



**MISHRA DHATU NIGAM LIMITED
P.O.KANCHANBAGH, HYDERABAD**

Part-I (TECHNICAL BID)

**CONSTRUCTION OF MACHINE
FOUNDATIONS IN WIDE PLATE
MILL FACILITY, MIDHANI,
KANCHANBAGH, HYDERABAD-58.**

Mishra Dhatu Nigam Limited
Kanchanbagh, Hyderabad

Tender Notice No: MDN/PUR/AP2081018/EADVT/087/18-19

Date:- 14-06-2018

Two part tender is invited on behalf of Mishra Dhatu Nigam Ltd Hyderabad, (MIDHANI) for the work of “CONSTRUCTION OF MACHINE FOUNDATIONS IN WIDE PLATE MILL FACILITY MIDHANI, KANCHANBAGH, HYDERABAD-58.

Particulars of the tender are:

Estimate cost	: Rs. 4024 lakhs
Earnest money deposit	: Rs. 15.00 lakhs
Contract Period	: Total 12 months (staggered) from the date of Handover of site as placed below;
1. Package (a)	- 7 Months
2. Package (b)	- 3 Months
3. Package (c)	- 11 Months
4. Package (d)	- 7 Months
5. Package (e)	- 12 Months

Please note that the start date for all packages a, b, c, d & e are counted from the date of handover of site.

The tender document can be downloaded from website <http://eprocuramidhani.nic.in> from 14-06-2018 till 10.30Hrs of 05-07-2018. Tenders will be received up to 10.30 hrs on 05-07-2018 and part-1 (Technical Bid) will be opened on the next day at 11.00 hrs. & price bid will be opened later. Interested parties may download the documents and participate in the tender. Along with the tender enquiry for the above work, bidder is requested to furnish their offer through online <http://eprocuramidhani.nic.in> before last date of submission, along with EMD fee Rs. 15.00 lakhs online through link <http://ebs.in/midhani/public> or visit MIDHANI website www.midhani.com > purchase > Tenders > EMD fee,—ONLINE PAYMENT. Competent Authority of “MIDHANI” reserves the rights to reject any or all tenders without assigning any reasons thereof.

Addl. General Manager (Purchase & Stores)
Mishra Dhatu Nigam Ltd., Hyderabad.

Section-1

Mishra Dhatu Nigam Limited
Kanchanbagh, Hyderabad.

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Hyderabad, (MIDHANI) for the work of "CONSTRUCTION OF MACHINE
FOUNDATIONS IN WIDE PLATE MILL FACILITY", MIDHANI, KANCHANBAGH,
HYDERABAD-58.

To be submitted by 10.30 hrs on 05-07-2018

Part-1 (Technical Bid) will be opened at 11.00 hrs on 06-07-2018 through e-
procurement.

**Mishra Dhatu Nigam Limited
Kanchanbagh, Hyderabad.**

Tender Notice No: MDN/PUR/AP2081018/EADV/087/18-19

Date:- 14-06-2018

Two part tender is invited on behalf of Mishra Dhatu Nigam Ltd., Hyderabad, (MIDHANI) for the work of “**CONSTRUCTION OF MACHINE FOUNDATIONS IN WIDE PLATE MILL FACILITY**”, MIDHANI, KANCHANBAGH, HYDERABAD-58 from reputed contractors who are qualified, proven having similar experience.

1. The estimated cost of work is Rs 4024 Lakhs. However, this estimated cost is only indicative & serves as rough guide to the tender.
2. Contract period - Total 12 months (staggered) from the date of handover of site as placed below;
 1. Package (a) - 7 Months
 2. Package (b) - 3 Months
 3. Package (c) - 11 Months
 4. Package (d) - 7 Months
 5. Package (e) - 12 Months

Please note that the start date for all packages a, b, c, d & e are counted from the date of handover of site.

3. Chairman & Managing Director, MIDHANI shall be the accepting authority of this Contract.
4. **Eligibility Criteria:**

The bidder can participate either solely or through a consortium/ JV. In case of consortium /JV, a consortium / JV agreement is to be submitted along with the bid indicating the name of the lead partner for consortium & for JV, bid to be submitted in the name of JV. The bidder shall meet all the criteria stipulated hereunder.

Sl.No.	Eligibility Criteria	Documents to be submitted for eligibility criteria
01	Registration of bidder	The documentary proof showing bidder sole / consortium / JV partners has been registered in MIDHANI / other organization of State Govt. or Central Govt. or Private Companies. Also, the bidders shall declare the legal

		status with documentary proof or with self certification.
02	PAN Registration No.	Copy of PAN registration no. in the bidder's / consortium / JV partners name issued by Income Tax Authority
03	GST Registration no.	Copy of GST registration no. in the bidder's / consortium / JV partners name enrolled in any state Govt.
04	Average Annual Turnover during the last 3 financial years should be equal to or more than Rs 4825.00 lakhs	Audited financial statement of sole bidder / lead partner declaring the annual turnover of last 3 financial years (FY 2016-17, 2015-16, 2014-15) duly attested by chartered accountant shall be enclosed.
05	Submission of EMD	EMD for Rs 15.00 lakhs has to be paid as specified in the tender notice and copy of the same has to be enclosed. In case of MSME unit or having MSME unit owned by SC/ST Enterprenuer or having NSIC registration, latest valid documentary proof to be submitted for availing benefits as per government guidelines.
06	Solvency Certificate	The bidder sole / consortium / JV partners shall submit latest Bankers Solvency Certificate for Rs 1610.00 lakhs from Nationalized / Schedule Bank

		issued not earlier than 06 months from the date of this NIT OR Bidders sole / consortium / JV partners shall have positive net worth in each of the three previous financial years
07	Income Tax Returns for last three financial years (FY 2016-17, 2015-16, 2014-15).	The bidder sole / consortium / JV partners shall submit latest income tax clearance certificate or last 3 years IT returns or last 3 years audited balance sheets duly attested by Chartered Accountant
08	Experience of Sole Bidder / Consortium partners having successfully completed similar machine foundation, PEB foundations, RCC building etc., in the last 7 years from the date of this tender notice. P.S:- Similar machine foundation means mass RCC concrete for heavy machinery foundations, similar PEB foundations means RCC foundations for pre-engineering metal structures. Similar RCC building means RCC frame structures with RCC-foundations, beams, slabs etc	The detailed work order containing BOQ along with experience certificate shall be enclosed by the bidder. In case of experience in private companies, TDS/26AS for the year of work executed to be submitted. Experience of successfully completed similar machine foundations, PEB foundations, RCC building etc during last 7 years from the date of tender notice should be either of the following: i) Three similar completed works each costing not less than the amount equal to 40% of the estimated value mentioned in the tender notice Or

		<p>i) Two similar completed works each costing not less than the amount equal to 50% of the estimated value mentioned in the tender notice Or</p> <p>i) One similar completed work each costing not less than the amount equal to 80% of the estimated value mentioned in the tender notice.</p>
09	Registration of ESI & PF	A copy of ESI & PF registration details in the name of bidder sole / Consortium / JV partners
10	Unconditional acceptance of all Technical, commercial terms and conditions along with corrigendums if any.	Self certified documents by the bidder sole / Consortium / JV partners

In case of consortium/JV, lead partner must fulfill completion of at least one work of 50% or two works of 40% of the estimated cost projected in tender in line with criteria mentioned at Sl.No: 8 and correspondingly the other partner must fulfill completion of atleast one work of 50% or one work of 40% of the estimated cost projected in the tender.

5. The tender document will be available online from 14-06-2018 to 05-07-2018 till 10.30 hrs.
6. The tenders shall be submitted online only for both part – I & part – II i.e., Technical bid & Price bid and the same shall be uploaded in the MIDHANI e-procurement portal on or before 10.30 hrs of 05.07.2018. Manual tenders will not be considered.
7. **Technical Bid (Part - I)** will contain mainly:
 - a. Credentials of contractor/consortium members (as specified in the above clause –4-eligibility criteria) along with “Technical bid”.
 - b. EMD of Rs. 15.00 lakhs either online through link <http://ebs.in/midhani/public> or visit midhani website www.midhani.com > purchase > Tenders >, EMD fee (Earnest Money Deposit)–ONLINE PAYMENT or Bank Guarantee confirmed by bankers of bidders favoring MIDHANI through a Nationalized Bank/

Scheduled Commercial Bank en-cashable in INDIA/ online payment with a proof thereof shall be enclosed with Technical Bid. If EMD is not found enclosed, such offers would be liable for rejection. BG shall be valid for a period of 90 days. (our bank details provided at sl.no 26 of pg:11) Please confirm whether you are MSME Unit or MSME Unit owned by SC/ST Entrepreneur or having NSIC registration. If yes, please submit latest valid documentary proof for availing benefits as per government guidelines

- c. Latest Original Bank solvency (not older than 06 months from the date of this NIT) worth Rs. 1610.00 Lakhs from any Nationalized/ Scheduled Bank shall be enclosed or bidders shall have positive net worth in each of the three previous financial years.
 - d. Details as indicated in enclosed technical bid format.
 - e. Details of credentials of prospective tie up, sub- contractors along with proof.
 - f. Details of works carried out during the last 7 years in any Government/ Public Sector Unit/ Large Private Organizations with Certificate.
 - g. Any other additional information, which is thought to be necessary by the tenderer. MIDHANI employees, employees' sons/ daughter/near relatives are not eligible to participate in tender.
8. **“Price Bid” (Part - II)**: The tenderer shall indicate his offer of quotation for above mentioned work on item rate basis in the price bid attached and shall submit online in MIDHANI portal along with technical bid.
9. **The TECHNICAL BID** will be opened at 11.00 hrs on 06-07-2018 online, and **PRICE BID** of the eligible and qualified in technical bid only will be opened at a later stage for which the date and time will be intimated to them.
10. The tenderers, at his own cost are advised to inspect and survey the site and its surroundings, specifications & drawings etc and satisfy themselves before submitting their tender. As to the form and nature of the site, means of access to the site, accommodation that may be required etc. In general, tenderer shall themselves obtain all necessary information as to risk contingencies and other circumstances which may influence or affect their tender. The tenderer shall be deemed to have full knowledge of the site, specifications & drawings etc, whether he inspects it or not and no extra claims due to any misunderstandings or otherwise shall be allowed.
11. Submission of a tender by a tenderer implies that he has read this notice and all other tender documents and has made himself aware of the scope

and specifications for the work to be done and conditions of MIDHANI and local conditions and other factors bearing on execution of the work. No extra claim will be entertained on account of misunderstandings or what so ever.

12. This is an item rate contract and the amount shall be quoted in figures as well as in words for executing works indicated in scope of work, salient features mentioned elsewhere in tender.
13. The item wise payment of the work will be made as indicated elsewhere in this document, quantities in BOQ are indicative; however payment will be made as per actual work done at site based on the joint measurements.
14. On acceptance of tender, the earnest money will be adjusted in Security Deposit.
15. The tenderer shall submit the tender, who satisfies each and every condition laid down in the tender document, failing which; the tender is liable to be rejected.
16. MIDHANI reserve the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at his quoted rates.
17. The rate quoted shall be inclusive of all the levies/taxes. GST or any other tax and duties prevailing at the time of submission of tender in respect of this contract shall be borne by the contractor. MIDHANI will not entertain any claim whatever in this respect. In case of variation or change in tax structure after release of NIT, submission of tender, the revised tax structure shall be applicable. However, the adjustment in the contract price towards variation in the taxes shall be made by the purchaser on production of the documentary evidences by the supplier.

The present GST is 18%. However, if there is any change in GST viz, increase in tax or any new taxes / cess, same will be re-imbursed. However, if there is any decrease in present GST, the benefit will be passed on to MIDHANI.

18. The tender submitted shall remain valid for a period of 3 months from the date of opening of the tender. The tenderer shall not be entitled, during the said period of validity, to revoke or cancel his tender or vary the tender given or any item/conditions thereof, failing which the earnest money paid by the tenderer along with the tender shall be forfeited by MIDHANI.
19. The bidder shall bear all costs associated with preparation and submission of his Bid, and MIDHANI will in no case be responsible or liable for those Costs
20. All documents relating to the Bid shall be in the English language.

21. MIDHANI does not bind itself to accept the lowest or any tender or to give any reasons for their decision and to cancel the bidding process and reject all Bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for MIDHANI's action. This notice inviting tender shall form the part of the contract document.
22. The tenderer shall attend pre-bid meeting on 23-06-2018 at 11.30am in Purchase Department.

Pre-bid meeting

- a) The Bidder or his officially authorized representative is invited to attend a pre-bid meeting, which will take place as referred in Purchase Department.
- b) The purpose of the meeting is to clarify issues and to answer questions on matters that may be raised at that stage.
- c) The Bidder is requested to submit their questions / queries / clarifications in writing by email / fax/ post to reach MIDHANI not later than one week before the meeting.
- d) Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be transmitted without delay to all purchasers of the bidding documents. Any modification of the bidding documents which may become necessary as a result of the pre-bid meeting shall be made by MIDHANI exclusively through the issue of an Addendum only and not through the minutes of the pre-bid meeting.
- e) All bidders are advised to attend the pre bid meeting in their own interest failing which, it is deemed that they have understood all the terms & conditions & complete tender. No further queries will likely be entertained after the pre bid meeting.

23. Amendment of Bid Documents

- 23.1 Before the deadline for submission of bids, MIDHANI may modify the bidding documents by issuing addenda.
- 23.2 Any addendum so issued shall be part of the bid documents as well as Contract document and shall be communicated in writing by email / fax/post to all the purchasers of the bidding documents. Prospective Bidders shall acknowledge receipt of each addendum by email / fax to MIDHANI.
- 23.3 All the bidders must check the web site of MIDHANI/eprocurement for any changes/addendums before the date of submission of the tender. No excuse will be entertained in this regard. Thereafter no extra claim will be entertained on account of misunderstandings or what so ever.**
- 23.4 To give prospective Bidders reasonable time to take an addendum into account in preparing their bids, MIDHANI may extend the date for submission of bids, if necessary.

- 24 The tender application and related documents will be assessed to demonstrate convincingly that the applicant possesses the required experience, together with the technical, administrative and financial capability to perform the Contract and has good performance record in the relevant area. Applicants will not be considered if they have a poor performance record such as: abandoning of works; not properly completing /defaulting contracts, inordinate delays in completing contracts; litigation history, financial failure, etc. Midhani reserves the right to approach its previous clients for the purpose of this Contract.

The contractor shall be liable for any loss caused to MIDHANI due to financial or any other irregularities committed by self or the employee/ labour working under their contract.

25. *Language of the Bid*

- 25.1 All documents relating to the bid shall be in the English language.

