cost of the Party.



PRICE BID PROFORMA

Tender for “**Manufacture, Supply, Erection, Hooking up, Commissioning and PG test of New Fly-ash Steel Silo of Cap 500MT with feeding, extraction and regulating system on turnkey basis at Tandur unit**”.

**Tender No. GM (T&O)/PROJ/CO/FAS/TDO/2022**

**Dt: 10.11.2022**

| Sl.No | Description  | Basic price (RS) | GST as applicable (RS) | Total Amount (RS) | Total Amount In words |
|-------|--|------------------|------------------------|-------------------|-----------------------|
| 1     | Manufacture, Supply, Erection, Hooking up, Commissioning and PG test of New Fly-ash Steel Silo of Cap 500MT with feeding, extraction and regulating system on turnkey basis at Tandur unit”. |                  |                        |                   |                       |

**NOTE :**

- The Lowest Quoted (Overall L1) rate (excluded GST) shall be distributed in three parts as under:

| S. No. |         | Description  | Percentage of Total quoted price |
|--------|---------|--|----------------------------------|
| 1      | Part –A | Supply of Components / items such as completed bought out items, M.S. plates, structural steels etc. | 60 %                             |
| 2      | Part-B  | Fabrication, Assembling, Fixing and Erection work.   | 25%                              |
| 3      | Part-C  | Commissioning and hooking up with existing system  | 15%                              |

- The prices are to be quoted as per clause. 4 of Part-III - Special terms & conditions.

( )  
Signature

With Company's stamp

Name and designation