26. OUR BANK DETAILS FOR ONLINE SUBMISSION OF EMD:

Name of the Firm : M/s. Mishra Dhatu Nigam Limited
 Bank Name : HDFC Bank Ltd.
 Branch Address : Lakdikapul Branch, Hyderabad.
 Account No. : 00210330000440.
 Bank IFSC Code : HDFC0000021
 MICR Code : 500240002.

P.S:- This notice inviting tender shall form the part of the contract document.

**For and on behalf of
 Mishra Dhatu Nigam Limited**

**(V.S.Ramgopal)
 Addl. General Manager (I/C Purchase)**

- Note : 1. The preamble for civil works tender is enclosed at annexure – I.
 2. Reference drawings along with list are enclosed at annexure - II.
 3. Tentative Time Schedule is enclosed for reference and the contractor has to sign the same and submit along with the tender as a token of acceptance.
 4. The soil strata information is enclosed at annexure-III.
 5. The construction drawings will be made available to the successful bidder at the time of contract agreement signing.

FORMS OF BID AND QUALIFICATION INFORMATION
CONTRACTOR'S BID
SUB: BID for the Work _____

To:

Dear Sir,

We offer to execute the Works described above in accordance with the Conditions of Contract accompanying the Bidding Document issued to us. The Earnest Money amounting to Rs (in figures) (in words) in accordance with the NIT is enclosed herewith (to be filled in by the Bidder).

This Bid and your written acceptance of it shall constitute a binding contract between us. We understand that MIDHANI is not bound to accept the lowest or any Bid receive.

We hereby confirm that this Bid complies with the Bid validity. We also confirm that E.M.D. and other required documentary evidences related to this part of the Bid are enclosed (As listed below) herewith either in original/ copies attested by Gazetted Officer/ copies duly authenticated by us with signature and seal along with affidavit as per the format provided in the bid document.

Yours faithfully,

Authorized Signature: _____

Name and Title of the Signatory: _____

Name of the Bidder : _____

Address: _____

Date: _____

(To be filled in by the Bidder)

Encl: i) E.M.D of Rs _____ Vide _____ dt

- ii)
- iii)
- iv)
- v)

FORMS OF BID AND QUALIFICATION INFORMATION**QUALIFICATION INFORMATION**

(The information to be submitted by all the Bidders)

1. Individual Bidders or Individual Members of Joint Ventures/Consortium**1.1 Constitution or Legal status of Bidder (attach copy)**

Place of registration: _____

Principal place of business: _____

Power of Attorney of signatory Bid: (attach)

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

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

1.3 Joint Venture /consortium details (if any):

Name of all partners of a joint venture/consortium
1. Lead Partner
2. Partner
3. Partner

NOTES: Joint Ventures/consortium must comply the following requirements:

- I. Following are the minimum qualification requirements for joint ventures:
 - a. The lead partners shall meet at least one completed work of 50% or two completed works of 40% of estimated cost projected in the tender stated in the bid document and correspondingly.
 - b. The other partners shall meet at least one completed work of 50% or one completed work of 40% of estimated cost projected in the tender stated in the bid document.
 - c. Credentials of both lead partner and other partner to be submitted.
 - d. Tender to be submitted in the name of lead partner for consortium and for JV, bid to be submitted in the name of JV.
- II. The formation of joint venture/consortium or change in the joint venture character / partners after submission of the bid and any change in the bidding regarding joint venture will not be permitted.
- III. Any bid shall be signed so as to legally bind all partners jointly and severally and bid shall be submitted with a copy of the Joint Venture /consortium providing the joint and several liabilities with respect to the contract.
- IV. The pre-qualification of a joint venture/consortium does not necessarily pre-qualify of its partners individually or as a partner in any other joint venture or association. In case of dissolution of a joint venture, each one of the firms

Source of Financing	Amount in Rs.
1.	
2.	

1.7 Evidence reports of the last three years: balance sheets, profit and loss statement, auditor's report etc. (Copies to be submitted and the following format be filled up) enclosed.

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

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

Sl.no	Description of equipment	Number	Any other relevant information

GENERAL CONDITIONS OF CONTRACT

CHAPTER – I

INTERPRETATION AND DEFINITIONS:-

In these General conditions of contract the following terms shall have the meaning hereby assigned to them except where the context otherwise requires.

CLAUSE 1:

Singular and Plural

Where the context so requires, words imparting the singular only also include the plural and vice versa.

CLAUSE 2:

Headings and Marginal Notes to Clauses

Headings and marginal notes to these General Conditions shall not be deemed to form part thereof or not be taken into consideration in interpretation or construction thereof or of the contract.

CLAUSE 3:

Definitions

- a. "CONTRACT" means tender and acceptance thereof, which include the following documents.

a)	Tender Notice	PAGE (2)
b)	Technical Bid format	PAGE (12)
c)	Terms of payment	PAGE (22)
d)	General Conditions of contract	PAGE (16)
e)	Special conditions of contract	PAGE (43)
f)	Specification for Structural steel & Civil work.	PAGE (50)
g)	Price Bid Format	PART-II
h)	Work Order	To be issued

Acceptance letter and any other conditions mutually accepted by the parties after issue of acceptance letter.

- b. "TENDER DOCUMENTS" means the Appendix a to g as aforesaid given to the Tenderers for the purpose of preparing their tenders.
- c. "THE CONTRACT SERVICES" means the services described in the tender documents / contract and in individual work order issued including all

- modifications, additional services and obligations to be carried out either at site or work places or other places as required for the performance of the contract.
- d. "THE SITE" means the land and other places on, in or through which the work is to be executed under the contract or any adjacent land, path or street which may be allotted to or used for the purpose of carrying out the contract.
- e. "ACCEPTING OFFICER" means an authority appointed by Employer empowered to accept or to reject the tender.
- f. 'ENGINEER-IN-CHARGE' means Engineer or assistant of the Employer appointed from time to time by the Employer to perform the duties like watch and supervise the works and to test and examine any material to be used or workmanship employed in connection with the works. Any written instruction or approval given by the Engineer-In-Charge or his Representative to the Contractor in connection with the works shall bind the Contractor as though it had been given by the Employer.
- g. 'EMPLOYER' means the Mishra Dhatu Nigam Limited, incorporated under the Companies Act 1956, having its registered office at Kanchanbagh P.O., Hyderabad- 500 058, in the State of Telangana and includes its successors in office and assigns.
- h. "Market Rate" shall be the rate as decided by the Engineer-In-Charge on the basis of the cost of materials and labour at the Site where the work is to be executed, plus the percentage mentioned in Schedule A to cover all overheads and profit. For material issued by "MIDHANI" the overheads and profit percentage shall be allowed @2.5%.
- i. "In writing" or "Written" means writing, typing, printing and lithography and any other mode of representing or reproducing words in a visible form.
- j. "Notice in Writing" or "Written Notice" means a notice is written, typed or printed characters sent (unless delivered personally or otherwise proved to have been received) by registered post /e-mail / Fax to the last known private or business address or registered office of the addresses and shall be deemed to have been received when in the ordinary course of post it would have been delivered.
- k. "Approved" means approved in writing, including subsequent written confirmation of previous verbal approval and "Approval" means approval in writing including as aforesaid.

SCOPE AND PERFORMANCE**CLAUSE 4:****a) Contract Documents:**

The Contractor shall furnish, free of charge, two certified true copies of the Contract Documents and the schedule of quantities and rates and of all further drawings which may be issued during the progress of the works. He shall keep one copy of these Documentation at the Site in good order, and the same shall at all reasonable times be available for inspection and use by the Engineer-in-Charge, his representative or by other inspecting Officers.

- b) None of these Documents shall be used by the Contractor for any purpose other than that of this Contract.
- c) The Contractor shall take necessary steps to ensure that all persons employed on any work in connection with this Contract have noticed that the Indian Official Secrets Act 1923. (XIX of 1923) applies to them and shall continue to apply even after the execution of such works under the Contract.

CLAUSE 5:**Works to be carried out****a) General:**

The Contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect strict accordance with the specifications. The Contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work assigned by the Engineer-In-Charge.

The works to be carried out under the Contract shall, except as otherwise provided in these conditions, include all the cost of all labour, materials, tools, plant and equipment, and transport, handling, re-handling, all taxes etc which may be required in preparation of and for the full and entire execution and completion of the works. The descriptions given in the Schedule of Quantities shall, unless otherwise stated, be held also to include wastage of materials, carriage and cartage, carrying in return of empties, hoisting, setting, fitting and fixing in position and all other labour etc necessary in and for the full and entire execution and completion as aforesaid & in accordance with technical specifications, good engineering practice and recognized principles.

In case of any class of work for which there is no such specifications as referred to above, such work shall be carried out in accordance with Bureau of Indian Standards Specifications. In case, there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturer's

specifications. In case there are no such specifications as referred to the above the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-Charge.

b) Engineering Data

The furnishing of engineering data by the Contractor shall be in accordance with the scope of work and schedule as specified in the technical specifications. The review of these data by the Engineer will cover only general conformance of the data to the specifications and documents. This review and/or approval by the Engineer shall not be construed by the Contractor, as limiting any of his responsibilities and liabilities for mistakes and deviations from the requirements specified under these specifications and documents.

CLAUSE 6:

Inspection of Site

The Contractor shall inspect and survey the Site and its surrounding and shall satisfy himself before submitting the tender as to the form and nature of the Site, the Bill of quantities, specifications and nature of work and material necessary for the completion of the works and the means of access to the Site. The accommodation he may require, if any, and in general shall himself obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect his tender. No extra charges consequent on any misunderstanding or otherwise shall be allowed.

CLAUSE 7:

Sufficiency of Tender

The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rate and prices quoted in the Schedule of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance (up to defect liability period) of the works.

CLAUSE 8:

Discrepancies and Adjustment of Errors

- a. The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawing being followed in preference to small-scale drawings and figured dimensions in preference to scale and Special Conditions in preference to General Conditions.

- b. In the case of discrepancy between Schedule of Quantities, the Specifications and/ or the Drawings, the following order of preference shall be observed:
- I. Description in Schedule of Quantities.
 - II. Particular Specifications and special Conditions, if any.
 - III. Drawings
 - IV. General Specifications
 - V. General conditions
- c. If there are varying or conflicting provisions made in any one document forming part of the Contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document.
- d. Any error in description, quantity or rate in Schedule of Quantities or any omission there from shall not vitiate the Contract or release the Contractor from the execution of the Whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the Contract.
- e. If on check there are found to be differences between the rates given by the Contractor in words and figures or in the amount worked out by him in the Schedule of Quantities and general summary, the same shall be adjusted in accordance with the following rules:-
- I. In the event of a discrepancy between description in words and figures quoted by a tenderer, the description in words shall prevail.
 - II. In the event of an error occurring in the amount column of Schedule of Quantities as a result of wrong extension of the unit rate and quantity, the unit rate shall be regarded as firm and extension shall be amended on the basis of the rate.
 - III. All errors in totaling in the amount column and in carrying forward totals shall be corrected.
 - IV. The totals of various sections of Schedule of Quantities amended shall be carried over to the General Summary and the tendering sum amended accordingly. The tendered sum so altered shall, for the purpose of tender, be substituted for the sum originally tendered and considered for acceptance instead of the original sum quoted by the tenderer. Any rounding off of the Quantities or in sections of Schedule of Quantities or in General Summary by the tenderer shall be ignored.
- f. If the bidder did not quote any rate for any items. The rate of such items will be considered as zero. The bidder is bound to execute the items at a zero price as it will be deemed that the rate /amount have been loaded on the other items.

CHAPTER – II**1. ASSIGNMENT OR TRANSFER OF CONTRACT:**

The contractor shall not without the prior written approval of the Accepting officer, assign or transfer the contract or any part thereof or any share, or interest therein to any other person. No sum of money which may become payable under the contract shall be payable to any person other than the contractor unless the prior written approval of the Accepting Officer to the Assignment or transfer is given.

2. SUB – CONTRACT

The contractor shall not sublet or Sub-contract any portion of the contract without the prior written approval of the Accepting Officer.

3. LAW GOVERNING THE CONTRACT:

The Indian laws shall govern this contract for the time being in force and as modified from time to time.

4. SUBMISSION OF AGREEMENTS, BANK GUARANTEES ETC.,

Any agreement, Bank guarantee required to be executed under this contract shall be made at the cost of the contractor with proper stamp duty as per the prescribed formats. However, MIDHANI have the right to alter, modify, and delete any materials in such formats as deemed fit.

5. JURISDICTION:

The contract and all questions, disputes or differences arising under or in connection with this contract, subject to Arbitration clause, shall be subject to the exclusive Jurisdiction of the courts within the local limits of Hyderabad, Telangana State, India.

6. CANCELLATION OF CONTRACT FOR INSOLVENCY ASSIGNMENT, TRANSFER OR SUBLETTING OF CONTRACT:

The Accepting Officer may without prejudice to any other right or remedy, which shall have accrued or shall accrue thereafter to MIDHANI , shall cancel the contract in any of the following cases:

If the contractor:

- a) Being an individual, or a firm, any partner thereof shall at any time be adjudged bankrupt or have receiving order or order for administration of his estate made against him or shall take any proceeding for liquidation of compensation under Bankruptcy laws for the time being in force or makes any conveyance or assignment of his effects of composition or arrangement for the benefit of his creditors or proposes to do so, or if any application be made under any Bankruptcy laws for the time being in force for the sequestration of his estate or if a trust deed be granted by him or be MIDHANI of his creditors or
- b) Being a company, shall pass resolution or the court shall make an order for the liquidation of its affairs, or a receiver or Manager on behalf of the Creditors shall be

appointed or circumstances shall arise which entitles the court or Creditor to appoint a receiver or manager or

- c) Assigns, transfers, sublets/Sub-contract or attempts to assign, transfer or sublet any portion of the work without the prior written approval of the Accepting officer. Whenever the Accepting Officer exercises his authority to cancel the contract under this conditions, he may complete the work by any means at the completion (as certified by MIDHANI which is final and conclusive) being less than the contract cost, the advantage shall accrue to the MIDHANI and that if the cost of completion exceeds the money due to the contractor shall either pay the excess amount ordered by the MIDHANI or the same shall be recovered from the contractor by other means.

7. Method of measurement

- a) Except where any general or detailed description of the work expressly shows to the contrary, measurement shall be taken in accordance with the procedure set forth in Specifications, notwithstanding any provision in the relevant Standard Method of Measurement or any general or local custom. In the case of items which are not covered by the Schedule of Rates/Specification, measurement shall be taken in accordance with the relevant Standard Method of Measurement issued by the Bureau of Indian Standards and if for any item no such standard is available, then a mutually agreed method shall be followed. However in no case whatsoever the bidder can refuge to execute the items including extra/additional items.

b) Payment on Account

Twelve running bills/interim bills, 10 material advance bills & a final bill will be paid during contract period.

- c) Interim bill/ RA bill shall be submitted by the Contractor for the work executed on the basis of such recorded measurement on the format of "MIDHANI" at intervals mentioned in Schedule A on or before the date fixed by the Engineer-in-Charge. The Engineer-in-Charge shall then arrange to have the bill verified. Twelve R. A Bills, Ten material advance bills and one Final Bill will be paid. Material advance equivalent to 75% of the landed cost of material brought to the site (excluding transport & tax) against TMT/MS/Embedment/insert Steel and Cement will be paid. The contractor has to furnish all material bills along with each bill (if any). To expedite the processes, bills may be submitted in soft copy & after verification, two hard copies to be submitted

Material advance for the cement supplied to RMC will be made if batching plant is established at MIDHANI site.

The material advance will be recovered on pro-rata basis in R.A. bills as per consumption at site. However, entire material advance bills will be recovered on or before the pre-final bill irrespective of consumed/unused.

d) Payment "On Account" for amount admissible shall be made, on the Engineer-in-Charge certifying the sum to which the Contractor is considered entitled by way of interim payment for the following:-

i. For works: All work executed, after deducting there-from the amounts already paid, the retention money and such other amounts as may be deductible or recoverable in terms of the Contract. The running bills / material advance bills for works will be paid within 15 working days from the date of submission of the verified/certified bills by the Engineer.

ii. **Mobilization Advance:**

10% of basic work order value can be paid as mobilization advance against submission of Bank Guarantee(s) of equivalent value plus interest @ 14% p.a. which should be valid upto tenure of contract. Mobilization advance along with interest shall be recovered from each R.A. bill in 10 R.A. bill installments.

e) Payment of the Contractor's on account bill shall be made by "MIDHANI" within 30 days from the date of submission of the bill subject to the acceptance of the same by the Engineer-in-charge.

f) Any interim bill paid, relating to work done, may be deducted or adjusted in subsequent interim bill or in the final bill. No certificate of the Engineer-in-Charge recommending for interim payment shall itself be conclusive evidence that the work or materials to which it relates is/are in accordance with the Contract.

g) Pending consideration of extension of date of completion, interim payments shall continue to be made as herein provided, without prejudice to the right of "MIDHANI" to take action under the terms of the contract for delay in the completion of work, if the extension of date of completion is not granted by the competent authority.

h) **Time Limit for Payment of Running Bill & Final Bill**

1. The running bill will be paid within 15 working days from the date of certification of Engineer-in-Charge. And that of the final bill shall be submitted by the Contractor within 90 days of physical completion of the works and payment for final bill will be made within 30 working days from the date of certification of Engineer-in-Charge. No further claims shall be made by the Contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payment of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and at rates as approved by the Engineer-in-Charge, shall be made within the period of Six months specified hereunder. The period shall be reckoned from the date of receipt of the correct bill by the Engineer-in-Charge.

2. After payment of the amount of the final bill as aforesaid has been made, the Contractor may, if he so desires, reconsider his position in respect of the disputed portion of the final bill and if he fails to do so within 90 days, his disputed claim shall be deemed to be waived & extinguished and will be dealt with as provided in the Contract.

i) **Price Escalation Clause: Not applicable for this tender**

j) **Deviations/Variations Extent & Pricing:**

I. The Engineer-In-Charge shall have power

a. to make alteration in, omission from, additions to, or substitutions for the original specifications, drawings, instructions that may appear to him to be necessary or advisable during the progress of the work, without effecting the cost.

b. to omit a part of the Works in case of non-availability of a portion of the Site or for any other reasons, and the Contractor shall be bound to carry out the Works in accordance with any instructions given to him in writing signed by the Engineer-In-Charge and such alterations, omissions, additions or substitutions, shall form part of the Contract as if originally provided therein and any altered, additional or substituted work which the Contractor may be directed to do in the manner above specified as part of the works, shall be carried out by the Contractor on the same conditions in all respects including price on which he agreed to do the main work.

Any alterations, omissions, additions or substitutions which radically change the original nature of the Contract shall be ordered by the Engineer-In-Charge as a deviation and in the event of any deviation being ordered, which in the opinion of the Contractor changes the original nature of the Contract, he shall nevertheless carry it out and the disagreement, if any, as to the nature of work and the rate to be paid therefore shall be resolved in accordance with Arbitration.

II. The time for completion of the works shall, in the event of any deviations resulting in additional cost over the Contract Sum being ordered be extended as follows, if requested by the Contractor.

a. in the proportion which the additional cost of the altered, additional or substituted work, bears to the original Contract Sum; plus

b. Appropriate percentage of the time calculated in (a) above or such further additional time as may be considered reasonable by the Engineer-In-Charge.

III. Rates for such altered, additional or substituted work shall be determined by the Engineer-In-Charge as follows:-

IV. If the rate for altered, additional or substituted item of work is specified in the Schedule of Quantities, the Contractor shall carry out the altered, additional or substituted item at the same rate. In the case of composite tenders, where two or more Schedule of Quantities may form part of the Contract, the applicable rate shall be taken from the Schedule of Quantities of that particular part in which the deviation is involved, failing that at the lowest applicable rate for same item of work in the other Schedule of Quantities.

V. If the rate for any altered, additional or substituted item of work is not specified in the Schedule of Quantities, the rate for that item shall be derived from the rate for the nearest similar item specified therein. In case of composite tenders where two or more Schedule of Quantities form part of the Contract, the rate shall be derived from the nearest similar item in the Schedules of Quantities of the particular part of works in which the deviation is involved, failing that from the lowest of the nearest similar items in other Schedule of Quantities.

VI. If the rate for any altered, additional or substituted item of work cannot be determined in the manner specified in sub-paras IV and V above, then such item of work shall be carried out at the rate entered in the Schedule of Rates available with Engineer-In-Charge, plus/minus the percentage by which the tendered amount of the works actually awarded is higher or lower than the estimated amount of the works actually awarded.

VII. If the rate for any altered, additional or substituted item of work cannot be determined in the manner specified in sub paras IV and V above, then the rate for such item of work shall be derived from the Schedule of Rates specified in sub-Para VI above plus/minus the percentage mentioned in that sub-Para. In the case of materials issued by "MIDHANI" issues rates of materials, with storage charges recovered, enhanced by 2.5% for profits and overheads shall be adopted in place of schedule rate plus percentage specified in sub Para VI. Provided always that if rate(s) for part(s) of the item(s) is/are not available in the Schedule of Rates specified above, the rate(s) for parts of such items shall be determined on the basis of market rate(s) prevailing during the fortnight following the date of the order plus 10% for profit and overheads.

VIII. If the rate for any altered, additional or substituted item of work cannot be determined in the manner specified in sub-paras IV to VII above, the Contractor shall within 14 days, of the date receipt of the order to carry out the said work, inform the Engineer-In-Charge the rate which he proposes to claim for such item of work, supported by analysis of the rate claimed, and the Engineer-In-Charge shall, within 90 days thereafter, after giving due consideration to the rate claimed by the Contractor, determine the rate on the basis of market rate(s). In the event of the Contractor failing to inform the Engineer-in-Charge within the stipulated period of time, the rate which he proposes to claim, the rate for such item shall be determined by the Engineer-In-Charge on the basis of market rate(s).

IX. A) Except in case of items of work below ground surface, as it exists at the time of commencement of work (see IX (b) below) provisions contained in sub-clause IV to VIII above shall not apply to contract, altered or substituted items as individually exceed the deviation limit specified in Schedule 'A' subject to the following

- i. Deviation limit shall apply to individual items. The variation limit shall be +25% on higher side and – 50% on the lower side of the BOQ. However, for earthwork excavation, hard rock excavation variation limits will be $\pm 100\%$.
- ii. the value of additions of items, of any individual trade not already included in the Contract, shall not exceed 10% of the tendered value of work, subject to overall deviation limit as provided in IX (a) above.

Provided further that in case where the original item is substituted, the Substituted Item shall be deemed to have replaced the original item in the contract itself to that extent and above provisions pertaining to the deviation shall apply with respect to such Substituted Item and not the original item.

b) In case of items of work below ground surface as it exists at the time of commencement of work, quantities of which may change due to site conditions, provisions contained in sub-clause IV to VIII above shall not apply to;

- i. The value of any item of any individual trade which exceed by more than the percentage mentioned in Schedule 'A' of the value of that trade, included in the Contract, as a whole, unless the Contractor and the Engineer-In-Charge agree to a higher percentage for any particular item.
- ii. the value of item not included in the Contract in excess of 10% of the tendered value.

Note: - Individual trade means sub-heads into which the Schedule of Quantities as provided in the Contract has been divided and in the absence of any such provisions in the Contract, the sub-heads as given in the Schedule of Rates.

k) **Determination of Rates:**

In the case of contract items, substituted items, contract-sub-substituted items, or additional items which exceed the limits laid down in sub-para J(IX) above, the Contractor may, within fourteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis, for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the Scheduled of Quantities or of those derived in accordance with the provisions of sub-para J(IV) to J(VII) by more than five percent, inform the Engineer-In-Charge and the Engineer-In-Charge shall within ninety days of receipt of claim supported by analysis, after giving consideration to the analysis of the rates submitted by the Contractor, determine the rates on the basis of market rates and if the rates so determined exceed the rates specified in the Schedule of Quantities or those derived in accordance with the provisions of sub-paras J(IV) to J(VII) by more than five percent, the Contractor shall be paid in accordance with the rates so determined. In the event of the Contractor failing to claim revision of rates within the stipulated period, or if the rates determined by the Engineer-In-Charge within a period of ninety days of receipt of the claim supported by analysis are within 5% of

the rates specified in the Schedule of Quantities or of those determined in accordance with the provisions of sub-paras J(IV) to J(VII)., the Engineer-In-Charge shall make payment at the rates as specified in the Schedule of Quantities or those already determined under sub-paras J(IV to VII) for the quantities in excess of the limits laid down in sub-para J(IX).

l) Suspension of Works

- 1) The Contractor shall, on receipt of the order in writing of the Engineer-In-Charge suspend the progress of the works or any part thereof for such time, and in such manner as the Engineer-In-Charge may consider necessary for any of the following reasons:
 - I. on account of any default of the Contractor, or
 - II. for proper execution of the works or part thereof for reasons other than the default of the Contractor, or
 - III. for safety of the works or part thereof,

The Contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-In-Charge.

- 2) If the suspension is ordered for reasons (ii) and (iii) in Sub para (1) above, the Contractor shall be entitled to an extension of the time only equal to the period of every such suspension plus 25%.
- 3) If the works or part thereof is suspended on the orders of the Engineer-In-Charge for more than 90 days at a time, except when suspension is ordered for reason (1) (i) above, the Contractor may after receipt of such order serve a written notice on the Engineer-In-Charge requiring permission within fifteen days from receipt by the Engineer-In-Charge of the said notice, to proceed with the works or part thereof in regard to which progress has been suspended and if such permission is not granted within that time, the Contractor, if he intends to treat the suspension, where it affects only a part of the works as an omission of such part by "MIDHANI" under paras (j & k) or where it affects the whole of the Works, as an abandonment of the works by "MIDHANI" shall within 10 days of expiry of such period of 15 days give notice in writing of his intention to Engineer-In-Charge. In the event of the Contractor treating the suspension as an abandonment of the Contract by "MIDHANI" he shall have no claim to payment of any compensation on account of any profit or advantage which he may have derived from the execution of the work in full but which he could not derive in consequence of the abandonment. He shall, however, be entitled to compensation, as the Engineer may consider reasonable, in respect of salaries and/or wages paid by him to his employees and labour at Site, remaining idle in consequence and of materials collected which could not be utilized on the works, adding to the total thereof the percentages mentioned in Schedule A to cover indirect expenses of the Contractor, provided the Contractor submits his claim supported by the details to the Engineer-In-Charge within 28 days of the expiry of the period of 90 days.

8. Over payments & under payments

a. Wherever any claim for the payment of a sum of money to "MIDHANI" arises out of or under this Contract against the Contractor, the same may be deducted by "MIDHANI" from any sum then due or which at any time thereafter may become due to the Contractor under this Contract and failing that under any other Contract with "MIDHANI" or from any other sum due to the Contractor from "MIDHANI" which may be available with "MIDHANI" or from his retention money; or he shall pay the claim on demand.

b. "MIDHANI" reserves the right to carry out post payment audit and technical examination of the final bill including all supporting vouchers, abstracts etc. "MIDHANI" further reserves the right to enforce recovery of any overpayment when detected, notwithstanding the fact that the amount of the final bill may be included by one of the parties as an item of dispute before an arbitrator appointed under of this Contract and notwithstanding the fact that the amount of the final bill figures in the arbitration award.

c. If as a result of such audit and technical examination any overpayment is discovered in respect of any work done by the Contractor or alleged to have been done by him under the Contract, it shall be recovered by "MIDHANI" from the Contractor by any or all of the methods prescribed above. If any under-payment is discovered, the amount shall be duly paid to the Contractor by "MIDHANI".

d. Provided that the aforesaid right of "MIDHANI" to adjust over payments against amounts due to the Contractor under any other Contract with "MIDHANI" shall not extend beyond the period of two years from the date of payment of the final bill or in case the final bill is a MINUS bill, from the date the amount payable by the Contractor under the MINUS final bill is communicated to the Contractor.

e. Any amount due to the Contractor under this Contract for under-payment may be adjusted against any amount then due or which may at any time thereafter become due before payment is made to the Contractor, from him to "MIDHANI" on any other Contract or account whatsoever.

f. The Contractor shall be deemed to have given its consent for adjustment of the dues payable to the contractor in other contracts of "MIDHANI", against the liability or outstanding dues in respect of this contract. Similarly, the Contractor gives its consent to adjust/set off the dues payable in this contract against the outstanding dues recoverable by "MIDHANI" from the contractor in other contract of "MIDHANI".

g. All sums payable by way of compensation under any of the conditions of contract shall be considered as reasonable compensation to be applied to the use of "MIDHANI" without referenced to the actual loss or damage sustained and whether or not any damage shall have been sustained.

h. The R.A bill will be considered as an advance payment against the final bill. The Engineer will have a right to adjustment of any error, over/under payments in subsequent bills.

9.

a) SECURITY DEPOSIT : The successful tenderers has to deposit 5% of contract value as Security Deposit at the time of agreement. This 5% Security Deposit can be paid online through link <http://ebs.in/midhani/public> or visit midhani website

www.midhani.com> purchase > Tenders > Security Deposit or contractor can deposit Bank Guarantee from any nationalized bank. The validity of B.G shall be equivalent to contract period plus three months claim period. Further, EMD deposited will be adjusted against the 5% Security Deposit & this 5% Security Deposit will be released after satisfactory completion of work, Site clearance and cleaning by the contractor duly certified by Engineer- In- Charge.

b) RETENTION MONEY:

A sum of 5% of each Running Bill & Final bill will be deducted from the bills payable to contractor. The EMD deposited will be adjusted against this Retention money and the same will be refunded after the issue of the No defects certificates to the contractor for all the contracts under the scope of the contract i.e after defect liability period of One year. Retention money can be released against submission of bank guarantee equal to amount of Retention Money. The validity of BG shall be up to defect liability period + 3 months claim period. Any defect developed during the guarantee period has to be rectified free of cost by contractor as soon as notice received from MIDHANI. Failing which MIDHANI will carry work at the cost & risk of contractor and deduct the same from Retention Money or any form of contractor money available with MIDHANI.

PS : The Guarantee period for water proofing work will be five years (05) from the date of completion of work. Contractor has to give the Guarantee for water proofing on Rs. 100/- stamp paper.

10. TIME and Extension for Delay:

Time is essence of contract and as such, the contractor shall strictly adhere to the time schedule specified in the tender documents / work order. Also, the contractor shall provide all documents, working drawings, employing technical experts time to time to keep the progress of work in good process enabling to complete the contract in time. **The entire work in "CONSTRUCTION OF MACHINE FOUNDATIONS IN WIDE PLATE MILL FACILITY, MIDHANI" is to be completed within** total 12 months (staggered) from the date of handover of site as placed below;

1. Package (a)	- 7 Months
2. Package (b)	- 3 Months
3. Package (c)	- 11 Months
4. Package (d)	- 7 Months
5. Package (e)	- 12 Months

Please note that the start date for all packages a, b, c, d & e are counted from the date of handover of site issued separately.

10.1 The time allowed for execution of the works as specified above or the extended time shall be the essence of the Contract. The execution of the works shall commence from the 10th day after the date on which "MIDHANI" issues written orders to commence the work or such time period as mentioned in the Letter of Award or from the date of handing over of site whichever is later. If the Contractor commits default in commencing the execution of

the work as aforesaid; "MIDHANI" shall without prejudice to any other right or remedy be at liberty to forfeit the earnest money absolutely.

10.2 As soon as possible after the Contractor is concluded the Engineer-In-Charge and the Contractor shall agree upon a Time and Progress Chart. The Chart shall be prepared in direct relation to the time stated in the Contract document for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades or sections of the work and may be amended as necessary by agreement between the Engineer-In-Charge and the Contractor within the limitations of time imposed in the Contract documents. Such defined intermediate milestones will form the basis for monitoring the progress and to initiate such corrective/penal measures as may be decided by the Engineer-In-Charge which shall be final & binding. Further to ensure good progress during the execution of the work, the Contractor shall in all cases in which the time allowed for any work exceeds 30 days (same for special jobs) complete 1/8th of the whole of the work before 1/4th of the whole time allowed in the Contract has elapsed; 3/8th of the work before one half of such time has elapsed and 3/4th before 3/4th of such time has elapsed.

10.3 If the work(s) be delayed by:-

a. **Force majeure:**

If at any time during the continuance of this Contract, the performance in whole or in part, neither party shall be liable of performance under this Contract, any obligations under the Contract of any party, if such performance is prevented or delayed due to reasons beyond such party's control, including but not limited to acts of God, fire, flood, earthquake other natural catastrophes, any law, order, regulation, direction, action of any civil or military authority, national emergencies, insurrections, riots, war (whether declared or not), hostility, acts of the public or enemy, civil commotion, sabotage, explosion epidemic, quarantine restrictions, strikes and lock-outs, work stoppage or other labour difficulties, absence of the usual means of communication or transportation (hereinafter referred to as 'eventuality') provided however the party to which the force majeure has happened shall use commercially reasonable efforts to eliminate such an event.

Force majeure shall also be deemed in the event of any regulatory decision or government order requiring the either party to suspend its service(s) or operation(s) for any reasons whatsoever.

Notice of the happening of any such eventuality or force majeure as mentioned herein shall be given by either party to the other within fifteen (15) days from the date of the occurrence thereof along with supporting proof of the occurrence of the Force Majeure event, neither party shall, by reason of such eventuality, be entitled to terminate this Contract, nor shall either party have any claim for damages against the other in respect of such non-performance, or delay in performance, and the work under this Contract shall be resumed as soon as practicable after such eventuality has come to an end or ceased to exist, and the decision of the

Purchaser as to whether the work has been so resumed shall be final and conclusive.

The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance it prevented, hindered or delayed. The time for completion shall be extended by number of days the party giving notice was prevented from performing his obligation due to Force Majeure, in accordance with Clause 10(g) hereof.

Should one or both parties be prevented from fulfilling their contractual obligations by a state of force majeure lasting continuously for a period of at least six (6) months, both the parties shall consult each other regarding the further implementation of the Contract, provided always that, if no mutually agreed arrangement is arrived at within a period within three (3) months from the expiry of the six (6) months referred to above, the Contract shall be deemed to have expired at the end of the said six (6) months referred to above. The above mentioned expiry of the Contract will imply that both the parties have the obligation to reach an agreement regarding the winding up and financial settlement of the Contract..

- b. abnormally bad weather, or heavy rains, or
- c. serious loss or damage by fire, or
- d. Civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or
- e. delay on the part of other contractors or tradesmen engaged by "MIDHANI" in executing work not forming part of the Contract, or
- f. non-availability of stores, which are responsibility of "MIDHANI" to supply or
- g. any other cause which, in the absolute discretion of the authority mentioned in Schedule A, is beyond the Contractor's control; then, upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-In-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-In-Charge to proceed with the works.

10.4 Request for extension of time, to be eligible for consideration shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

10.5 In any such case the authority mentioned in Schedule A may give a fair and reasonable extension of time for completion of the work. Such extension shall be communicated to the Contractor by the Engineer-In-Charge in writing, within 90 days of the date of receipt of such request, by the Engineer-In-Charge.

11. Liquidated Damages (L.D)

If, in the opinion of the competent authority, there is a delay in completion of work due to the reasons attributable to the contractor or any failure of contractor in any way whatsoever, LD is leviable @ 1% per week or part thereof subject to a maximum of 10% of Purchase Order/ Contract price with Taxes and duties.

However, the competent authority in his opinion felt that the work is delayed due to reasons which is solely attributable to MIDHANI and absolutely beyond the control of the contractor, shall grant the fair & reasonable extension of time to the contractor. The decision of the competent authority in this respect will be final & binding on the contractor.

- i. If the Contractor fails to maintain the required progress in terms of Clause 10 or to complete the work and clear the site on or before the Contract or extended date of completion, the Contractor shall, without prejudice to any other right or remedy available under the law to "MIDHANI" on account of such breach, pay as agreed compensation amount calculated as stipulated above or such smaller amount as be fixed by the authority mentioned in Schedule 'A' (Whose decision shall be final & binding) on the Contract Value of the work for every week that the progress remains below that specified in Clause 10 or that the work remains incomplete.

This will also apply to items or groups of items for which separate period of completion has been specified.

For this purpose, the term 'Contract Value' shall be the value at contract rates of the work as ordered.

- ii. Completion period (as originally @ 0.5% per week stipulated) not exceeding 21 months.
- iii. Provided always that the total amount of damages for delay to be paid under this clause shall not exceed 7.5% of the total value of the work done or of the Contract Value of the item or group of items of work for which a separate period of completion is specified.
- iv. The amount of compensation may be adjusted or set- off against any sum payable to the Contractor under this or any other contract(s) with "MIDHANI". For the purpose of such adjustment/set off, it shall be deemed that the Contractor has given its free consent.
- v. **Reduction of Liquidated Damages:**
If before the completion of the whole of the works or any part of the works has been certified by the Engineer- in- Charge as completed as per the time stipulated hereof and occupied or used by the employer, the value of the whole of the works for the purpose of calculating the liquidated damages shall be reduced by the value of the part so certified by the Competent Authority.

12. Defects Liability Period

The Contractor shall be responsible to make good and remedy at his own expense within such period as may be stipulated by the Engineer-In-Charge, any defect

which may develop or may be noticed before the expiry of 12 months from the certified date of completion and intimation of which has been sent to the Contractor within ten days of the expiry of the said period by a letter sent by hand delivery or by registered post. However, guarantee for water proofing period will be five years from the date of completion.

13. ARBITRATION:

Except where, otherwise provided for in the contract, all questions and disputes relating to the meaning of the specifications designs, drawings and instructions herein before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or otherwise concerning the works, or the execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitration of the Chairman & Managing Director / Director (P&M) and if the Chairman & Managing Director / Director (P&M) is unable or unwilling to act, to the sole arbitration of some other persons appointed by the Chairman & Managing Director / Director (P&M) willing to act as such arbitrator. The arbitrator to whom the matter is originally referred being transferred or vacating his office or being unable to act for any reason, such Chairman & Managing Director / Director (P&M) as aforesaid at the time of such transfer, vacation of office or inability to act, Shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall entitle to proceed with the reference from the stage at which his predecessor left it.

Subject as aforesaid the Provisions of the Arbitration & Contractual Act 1996, or any statutory modification or enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings under this clause.

It is a term of the contract that the party invoking arbitration shall specify the dispute or disputes to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute.

14. Contract Signing:- The successful contractor is required to conclude a contract agreement on a non-judicial stamp paper of Rs. 100.00 on award of the contract in the prescribed format approved by MIDHANI within 10 days time from the date of receipt of work order.

a) Language shall be English: All documents relating to the bid shall be in the English language.

15. CANCELLATION OF CONTRACT FOR DEFAULT OF THE CONTRACTOR:

a) If the contractor makes default in commencing the service within the time specified, or if; the contractor in the opinion of MIDHANI during the current contract

makes default in proceeding with the contract services which includes construction for completion of civil construction works of the project or progress of the services is slow, or the services are poor of, if the contractor fails to comply with any of the terms and conditions of the contract, or fails to complete the services in part or full or fails to achieve the progress as set out under the contract or abandons the contracts or otherwise commits any breach of contract, MIDHANI will cancel the contract as a whole or in part without any prior notice to the contractor at the sole cost, risk and expense of the contractor and get the balance services/work executed either by MIDHANI itself, or by another contractor or through any other agency/agencies as deemed fit. In such an event, the contractor shall be liable to make good and compensate all losses, expenses whatsoever, incurred or to be incurred by MIDHANI besides forfeiture of EMD / Retention Money.

- b) In the event of cancellation of contract as above and the completion of the contract services either by MIDHANI or by another contractor or through any other agency / agencies, if the cost of completion works out less than the cost under this contract, the advantage shall accrue to MIDHANI.

16. CANCELLATION OF CONTRACT FOR DEATH ETC.,

Without prejudice to any of the rights or remedies under this contract, if the contractor dies or attains legal disability, MIDHANI shall have the option of canceling the contract without any compensation to the contractor or any his legal heirs / successors and without any prior notice.

16.1 SPECIAL POWERS OF CANCELLATION OF CONTRACT / FORECLOSURE OF CONTRACT:

If at any time after acceptance of the tender/ during award of work, during currency of contract, MIDHANI feels that for any reasons whatsoever, if the whole or any part of the contract services is not required to be carried out, notice shall be given in writing of the fact to the contractor and upon receipt of such notice the contractor shall stop the execution of such services as indicated in the notice forthwith. The contractor shall have no claim to any payment of compensation or otherwise whatsoever on account of any profit or advantage which he might have derived from the execution of the services in full, but which he did not derive in consequence of the foreclosing of the services / contract. Contractor shall be paid at contract rates for the full amount of the work executed including such additional services as may be rendered necessary by said foreclosing.

- 16.2 In the event of contractor commits any breach of any terms of this contract, MIDHANI will terminate the contract and on such termination, the balance work will be got done through other agency at the cost and risk of contractor. Further, any loss occurred due to the above will be recoverable from the contractor.

- 16.3 The contractor shall further keep indemnified and harmless against any claims or liabilities arising out of eventualities in connection with injuries / death to the workmen or any member engaged by or under the control of contractor. MIDHANI will not have any liabilities under the Employee's compensation Act or any other provision

of law statutory or otherwise. Any expenditure incurred by MIDHANI in this connection shall have to be fully indemnified by the contractor.

- 16.4 (a) Recoveries shall also be affected from the contractor on account of any over payment detected at any stage as a result of technical examination, audit study, vigilance inspection / investigation.
- (b) Recoveries shall be affected from the contractor on account of any losses suffered under the provision of section – 73 of the Indian Contract Act 1982.
- (c) The contractor will be liable for debar from the future contracts for a specified number of years or total ban depending on the gravity of the lapses.

17. ORDERS UNDER THE CONTRACT AND COMMUNICATION OF ORDERS:

All orders, notices etc. to be given under the contract shall be in writing and if sent by registered post to the contractor to any of the addresses given by the Tenderer or to the last known address of the Tenderer, shall be deemed to have been served on him. Any communication under this contract on any matter whatsoever under the signature of Senior Manager / Dy. General Manager / Engineer in-charge or any officer authorized by General Manager(Projects), MIDHANI, Hyderabad for such communication shall be deemed to have been issued with the approval of the Accepting officer.

18. DEFECTIVE SERVICE/WORK:

Any defects observed or otherwise brought to the notice of the Engineer-in charge of MIDHANI be investigated or caused to be investigated in detail by any of the reputed institutes / specialist organizations approved by the MIDHANI at the cost and risk of the contractor. The defective work/services will be rectified by the contractor immediately at his own cost.

It shall be incumbent upon the contractor to propose remedial measures thereof and obtain the acceptance of the reputed approved institute or the specialist organization to such measures before the corrective action is allowed to be undertaken.

19. Quality of materials & Workmanship and Tests

All materials & workmanship shall be of the respective kinds described in the contract & in accordance with the Engineer's-In-Charge (E-I-C's) instructions and shall be subjected from time to time to such tests as E-I-C's or his representative may direct at the place of manufacture or fabrication or on site or at all or any such places/approved laboratories. The entire cost of such tests will be borne by the contractors. For bought out items, the contractor shall produce the manufacturer's certificate or test certificate. The contractor shall provide at his own cost such assistance, instruments, machines, labour and material as are normally required for examining, measuring & testing any work and the quality, weight or quantity of any material used & shall supply samples of materials before incorporation in the works for testing, as may be selected and required by the E-I-C's or his representative.

Cost of Samples

- a. All samples shall be supplied by the Contractor at his own cost.
- b. The cost of making any test shall be borne by the Contractor if such test is clearly intended by or provided for (as mentioned in code & specification), in the Contract.

20. Labour

- 20.1** The Contractor shall employ labour in sufficient numbers to maintain the required rate of progress and of quality to ensure workmanship of the degree specified in the Contract and to the satisfaction of the Engineer-In-Charge. The Contractor shall not employ in connection with the works any person who has not completed eighteen years of age.
- 20.2** The Contractor shall furnish to the Engineer-In-Charge, fortnightly a distribution return of the number and description by trades of the workers employed on the works.

The Contractor shall also submit on the 4th and 19th of every month to the Engineer-In-Charge a true statement showing in respect of the preceding fortnight, (i) the accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused by them and (ii) the number of female workers who have been allowed maternity benefit as provided in the Maternity Benefit Act, 1961 or Rules made there under and the amount paid to them.

- 20.3** The Contractor shall pay to labour employed by him either directly or through sub-contractors, wages in accordance with the rules, regulations and the law in force relating to the payment of wages for the workers and also to monitor the compliance of rules, statutory payments etc by the sub contractor.
- 20.4** The Contractor shall comply with the provisions of the Payment of Wages Act, 1936, the Minimum Wages Act, 1948, The Employer's Liability Act, 1938, The Employee's Compensation Act, 1923, The Industrial Disputes Act, 1947, The Maternity Benefit Act, 1961, The Factories Act 1948, The Contract Labour (Regulation & Abolition) Act, 1970, or any modification thereof or any other law relating thereto and rules framed there under from time to time.
- 20.5** The Contractor shall be liable to pay his contribution and the employees contribution to the State Insurance Scheme & Provident Fund in respect of all labour employed by him for the execution of the Contract, in accordance with the provisions of "The Employees State Insurance Act, 1948" and EPF & MP (Employee's Provident Fund & Minimum Provision act of 1952) as amended from time to time. In case the Contractor fails to submit full details of his account of labour employed and the contribution payable, the Engineer-In-Charge shall recover from the running bills of Contractor an amount of contribution as assessed by him. The amount so recovered shall be adjusted against the actual contribution payable for Employees State Insurance & EPF & MP Act.

- 20.6** The Engineer-In-Charge shall, on a report having been made by an Inspecting Officer as defined in the Contractor Labour (Regulation & abolition) Act 1970, have the power to deduct from the moneys due to the Contractor Labour Regulations, have the power to deduct from the moneys due to the Contractor any sum required or estimated to be required for making good the loss suffered by a worker(s) by reason of non-fulfillment of the conditions of the Contract for the benefit of worker(s), non-payment of wages or of deductions made from his or their wages which are not justified by the terms, of the Contract or non-observance of the said Contractors Labour Regulations.
- 20.7** In every case in which by virtue of the provisions sub-section(1) of Section 12, of The Workmen's Compensation Act, 1923, "MIDHANI" is obliged to pay compensation to a workman employed by the Contractor, in execution of the works, "MIDHANI" will recover from the Contractor the amount of the compensation so paid, and, without prejudice to the rights of "MIDHANI" under sub-section (2) of Section 12, of the said Act, "MIDHANI" shall be at liberty to recover such amount or any part thereof by deducting it from the retention money or from any sum due by "MIDHANI" to the Contractor whether under this contract or otherwise. "MIDAHNI" shall not be bound to contest any claim made against it under sub-section (1) of Section 12 of the said Act, except on the written request of the Contractor and upon his giving to "MIDHANI" full security for all costs for which "MIDHANI" might become liable in consequence of contesting such claim.

20.8 INSURANCE

20.8.1 General Requirements for Insurances

- 20.8.1.1 The Contractor shall provide in the joint names of MIDHANI and the Contractor, insurance cover from the date of commencement of work to the end of the Defects Liability Period. The Contractor is liable to take **Contractor's all risk policy** for the whole contract value. The insurance amount shall also cover third party liability to the extent, if any as specified in Schedule A. In addition to this the contractor shall also take Employee Compensation Policy for employees.
- 20.8.1.2 Policies /certificates of insurance shall be delivered in original by the Contractor to the Engineer-in-charge before the date of commencement of work. In case of failure by the Contractor, no payment against the running bill shall be released till the submission of the policies / certificates of insurance. All such insurances shall provide for compensation to be payable in the types and proportions for which these policies are intended.
- 20.8.1.3 The Contractor shall provide premium receipts to the Engineer-in-Charge from time to time, as a proof that he has paid the necessary premiums for keeping the policies alive till expiry of the Defects Liability Period.

- 20.8.1.4 The Contractor shall ensure that similar insurance policies are taken out by his Sub-Contractors(if any) and shall be responsible for any claims or losses to MIDHANI resulting from their failure to obtain adequate insurance protection in connection thereof. The Contractor shall produce or cause to be produced by his Sub-Contractors (if any) as the case may be, the relevant policy or policies and premium receipts as and when required by the Engineer-in-Charge.
- 20.8.1.5 Alterations to the terms of insurance shall not be made without the approval of the Engineer-in-charge.
- 20.8.1.6 Both parties shall comply with all conditions of the insurance policies.
- 20.8.1.7 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the execution of the Contract shall be the responsibility of the Contractor. However this shall not include excepted risks which are not covered under the above said insurance policies. All consequential loss with reference to insurance claims shall be borne by the contractor.

21. Compliance and Default

1. In the event of the Contractor committing a default or breach of any of the provisions of the aforesaid Contractor's Labour (Regulation & Abolition) act 1970 as amended from time to time or furnishing any information or submitting or filling any Form/Register/Slip under the provisions of these Regulations which is materially incorrect, then on the Report of the Inspecting Officer as defined in the Contractor Labour (Regulation & abolition) act 1970, the Contractor shall without prejudice to any other liability pay to "MIDHANI" a sum not exceeding Rs.200/- for every default, breach or furnishing, making, submitting, filling, such materially incorrect statement and in the event of the Contractor's default continuing in this respect, the penalty may be enhance to Rs.200/- per day for each day of default subject to a maximum of five percent of the estimated cost of the works put to tender. The Engineer-In-Charge shall deduct such amount from bills or retention money of the Contractor. The decision of the Engineer-In-Charge in this respect shall be final and binding.
2. Contractor shall at his own expense comply with or cause to be complied with Model Rules for Labour Welfare or rules framed by the Government from time to time for the protection of health and for making sanitary arrangements for workers employed directly or indirectly on the works. In case the Contractor fails to make arrangements as aforesaid, the Engineer-In-Charge shall be entitled to do so and recover the cost thereof from the Contractor.
3. The Contractor shall at his own expense arrange for the safety provisions as appended to these conditions (Safety Code) or as required by the Engineer-In-Charge in respect of all labour directly or indirectly employed for performance of the works and shall provide all facilities in connection therewith. In case, the Contractor fails to make arrangements and provide necessary facilities as aforesaid, the

Engineer-In-Charge shall be entitled to do so and recover the cost thereof from the Contractor.

- I. Failure to comply with Model Rules for Labour Welfare, Safety Code on the provisions relating to report on accidents and to grant of maternity benefits to female workers shall make the Contractor liable to pay to the "MIDAHNI" as the penalty an amount not exceeding Rs.200/- for each default or materially incorrect statement.

The decision of the Engineer-In-Charge in such matters based on reports from the Inspecting Officers as defined in the Contractor Labour Regulation(RLA) Act 1970 shall be final and binding and deduction(s) for recovery of such penalty may be made from any amount payable to the Contractor.

PROFORMA OF BANK GUARANTEE IN LIEU OF SECURITY DEPOSIT IN INDIVIDUAL CONTRACT

(ON NON JUDICIAL STAMP PAPER)
(CLAUSE NO. 9)

To,

Mishra Dhatu Nigam Ltd.
.....
.....

In consideration of the Mishra Dhatu Nigam Ltd. Having its registered office at (hereinafter called "MIDHANI" which expression shall unless repugnant to the subject or context include its administrations, successors and assigns) having agreed under the terms and conditions of the Award Letter bearing number Dated issued by the MIDHANI, which has been unequivocally accepted by the contractor M/s.

..... work (hereinafter called the said contract) to accept a Dead of Guarantee as herein provided for Rs (Rupees Only) from a Nationalized Bank in lieu of the retention money to be made by the contractor or in lieu of the deduction to be made from eh Contractor's bills, for the due fulfillment by the said contractor of the terms and conditions contained in the said contract.

We, the Bank (hereinafter referred to as "the said Bank" and having our registered office at do hereby undertake and agree to indemnify and keep indemnified "MIDHANI" from time to time to the extent of Rs (Rupees only) against any loss or damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by "MIDHANI" by reason of any breach or breaches by the said contractor of any of the terms and conditions contained in the said contract and to unconditionally pay the amount claimed by "MIDHANI" on demand and without demur to the extent aforesaid.

We Bank, further agree that "MIDHANI" shall be the sole judge of and as to whether the said contractor has committed any breach or breaches of

"Refer note at the end of the proforma.

Any of the terms and conditions of the said contract and the extent of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by "MIDHANI" on account thereof and the decision of "MIDHANI" that the said Contractor has committed the breach or breaches and as

to the amount or amounts of loss, or that may be caused to or suffered by "MIDHANI" from time to time shall be final and binding on us.

1. We, the said Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said contract and till all the dues of "MIDHANI" under the said Contract or by virtue of any of the terms and conditions governing the said contract have been fully paid and its claims satisfied or discharged and till the owner certificate that terms and conditions of the said contract have been fully and properly carried out by the said contractor and accordingly discharges this Guarantee subject, however, that "MIDHANI" shall have no claim under the Guarantee after 90 (Ninety) days from the date of expiry of the Defects Liability Period as provided in the said contract, i.e. (date) or from the date of cancellation of the said contract as the case may be, unless a notice of the claim under this Guarantee has been served on the Bank before the expiry of the said period in which case the same shall be enforceable against the Bank notwithstanding the fact, that the same is enforced after the expiry of the said period.
2. "MIDHANI" shall have the fullest liberty without affecting in any way the liability of the bank under this Guarantee or Indemnity, from time to time, to vary any of the terms and conditions of the said contract or to extend time of performance by the said contractor or to postpone for any time from time to time any of the powers exercisable by its against the said contractor and either to enforce or forbear from enforcing of the terms and conditions governing the said contract or securities available to "MIDHANI" and the said bank shall not be released from its liability under liberty with reference to the matters aforesaid or by reason of time being given to the said Contractor or any other forbearance act or omission on the part of "MIDHANI" or any indulgence by "MIDHANI" to the said contractor or any other matter or thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of so releasing the Bank from its such liability.
3. It shall not be necessary for "MIDHANI" to proceed against the contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank, notwithstanding any security which "MIDHANI" may have obtained or obtain from the Contractor shall at the time when proceedings are taken against the Bank hereunder, be outstanding or unrealized.

We, the said Bank, lastly undertake not to revoke this Guarantee during its currency except with the Previous consent of "MIDHANI" in writing and agree that any change in the constitution of the said contractor or the said Bank shall not discharge our liability hereunder. If any further extension of

this Guarantee is required the same shall be extended to such required periods on receiving instructions from M/s
..... on whose behalf this guarantee is issued.

In the presence of

For and on behalf of (the Bank)

WITNESS

1. _____

Signature _____

2. _____

Name & Designation _____

Authorization No: _____

Date and Place: _____

Bank's Seal _____

Accepted

(Signature of the Officer)
For and on behalf of
(Mishra Dhatu Nigam Ltd.)

SCHEDULE "A"**REFERENCE TO GENERAL CONDITIONS OF CONTRACT**

Clause	Pg.	Item	Stipulation
1	4	Estimated cost of the works	Rs 4024 Lakhs
7(a) (i)	6	Earnest Money Deposit	Rs 15.00 Lakhs
		<u>General Contract Conditions</u>	
		<u>Chapter I</u>	
3(e)	15	Accepting Authority	Chairman & Managing Director, MIDHANI
3(h)	15	Market Rate-percentage addition to cover overheads and profit	10%
		<u>Chapter II</u>	
7(b), 7(c)	20	Payment of bills (12 RA bills & 1 final bill , <u>10 material advance bills against Steel and Cement</u>)	R.A. Bills in 15 days & final bill in 30 days from the date of certification of Engineer – In – Charge.
7(j) I(a)	22	Deviation limit beyond which sub clause 7(j)(III) to 7(j)(V) shall not apply to this contract and clause 7(j)(I) shall apply	
7(j) I(b)	22	Limit for value of any item of any individual trade beyond which sub clause 7(j)(III) to 7(j)(V) shall not apply and clause 7(j)(I) shall apply	
7(l)	25	Suspension of work	
7(l)(3)	25	Percentage payable cover contractor's indirect expenses for suspension exceeding 90 days.	5% maximum
9 a&b	27	Security Deposit and Retention Money	5% EACH
10.1	27	Time allowed for execution of work or time schedule	12 months in staggered manner
10.3(g)	29	Authority competent to decide if any other cause of delay is beyond contractor's control	Chairman & Managing Director
10.5	29	Authority for granting Extension of Time	Chairman & Managing Director
11(v)	30	Authority competent to reduce compensation amount	C&MD
12.0	30	Defects Liability Period	12months
20.8.1.	35	Insurances , CAR policy etc	
		<u>Special Contract Conditions</u>	
3.1	42	Water charges	Free of issue
3.2	42	Electricity Charges	Free of issue

SPECIAL CONDITIONS OF CONTRACT

1.0 **GENERAL:**

The special contract conditions of contract shall be read in conjunction with the invitation to tender, General Conditions of contract, specification, Drawings and other supplementary documents detailing the work.

Provided that, where any provision of the General Conditions of Contract is repugnant to or at variance, unless a different intention appears, the provision of the Special Conditions of Contract shall be deemed to override the provision of the General Conditions of Contract and shall to the extent of such repugnance or variation, prevail.

2.0 **Site and Local Conditions**

2.1 **Location and Works Terrain**

MIDHANI plant is located at Kanchanbagh in Hyderabad, Telanagana state, adjacent to the existing Defence Metallurgical Research Laboratory (DMRL). The plant is about 10 km away from Hyderabad city. The nearest main railway stations are Nampally and Kachiguda stations of Hyderabad, which are about 12 Km and 9 Km respectively from this plant.

2.2 **Climate Conditions**

2.3 The climatic conditions at the plant are similar to the prevailing at Hyderabad city and are generally as indicated below:-

Maximum of mean daily temperature	-	40° C
Minimum of mean daily temperature	-	12° C
Absolute maximum temperature	-	45° C
Absolute minimum temperature	-	6° C
Relative humidity maximum	-	83° C
Relative humidity minimum	-	30° C
Average yearly precipitation	-	765 mm
Maximum hourly precipitation	-	about 60 mm
Maximum wind velocity	-	84 km/hr
Absolute maximum wind velocity	-	144 km/hr
Wind direction – April mainly from	-	SE and SW
		W and NW
May to Sept. mainly from	-	W and SW
Rest of the year mainly from	-	NE and E
		And SE

2.4 **Earthquake:**

The plant is situated in Zone 'II' as defined in latest seismic maps.

2.5 Transport Connections:

The plant is well connected by road. Important broad gauge railway stations are located nearby as stated earlier. Hyderabad has a commercial airport at Shamshabad, about 19Km from the plant.

2.6 Communications:

Postal, telephone and Fax facilities are available as follows: -

Name of the Company : MISHRA DHATU NIGAM LIMITED

Corporate Identity Number : U14292TG1973GOI001660

Registered Office Address : P.O. Kanchanbagh, Hyderabad, 500 058

Telephone 040-24340001 (10 lines), 040-24342446 –
24340243/24184276,24184449,24184226,24182406

Fax : 040 – 2434 0041

E-mail : debasish@midhani.com ,

vsramgopal@midhani.com,
gmadanmohan@midhani.com

dhvardhan@midhani.com,

ikchaitanya@midhani.com

Website address : www.midhani.com

2.7 The provision of the above information is for the Contractor's general guidance only and does not relieve him of his responsibility under clauses 6 if the General Conditions of Contract to satisfy himself of the site conditions and sufficiency of his tender. No claim whatsoever shall be admissible or any extra shall be allowed on these accounts.

3.0 Construction Facilities:**3.1 Construction Water:**

Water required for the Works will be made available to the Contractor free of cost at one point of site. The Contractor shall make his own arrangement for drawing water/Electricity from this point and for further distribution at his own cost, with the approval of the Engineer – In – Charge.

He shall construct a storage tank at his own cost sufficient for storing enough water for his seven days requirements. No claim for compensation for any failure or short supply of water will be admissible. The Contractor shall state the requirement of water for construction in the appendix – I herein attached.

Employer do not guarantee the maintenance of uninterrupted supply of water and in case of any interruptions of such supply of water the Contractor shall be responsible for making at his own cost alternative arrangements for water. When Contractor makes his own arrangements of water required for the work, nothing shall be paid for the same by MIDHANI.

3.2 **Construction Power:**

Electric Power from sources available near the site will be made available at free of cost (415 volts, 3 phase (4 wire) 50 cycles) to the Contractor at one point at the site. Further connections, distributions, installation of the switch board, lcvs, mcvs, meters etc. shall be arranged and maintained by the contractor at his own cost with the prior approval of the Engineer – In – Charge. The distribution system shall conform to the Indian Electricity Act 1910 and the Indian Electricity Rules, 1956 with the latest amendments. The Contractor on the completion of the Works shall remove all wiring from the switchboard and meter. He shall reinstate and make well any work disturbed by the temporary power lines at his own cost to the satisfaction of the Engineer – In – Charge.

No claim for compensation for any failure or short supply of power will be admissible. The Contractor shall indicate his requirement of electric power for lighting and construction equipment at site. Providing lighting facility / arrangement for the work area is under scope of execution contractor of this tender at his own cost. Only power supply will be provided free of cost by MIDHANI at one point. In case of forced power cuts/short supply/fault, contractor shall make his own arrangement for lighting/fabrication works without affecting the schedule of work. Nothing shall be paid for the same by MIDHANI.

3.3 **Temporary Roads:**

The contractor shall construct and maintain at his own cost all temporary roads at the site for leading his equipment, labour, materials etc. to various places of work or otherwise deemed necessary to execute the works.

4.0 **Time Schedule of Contract:**

Time is the essence of the Contract. The Contractor shall complete the whole of works according to the Contract and to the satisfaction of the Engineer – In – Charge within 12 months in staggered manner as mentioned below.

Total 12 months (staggered) from the date of handover of site as placed below;

1. Package (a) - 7 Months
2. Package (b) - 3 Months
3. Package (c) - 11 Months
4. Package (d) - 7 Months
5. Package (e) - 12 Months

Please note that the start date for all packages a, b, c, d & e are counted from the date of handover of site.

The working hours for the civil works are 24 hours with special permission and safety precautions as per standing rules of MIDHANI. Late night working permission and permission to work beyond normal working hours will be allowed with prior planning and permission. Permission will be granted to work round the clock in "A+B+C" shifts.

5.0 Authorized Agent/ official

- 5.1 The contractor shall have a duly authorized agent/official at site from the commencement of works to the completion of the works. Such agent/ official shall be authorized, on behalf of the contractor, to accept services of notices under the and to agree to extras, omissions and varied items of works and rates for the same. Such agent/ official shall maintain on his staff qualified engineers and such other personnel as may be required for efficient execution of the works. Any notice under the contract shall be deemed to have been served on the contractor if served upon such agent/ official or sent by registered letter to his address at site. Such agent/ official shall not be changed and shall not leave the site during the duration of the Contract unless the consent of the Engineer – In – Charge shall have been previously obtained. If the Engineer – In – Charge shall require the contractor to carry out any rectifications under the terms of the contract after the works are completed, the contractor shall have the same or another duly authorized agent at site when such rectifications are being carried out.
- 5.2 The contractor shall send a duly authorized competent representative to meet the Employer at his office at Hyderabad whenever called upon in writing to do so by the Employer or the Engineer – In – Charge and any instructions, directions or explanations given by the Engineer – In – Charge to such representative shall be held to have been given to the Contractor.
- 5.3 **Resident Engineer:** One with at least 8 years practical experience in relevant work & three site engineers with at least 5 years relevant experience. Failing which, a penalty of Rs 35,000/- per month will be recovered from the bills payable to contractor upon certification of Engineer-in-charge.

6.0 Construction Stores:

- 6.1 Suitable areas at or near site will be allocated free of cost by the Employer at his discretion to the contractor for field offices, storing equipment, plant, materials etc. for the duration of the contract. The contractor will be solely responsible for the watching and guarding of his stores.
- 6.2 The contractor shall cover all his equipment and materials at site with requisite insurance against theft, larceny, dacoit, fire, tempest, flood, earthquake etc.
- 6.3 The space for batching plant may be made available at a distance about 1.5 KM away from the construction site in separate premises. Power and water supply facility is not available in the batching plant site proposed. Space for storage of steel, cement etc., will be provided nearby the construction site. It is to be noted that there is no space provision for accommodation of labor, technical / office staff, and other facilities like lab, steel fabrication yard, etc.

7.0 Accommodation for Labour and Supervisory Staff:

The contractor shall make his own arrangements for the accommodation of his labour and supervisory personnel, for which the Employer will allocate no open land. The contractor shall include in his rates the cost of provision of such accommodation for the laborers and supervisory staff including suitable water supply, electricity and

good sanitary arrangements. The sanitary arrangements provided must conform to the rules and regulations of local authorities or public bodies.

8.0 **Compliance with Enactments:**

The Contractor shall comply with the provisions of the following Acts and Rules:

- a. The Contract Labour (Regulation & Abolition) Act 1970 or any amendment thereof and Rules made there under and all legislations and rules of the State or Other local Authority framed from time to time. The Rules and other statutory obligations with regard to wages, welfare and safety measures, maintenance of all required registers etc will be deemed to be part of the contract. Such Registers shall be produced by the Contractor for inspection as and when required by MIDHANI or Labour Department Authorities or other statutory bodies.
- b. The Contractor must possess valid license obtained for RLC (central) under Contract Labour (R&A) Act and Rules for employing contract labour on the date of the submission of tender form in case of engagement of contract labour. It is mandatory to implement the GOs issued by the Government from time to time on payment of wages.
- c. The Provisions of the Minimum Wages Act 1948 and Payment of Wages Act 1936 as amended from time to time and rules made there under.
- d. Industrial Disputes Act
- e. Employee's Compensation Act 1923 or any other law for the time being in force.
- f. Equal Remuneration Act.
- g. The Provisions of ESI Act and EPF & MP Act and the rules made there under in respect of the workmen engaged by him.

9.0 **Construction Equipment:**

- 9.1 The contractor shall make his own arrangements to procure all constructional plants and equipments for the work. He shall state in the Appendix II the type and number of different equipment in good working conditions, with their capacities, which he will use on the site to ensure the completion of the works in the specified time.
- 9.2 All materials, construction plants and equipment etc once brought by the contractor on the site are not to be removed from there without the written authority of the Engineer – In – Charge. Also the contractor shall have adequate stock of spare parts for the equipment on the site and the works shall not be delayed on this account. All temporary works built by the contractor for the main construction undertaken by him are not to be dismantled and removed without written authority of the Engineer – In – Charge.

10.0 **Co-operation with other contractors:**

The contractor shall plan and execute his work in a phased manner as directed by the Engineer – In – Charge from time to time and shall fully co-operate with other agencies working at site simultaneously so as not to obstruct or retard the works simultaneously being executed by other agencies in any way. The decision of the

Engineer – In – Charge on any point of dispute between the various contractors shall be final and binding on all the parties concerned.

11.0 **Safety Code:**

The contractor shall at his own expense, arrange all the requirements including safety gears for the safety provisions as appended to these conditions, or as required by the Engineer – In – Charge in respect of all labour directly or indirectly employed for the performance of the works and shall provide all facilities in connection therewith. In case the contractor fails to make the arrangements and to provide necessary facilities as aforesaid, the Employer shall be entitled to do so and recover the cost thereof from the contractor. The contractor will abide all the safety norms of MIDHANI & other statutory bodies.

12.0 **Cleaning Site:**

The contractor shall clean the site as required of grass, trees, vegetation and debris prior to the start of the work at his own cost.

13.0 **Clearing Site on completion:**

On completion of the works, the site shall be cleared by the contractor of all men, materials, temporary sheds, debris, rubbish, plants and equipments belonging to the contractor at his own cost. The site and surroundings shall be handed over in a clean and neat condition as required by the Engineer – In – Charge. In case of failure by the contractor, the Employer will get the site cleared at the risk and cost of the contractor. The work may not be considered complete till the contractor clears the site in all respect as mentioned above.

14.0 **Coverage of Contract:**

14.1 The contract is a complete one including all the cost towards labour, materials, the contractor's overhead and profit, all temporary works & all other provisions, equipments, tools tackles, transportation ,handling ,all taxes & duties etc.

14.2 Except where it is expressly provided that the cost will be borne by the Employer the various obligations of the contractor under the contract shall be at the cost of the contractor.

15.0 **Transfer of guarantees:**

All guarantees such as waterproofing, acid resisting, materials etc for the entire works as obtained from the manufacturer or specialist agencies shall be transferred to the Employer through the Engineer – In – Charge by the contractor prior to the acceptance of such works. The applicator/manufacturer also will remain the co-guarantor.

16.0 **Security Regulations:**

The contractor shall abide by all the security regulations promulgated by the Employer & all other statutory authorities from time to time. In order to facilitate the issue of entry/ exit gate permits for materials and equipment to be taken out after

completion of the work the contractor shall submit a list of equipment and/or other materials that may be taken inside the protected area from time to time.

17.0 **Miscellaneous:**

17.1 **Variation Statement:**

The quantities are subjected to $\pm 10\%$ variation and the contractor has to carry out the work on the same rates, terms and conditions within the variation limits as prescribed. In case if the quantities exceeding beyond 10% of the BOQ, the exceeding quantities beyond 10% shall be executed at the rates lowest among the tenderers. However any variation beyond BOQ or any new item to be executed shall be brought to the notice of Engineer-in-charge. A statement shall be prepared by the contractor and submitted to Engineer – In – Charge for approval in advance before execution of the same.

17.2 **Part rates:**

The part rates recommended by Engineer – In – Charge in the Running Accounts Bills for the items of works in progress shall be binding on the contractor.

17.3 **CANTEEN:**

Lunch/Dinner in MIDHANI may not be provided for staff & workers.

APPENDIX – I OF SPECIAL CONDITIONS OF CONTRACT

The contractor shall indicate in the following table the type and number of equipment he shall bring on site in good working condition for use in the works.

Sl. No.	Type of Equipment	Capacity	No. of Equipment
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SPECIFICATIONS FOR – CIVIL WORKS

PREAMBLE TO SPECIFICATIONS

The conditions of contract and the drawings shall be read in conjunction with the specifications and matters referred to shown or described in one are not necessarily repeated in the other. These specifications are comprehensive and may exceed the requirements of this project. Any ambiguity between the General specifications, the Bill of quantities and contract drawings shall be referred to the Tenderer for clarification not later than 10 days before the date fixed for delivery of Tenders. Any ambiguity may be referred to the Tenderer after signing of the contract and Tenderer shall give a ruling which shall prevail. No claim for additional cost due to above, however, will be entertained.

Notwithstanding the sub-division of the specification into various headings, every part of it is to be deemed supplementary to every other part and is to be read with it, so far as it may be practicable so to do, or when the context so admits.

In this contract, reference is made to the Indian Standards and these references shall be deemed to include the latest editions or issue of standards, specifications or By-Law including all revisions up to the date of invitation of Tenders. The contractor shall ensure that all materials and workmanship in so far as they apply to this contract shall comply in every specifications or any other equivalent or specification approved by the Tenderer.

The Contractor shall kept at site copies of all relevant standards and codes of practice referred in these specifications throughout the period of contract. These shall be the latest editions and shall include all revisions/addendums thereof.

Approved Manufacturers: Name of approved manufacturers are given in the specifications.

Reference in the specifications to approved manufacturers shall be constructed as establishing standard of quality and not as limiting completion.

The Contractor shall include in his prices for supplying the item or materials from the approved manufacturers listed or on approval.

All items or materials shall be delivered to the site in the manufacturers original unopened containers with the manufacturers brand and name clearly marked on.

All items or materials shall be assembled, mixed, fixed, applied or otherwise incorporated in the works in accordance with the printed instructions of the manufacturer of the item or materials.

1.0 GENERAL

1.1 Scope

This specification applies to the CIVIL Engineering and building works to be executed by the Contractor. It is to be read in conjunction with and subjects to the

general conditions of contract and in conjunction with the drawings, the schedule of rates and such other documents as may from time to time be agreed upon as comprising part of this contract. Where these specifications are not clear, CPWD specifications shall be followed.

1.2 **Clearing**

The contractor shall clear the site of all rubbish and old buildings remove all grass and low vegetation and remove all bush wood, trees, stumps of trees and other vegetation only after consultation with the Architects as to which bushes and trees shall be saved. All disused foundations, drains or other obstructions met with during excavation shall be dug out and cleared.

1.3 **Site Levels**

The contractor shall carry out the survey of the site and shall establish sufficient number of grids and level marks to the satisfaction of the Architects who shall decide on the basis of this information the general level of the plot and the plinth.

1.4 **Bench-marks**

Prior to commencement of construction the contractor shall in consultation with the Engineer, establish several site datum bench-marks their number depending on the extent of the site. The bench-marks shall be sited and constructed so as to be undisturbed throughout the period of construction.

1.5 **Site investigation**

The Architects might have got the soil investigation done and if so, the report will be handed over to the contractor for their scrutiny. The contractor shall however inspect the site and study the findings from the trial pits or bores in order to assess the problems involved in and methods to be adopted for excavation and earth work. The contractor shall ascertain for himself all information concerning the sub-soil conditions, Ground water table periods and intensity of rainfall, flooding of the site and all data concerning excavation and earth work.

1.6 **Setting out the work**

The contractor shall set out the works and during the progress of the building shall amend at his own cost any errors arising from inaccurate setting out.

During the execution of the work contractor must cross check his work with the drawings. The contractor shall be responsible for all the errors in this connection and shall have to rectify all defects and / or errors at his own cost failing which the Architect reserves the right to get the same rectified at the risk and cost of the contractor.

1.7 **Clearing up and handing over**

Upon completion of the work all the areas should be cleaned. All floors, doors, windows, surface etc. shall be cleaned down in manner which will render the work acceptable to the Architect and Employer. All and an area of up to ten meters on the

outer boundaries of the premises will be cleaned by the contractor as a part of the contract. Upon completion of the project, the contractor shall submit to the employer the following.

- a. Written guarantee and certificates.
- b. Maintenance manual, if any and
- c. Keys

1.8 Samples

The contractor shall submit to the Architects samples of all materials for approval and no work shall commence before such samples are duly approved. Samples of pre-cast concrete panels, masonry units, building insulation, finished hardware, metal window and door frames, terrazzo flooring, kota stone, marble etc. and every other work requiring samples in the opinion of the Architects shall be supplied to the Architects and these samples will be retained as standards of materials and workmanship. The cost of the samples shall be borne by the contractor.

Throughout this specification, types of material may be specified by manufacturers' name in order to establish standard of quality, price and performance and not for the purpose of limiting competition. Unless specifically stated otherwise, the tenderers may assume the price of 'approved equivalent' except that the burden is upon the contractor to prove such equality in writing.

A detailed programme shall be submitted by the contractor for the material approvals, within four weeks of the Architects order to commence. The detailed programme shall include but not limited to:

- Date/s of submitting the various material samples.
- Dates/s by which the MIDHANI's approval is required.
- Date/s of placing orders on the Manufacturers/Suppliers.
- Date/s of arrival of the approved material/s on to the site.

Date/s of the completion of the 'Mock-ups' wherever required, and the Date/s by which the Architects' inspection of such 'Mock-ups' should be completed and the Date/s by which the Architect should fully approve the said Mock-ups.

1.9 Tests

All materials and methods of tests shall conform to the latest rules, regulation and/or specifications of the following authorities where specified herein as applicable. Bureau of Indian Standards (BIS), British Standards Code of practice (BS) in case no equivalent BIS is available. The Architects will have the option to have any of the materials tested and if the test results show that the materials do not conform to the specifications, such materials shall be rejected. A reasonable number of representative tests will be deemed to be included in the rates tendered.

1.10 Rates

The item rates quoted in schedule of quantities are deemed to be included to execute the complete works/items in strict accordance with the relevant specifications read in conjunction with the appropriate Standard Specifications.

1.11 Mode of Measurements

All measurements will be taken in accordance with IS 1200 latest issue unless otherwise specified.

1.12 Safety Code

- i) Suitable scaffolding should be provided for workmen for all works that cannot safely be done from the ground or from solid construction except such short period work as can be done safely from ladders. When ladder is used an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable foot holds and hand holds shall be provided on the ladder shall be given an inclination not steeper than $\frac{1}{2}$ to 1 (1/2 horizontal) and 1 vertical).
- ii) Scaffolding or staging more than 3 Mtrs. Above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise secured at least 0.9 Mtrs, high above the floor or platform or such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
- iii) Working platform, gangways and stairways should be so constructed that they should not sag unduly or unequally and if the height of the platform or the gangway or the stair way is more than 3 Mtrs. Above ground level or floor level they should be closely boarded should have adequate width and should be suitably fenced as described in Para (ii) above.
- iv) Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 1 Mtr.
- v) Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 Mtrs. In length while the width between side rails in rung ladder shall in no case be less than 29 cms for ladder up to and including 3 Mtrs in length. For longer ladders this widths should be increased by at least 6 mm for each additional 30 cms. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the site of work shall be so stacked or placed as to cause danger or inconvenience to any person. The contractor shall provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defense of every suit, action or other proceeding at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit action or

proceedings to any such persons or which may with the consent of the contractor be paid to compromise any claim by any such person.

- vi)** Excavation and trenching: All trenches 1 meter or more in depth shall at all times be supplied with at least one ladder for each 30 Mtrs in length or fraction thereof. Ladder shall be extended from bottom of the trench to at least 1 Mtr above the surface of the ground. The side of the trenches which are 1.5 Mtr or more in depths shall be stepped back to give suitable slope or securely held by timber bracing so as to avoid the danger of sides collapse. The excavated materials shall not be placed within 1.5 Mtrs of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall done from top to bottom. Under no circumstances undermining or undercutting shall be done.

- vii)** Before any demolition work is commenced and also during the process of the work:
 - a. All roads and open areas adjacent to the work site shall either be closed or suitably protected in consultation with the Employer.
 - b. No electric cable or apparatus which is liable to be a source of danger or a cable or apparatus which is liable to be used by the operator shall remain electrically charged.
 - c. All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.

- viii)** All necessary personal safety equipment as considered adequate by the Architect should be kept available for the use of the person employed on the site and maintained in condition suitable for immediate use and the contractor should take adequate steps to ensure proper use of equipment by those concerned.
 - a. Workers employed on mixing asphaltic material, cement and lime mortars shall be provided with protective foot wear and protective goggles.
 - b. Those engaged in white washing and mixing or stacking of cement bags or any material which is injuries to the eyes shall be provided with welders' protective goggles.
 - c. Those engaged in welding work shall be provided with welders protective eyesight lids.
 - d. Stone breakers shall be provided with goggles and protective clothing and seated at sufficiently safe intervals.
 - e. When workers are employed in sewers and manholes which are in use the contractor shall ensure that the manhole covers are opened and are ventilated at lease for an hour before the workers are allowed to get into the manholes and the manholes so opened shall cordoned off with suitable railing and provided with warning signals or boards to prevent accidents to the general public.

- f. The contractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Whenever men above the age of 18 are employed on the work of lead painting the following precautions should be taken:
 - I. No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
 - II. Suitable face masks should be supplied for use by the worker when paint is applied in the form of spray on a surface or when paint is dry-rubbed and scrapped.
 - III. Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painter to wash during the cessation of work.
- ix) When the work is done near any place where there is a risk of drowning all necessary equipments should be provided and kept ready for use and all Necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt First Aid treatment of all injuries likely to be sustained during the course of work.
- x) Use of hoisting machines and tackle including their attachments anchorage and supports shall conform to the following standards of conditions.
 - a. These shall be of good mechanical construction, sound material and adequate strength and free from patent defect and shall be kept in good working order.
 - b. Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength and free from patent defects.
- 2. Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding or to give signals to operator.
- 3. In case of every hoisting machine and of every chain ring hook, shackle survival and pulley block used in hoisting or as means of suspension of safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load each safe working load of the conditions under which it is applicable shall be clearly conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
- 4. In case of departmental machines the safe working load shall be notified by the Electrical Engineer concerned.
- xi) Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with such means as will reduce to the minimum the

risk of accidental descent of the load, adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced when workers employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves, sleeves and hat as may be necessary should be provided. The workers should not wear rings, watches and carry keys or other materials which are good conductors of electricity.

- xii)** All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.
- xiii)** The safety provisions should be brought to the notice of all concerned by displaying on a notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the Contractor.
- xiv)** To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangements made by the Contractor shall be open to inspection by the Labour Officer, Engineer – In – Charge or the department or their representatives.
- xv)** Notwithstanding the above Clause from (i) to (xiv) there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force in the Republic of India.

2 MASONRY WORKS

2.1 Stone Masonry

- i** Stone masonry shall be of hard stone obtained from approved quarry. Stone shall be of the type specified. It shall be hard, sound, free from decay, weathering and defects like cracks, flaws and holes. Stone with round surfaces shall not be used.
- ii.** Normally, stone used should be small enough to be lifted and placed by hand. The length of stone shall not exceed three times the height.
- iii.** All stones shall be wetted before use. The wall shall be carried up truly plumb. Every stone shall be carefully fitted to the adjacent stone as to form a neat and close joint. Bond or through stone shall be provided not exceeding 1.5 meter apart in each course and shall be staggered. Bond stone shall be from the front to the back of the wall.
- iv.** The interior filling shall be with flat bedded stones laid in mortar. Chips, spells shall be used to void thick mortar joints and shall not exceed 10% of the quantity of stone masonry.

- v. Unless otherwise mentioned the mortar used shall be 1:5 (1 cement: 5 coarse sand). All surface joints will be raked & filled with cement mortar 1:3 (1 cement: 3 coarse sand).

2.2 Mortar

The mortar for masonry work shall be cement and sharp coarse sand and shall be made in small quantities so as to be used up within 30 minutes. The cement and sand of the required proportion shall be first mixed dry thoroughly and water added and mixed to a sufficiently thick consistency as required by the Architect. No left over mortar shall be used. Unless otherwise specified the mortar shall be of the following proportions.

- a. One cement and six coarse sand for 230 mm thick masonry work and above.
- b. One cement and four coarse sand for piers, half brick walls, honeycombed brick work, hollow blocks.

3 PAINTING

3.1 Synthetic enamel paint

3.1.1 Manufacture of paints, mixing of paints etc., shall be generally according to the Indian standard codes of practice.

3.1.2 In the event of conflict between this technical specification for painting and the painting manufacturer specification, this conflict should be immediately brought to the notice of the Engineer. Generally cases of such conflicts, manufacturers specification recommendation shall prevail.

3.1.3 General compatibility between primer and finishing paints shall be certified by the paint manufacturer supplying the paints.

3.1.4 Before the contractor buys the paint in bulk, the contractor shall obtain sample of paint and establish "Control Areas of Painting". On control area, surface preparation and painting shall be carried out in the presence of manufacturer of paint shall be carried out in the presence of manufacturer of paint and owners. Control area serves as specimen of painted surfaces, for observing and recording quality and performance of paint.

3.1.5 Samples of paint shall be got tested from the recognized testing laboratories to establish quality of paint w.r.t. (i) viscosity (ii) adhesion / bond of paint to steel surfaces (iii) adhesion / stimulated salt spratest (iv) chemical analysis, percentage of solids by weight (v) normal wear resistance against exposure to acid fumes, and such other tests as considered necessary by the Consultants.

3.1.6 Whole system of paint shall preferably be obtained from the same manufacturer.

- 3.1.7 The painting material in containers without labels or with illegible labels shall be rejected, removed from the area and shall not be used.
- 3.1.8 Thinners wherever used shall be those recommended by the paint manufacturers, and shall be obtained in containers with manufacturers name and brand name of thinner. Legibly printed, failing which the thinner is liable to be rejected and shall not be used.
- 3.1.9 Area, which become in accessible after assembly shall be painted before assembly after cleaning the surfaces and specified.
- 3.1.10 Where shop primer painting is scratched, abraded or damaged, the surfaces shall be thoroughly cleaned using emery paper and power driver wire brush wherever warranted or as directed by the Engineer, and touched up with corresponding primer. Touching up paint shall be matched and blended to eliminate conspicuous marks.
- 3.1.11 If more than 50 percent of the painted surface of an item requires repair the entire item shall be mechanically cleaned and new primer coats followed by finishing coats shall be applied as per painting specification.
- 3.1.12 All field – welded areas on shop painted items shall be mechanically cleaned including the weld area proper, adjacent areas contaminated by weld spatter or fumes & areas where existing primer / intermediate / finish pain is burnt. Subsequently, new primer and finishing coats of paint shall be applied as per painting specification.
- 3.1.13 Application of paint shall be spraying or brushing as per IS : 486 – 1983 and IS : 487 – 1985 and in uniform layers of 50 percent over lapping strokes by skilled painters. Painting shall not be done when the temperature is less than 5 degree C or more than 45 degree C and relative humidity is more than 85% unless manufacturer's recommendations permit. Also painting shall not be done in frostily or foggy weather. During application, paint agitation must be provided where such agitation is recommended by the manufacturer.
- 3.1.14 Paint shall be applied at paint manufacturer's recommended rates. The number of coats shall be such that the minimum dry film thickness specified is achieved. The dry film thickness (DFT) of painted surfaces shall be checked with an ELCOMETER or measuring gauge to ensure specified DFT.
- 3.1.15 The inside surface of gutter which come in contact wit rain water shall provided with 2 finishing coats of wear resistant, bit mastic paint of minimum DFT 75 microns, in addition to 2 primer coats of red oxide zinc chromate in alkyd medium corresponding to IS : 2074 – 1992 or 2 primer coats of epoxy based red oxide zinc chromate / epoxy based red oxide zinc phosphate of minimum DFT 25 microns per

coat, as given in specification and drawings. Other structures shall be painted as per the painting system mentioned in the drawings or schedule of items.

- 3.1.16 All structures shall receive one coat of primer paint at shop after fabrication before dispatch after surface preparation has been done as per requirements. Firm coat of primer paint shall be applied not later the 2-3 hours after preparation of surfaces, unless specified otherwise.
- 3.1.17 Unless otherwise specified all structures after erection shall be given one coat of primer followed by the coats of finishing paint of approved colour and quality. The under coat shall have different tint to distinguish the same from the finishing coat. Edges, corner crevices, depressions, joints and welds shall receive special attention to ensure that they receive painting coats of the required thickness. Machine – finished surfaces shall be coated with white lead before shipment or before being put out into the open air.
- 3.1.18 Parts of steel structures, embedded in concrete, shall be given a protective coat of Portland cement slurry immediately after fabrication after surfaces of this part is thoroughly cleaned from grease, rust, mill scales etc., no paint shall be applied on this part.
- 3.1.19 Zinc-rich primer paints, which have been exposed several months before finishing coat is applied, shall be washed down thoroughly to remove soluble zinc salt deposits. In similar circumstances, the surfaces of paint based on epoxy resin should be abraded or lightly blast cleaned to ensure adhesion of next coat.
- 3.1.20 Surfaces which cannot be painted but require protection shall be given a coat of rust inhibitive grease according to IS:958 – 1975 or solvent deposited compound according to IS: 1153 – 1975 or IS : 1674 – 1960.
- 3.1.21 The proposed make quality and shade of the paint shall have approval of the Owner / Engineer.
- 3.1.22 Choice of primer paints shall be made depending upon the requirement. Accordingly, primer of suitable type may be chosen from the following, all subject to approval by the Engineer / Consultant.
- i. Red oxide zinc chromate (Alkyd medium) conforming to IS : 2074 – 1992
 - ii. Aluminium zinc oxide
 - iii. Chemical resisting paints for structures exposed to corrosive atmosphere, acid fumes, chemical action etc.,

The primers recommended are as follows:

- a. Epoxy based zinc chromate / zinc phosphate
- b. Polyurethane paint
- c. Chlorinated rubber paint

- iv. Coal tar pitch and Bitumen paints – high build coal tar pitch or bitumen paint (cold applied) yielding coats about 0.25mm thick shall be used. High build coat tar pitch shall be preferred to bitumen paint.
- v. Metal coating
 - a. Hot dip galvanizing
 - b. Sprayed zinc
 - c. Sprayed aluminium
- vi. Heat resistant primers for structures subject to temperature above 150 degrees centigrade.

The paints shall be of reputed make like Berger / Asian paint or as approved by the Engineer / Consultant

4.0 CONCRETE WORKS

4.1 General

All concrete included in the works shall comply with the General requirements of this section of the specification except where those requirements are modified by the provisions of later Clause relating to specialized uses for concrete in which case the requirements of those Clauses shall take precedence.

4.2 Supervision

A competent person shall be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All test on materials, the making and testing of cubes and the maintenance and calibration of all mixing and measuring plant shall be carried out under his direct supervision.

4.3 Materials

a. Cement

I. Types

The cement used shall be ordinary Portland cement of 53 grade conforming to relevant IS for all works except where specifically mentioned in the Drawings, Bill of Quantities and / or directed by the Engineer-in-Charge.

All cement shall be fresh when delivered. Cement shall be delivered in sound and properly secured bags or other packages ready for immediate use and shall be used direct from the bag. The contractor shall maintain for Architects/EIC inspection a record of receipts and consumption of cement indicating the source, the age and the date of receipt of cement. Cement containing lumps, which cannot be broken by a light touch of fingers, shall not be used in the works. Admixtures shall not be used without written consent of the Architect/EIC.

II. Sources

Cement shall be obtained from sources, which are approved by the Architect/ EIC. Makes and sources of cement shall generally not to be varied from those used for trial mixes and if a change be unavoidable, the contractor shall submit this proposal for the prior approval of the Architect/EIC. Unless otherwise directed by the Architect/EIC, Cement of different kinds shall not be mixed at any stage.

III. **Manufacturers' Test Certificates for Cement**

The contractor shall supplied the certified copy/original of manufacturer certificate to the Architect/EIC within 48 hours of the arrival of cement & which shall not be later than 14 days from the day of delivery of the relevant consignment. The test certificate shall be related to the date of delivery at site of consignment. The frequency of deliveries shall be such as to ensure that no cement is more than three months old when used in the works.

IV. **Samples of Cement**

Samples of cement to be used in the works shall be deposited with the Architect/EIC for his approval together with a certificate stating the name and address of the Manufacturer the name and address of the supplier from whom it was purchased. The Architect/EIC may from time to time take samples of the cement being used in the works for testing.

V. **Storage of Cement**

The contractor shall provide a proper separate weatherproof store building with raised floor for cement on the site and shall at all times protect the cement from damp or any other deleterious influences. Each consignment of cement shall be kept separately and the contractor shall be careful to ensure the consignments are used in the order in which they are received.

b. **Aggregates**

- I. All aggregates (coarse & Fine) shall be conforming to IS 383 & shall be obtained from the approved source known to produce aggregates of required size satisfactory for concrete and shall be chemically inert, strong, hard, durable of limited porosity and free from adhering, coating, clay lumps, coal residues and organic or other impurities that may cause corrosion of reinforcement or may impair the strength or durability of the concrete. Aggregates shall be tested in accordance with the requirements of IS: 383 or IS: 515 and the results of such tests shall be as hereinafter specified, the percentages being by weight unless the context indicates otherwise.
- II. Fine aggregates shall be natural sand or sand derived by crushing material like gravel or stone and shall be free from coagulated lumps. Sand derived from stone unsuitable for coarse aggregates shall not be used as fine aggregates. The caustic soda test for organic impurities shall show a colour not deeper than that of the standard solution. The amount of fine particles as ascertained by the Laboratory Sedimentation test shall not exceed 5% for crushed stones. The settling test for natural sand or crushed stone shall be made and after being allowed to set in for

three hours the thickness of the layer of silt deposited on the coarse material shall not exceed 10%.

The grading of a natural sand or crushed stone i.e. fine aggregate shall be such that not more than 5 (five) percent shall exceed 5 mm in size not more than 10% shall pass IS sieve No. 150 not less than 45% or more than 85% shall pass IS sieve No. 1.18 mm and not less than 25% or more than 60% shall pass IS sieve No. 600 micron.

Only washed sand of quality and grading specified herein above shall be used. Admixture of sand obtained by crushing natural stone may be permitted by the Architect provided the mixture satisfies the requirements for the fine aggregates here in above specified. But not more than one part of the sand obtained by crushing natural stone may be added to two parts of washed sand.

M-Sand:

M-sand will be allowed subjected to specification and standards as specified in IS 383-2016. Maximum percentage of M-sand allowed is 60% & 40% river sand confirming to IS 383(without stone dust).

III. **Coarse Aggregate**

Coarse Aggregates shall be crushed stone. The pieces shall be angular, rounded in shape and shall have granular or crystalline or smooth (but not glossy) non-powdery surface. Fragile, flaky and laminated pieces and mica shall not be present.

The "Aggregates Crushing Value" shall not exceed 45%. The amount of fine particles occurring in a free state or as a loose adherent shall not exceed 1%. When determined by the laboratory sedimentation test, after twenty four hours immersion in water. A previously dried sample of the coarse aggregate shall not have gained in weight more than 5%.

The grading of coarse aggregate shall be such that not more than 5% shall be larger than 20 mm and not more than 10% shall be smaller than 5 mm and not less than 25% or more than 55% shall be smaller than 10%.

Maximum size of coarse aggregate shall be of 20 mm unless otherwise noted.

The grading of coarse aggregate of nominal size of 40 mm shall be such that not more than 5% shall be larger than 40 mm and not more than 5% shall be smaller than 5 mm and not less than 10% or more than 35% shall be of 10 mm size.

Aggregate (Fine and Coarse) shall be thoroughly washed with clean water if so directed by the Architect/EIC.

4.4 Steel Reinforcement

Type

Steel for bar and fabric reinforcement shall conform to mild steel of tested quality conforming to IS: 432 (Latest) or high yield strength deformed bar conforming to IS: 1786 or 1139 (Latest) or TMT as specified in the drawings or directed by EIC. The steel shall be kept clean and free from pitting, loose rust, mill scale, oil, grease,

earth, paint or any material which may impair the bond between the concrete and the reinforcement or which may cause corrosion of the reinforcement or deterioration of the concrete. Fabric reinforcement (IRC weld mesh or equivalent) shall be delivered to site in flat sheets only.

Storage of Reinforcement

Before and after bending reinforcement shall be stored on raised racks in separate lots by size and type and protected from damage, contamination and the effects of the weather. For the purposes of identification each lot shall be marked plainly and securely by approved methods.

Fabrication

Fabrication shall be accurately done to the dimensions; spacing and minimum cover as per structural drawings. Spacers shall be of cement mortar (1:1&1/2) cubes. MS chairs, spacer bars shall be used in order to ensure accurate positioning of reinforcement. All joints in mild steel reinforcement up to and including 16 mm dia shall be overlapped. The length of over lap for tension and compression joints in steel reinforcement above 16 mm diameter may be welded if permitted by the Architects/EIC in writing.

Welded Laps

Whether specified, welded laps can be provided. The welding of bars shall be carried out as per IS: 2751 – 1979, IS: 9417 -1979. Before doing welding of bars at site, the contractor shall make minimum 3 joints and get them tested in an approved laboratory at his own cost. The following precautions shall be taken;

- a) If the cold twisted deformed bar has an untwisted end at lapping point then this portion shall be cut off prior to welding.
- b) Bars shall be free from rust at joints to be welded.
- c) Bars shall be aligned and kept in proper axis in order to minimize crookedness in bar after welding.

All the authorized laps, chairs and spacers will be measured & paid separately in addition to the main reinforcement. But payment is subjected to proper record of all the extra fixtures cited above in the pour card duly signed by contractor & MIDHANI engineer.

4.5 Water Type

Water for mixing concrete shall be clean and free from harmful material and comply with the requirements of Clause 4.3 of IS: 456 (Latest Revision).

Water shall be brought only from sources approved by the Engineer in-charge and shall be of potable quality.

Testing of water

Prior to the commencement of the works or whenever there is a change in the source of supply or when directed by the Architect the contractor shall arrange for

samples of water for mixing concrete to be submitted to an independent Government authorized testing laboratory acceptable to the Architect/EIC for tests to determine that the water complies with this specification and is satisfaction in all other respects for the manufacture of high quality concrete.

4.6 **Grades and Strength Requirements of Concrete**

General

Concrete shall consist of the material described under previous sections using separate coarse and fine aggregate in an appropriate combination determined in the course of the preparation of mix design described hereinafter. The overall grading shall be such as to produce a concrete of the specified quality, which will work readily in to position without segregation and without the use of excessive water. In the case of mass concrete or blinding concrete specified by nominal mix the use of 'all – in' (20mm and down) aggregate may be approved by Architect.

Slump

Only sufficient water shall be added to the cement and aggregate during mixing to produce concrete having a sufficient workability to enable it to be well consolidated to be worked in to the corners of the shuttering and around the reinforcement to give corners of the shuttering and around the reinforcement to give the specified surface finish and to have the specified strength. Water cement ratio shall be maintained as per IS: 456-1978 when a suitable amount of water has been determined, the resulting consistency shall be maintained through out the corresponding parts of the work and tests shall be conducted to ensure the maintenance of this consistency according to the standard method of test for consistencies of concrete (slump test) as below:

<u>Description of work</u>	<u>Maximum slump in mm</u>
Beams and slabs	25 to 75 mm
Columns & Walls	50 to 100 mm
Slabs & Staircase	up to 25 mm
Footings	up to 25 mm

Concrete Grades

Grades of concrete used in the works shall be shown on the drawings or as directed by the Architect/EIC. For each grade of concrete the requirement will be as per IS 456 latest revision.

4.7 **Batching and Mixing**

The quantity of cement, the quantity of fine aggregate and the quantities of the various sizes of coarse aggregate should be measured by weight.

A separate weighting device should be provided for weighting the cement. Alternatively, the cement may be measured by using a whole number of bags in each batch, 50 kg. Bag cement contains 35 Ltrs.

The amount of water should be measured by volume or by weight. Any solid admixtures may be measured by volume or weight.

The batch weights of aggregate should be adjusted to allow for moisture content typical of the aggregate being used.

The accuracy of the measuring equipment should be within plus or minus 3% of the quantity of cement, water or total aggregates being measured and within plus or minus 5% of the quantity of any admixture being used. All measuring equipment should be maintained in a clean, serviceable condition.

The mixing time should not be less than that used by the manufacturer in assessing the mixer performance. In the case of mixes of low workability or high cement content this may not ensure maximum strength, and it may be advisable to determine a satisfactory mixing time by comparing the strength of samples mixed for different times. However in no case shall it be less than 2 minutes.

A mixer shall be cleaned out before any further concrete is mixed.

- a. When it has been out of use for more than 10 minutes, of
- b. When the class of concrete to be mixed is changed.

Hand mixing will only be permitted in exceptional circumstances and then with the specific arrangement of the Architect.

No water shall be added to mixed concrete other than the quantity of water allowed for in the mix design and incorporated in batching, unless with the approval of the Architect.

Concrete or mortar which has commenced to set shall not be remixed with additional water and in no circumstances shall such concrete or mortar be used in the work.

4.8 Transporting Concrete:

Concrete and mortar shall be transported speedily in watertight skips, trucks or barrows, and deposited in its place in the works without contamination, loss of ingredients or segregation. If segregation has never the less occurred during transport, the materials shall be remixed before deposit. Skips shall be large enough to contain an integral number of batches from the mixer. Any trucks or barrows shall have pneumatic tyres. In no case shall a period of more than 30 minutes elapse between the first wetting of cement in a batch and the completed use of the concrete or mortar in the works, the contractor shall arrange his mixing, transporting, placing, compacting and finishing techniques accordingly. No concrete shall be placed in the works until the contractors proposed method of transporting concrete have been approved. When chutes convey concrete the equipment shall be of such size and design as to ensure a continuous flow in the chute. The chute shall be of metal or metal lined and if two or more length are used they all shall have approximately the same slope. If the distance of the discharge end of the chute above the surface of the concrete is more than 1 meter, a spout or "elephant trunk" shall be used and the lower end positioned as near to the surface of deposit as practicable. The chute or "elephant trunk" shall be thoroughly cleaned before and after each run. The debris and any water used shall be discharged outside the forms.

4.9 Concrete placement

General

Concrete when deposited shall have a temperature of not less than 5° C (41 ° F) and not more than 32 ° C (90° F).

The concrete shall be placed in the positions and sequences indicated on the drawings in this specification and or as directed by the Architect/EIC.

Contractor shall give adequate notice to the Architect of his intention to concrete any section of the works.

Except where otherwise directed concrete shall not be placed unless the representative of the Architect is present and has previously examined and approved the positioning, fixing and condition of the reinforcement or any other items to be embedded and the cleanliness, positioning and suitability of the concreting surface.

The concrete shall be deposited as nearly as possible in its final position. It shall be placed in such a manner as to avoid segregation of the concrete and displacement of the reinforcement, other embedded items, or formwork. It shall be brought up in horizontal layers not exceeding 45 dia mm in compacted thickness unless otherwise authorized or directed by Architect. Concrete shall not be placed simultaneously on each side of large horizontal specified or approved construction joints.

Shuttering for walls or thin sections of considerable height shall be provided with openings or other devices that will facilitate the cleaning of the accumulation of hardened concrete on the shutters or on the metal reinforcement above the level of the concrete and the removal of concrete in the case of segregations.

Placing concrete in cold/Hot weather

No concrete shall be mixed or placed while the temperature is above 40° C on a rising thermometer or below 4° C. on a falling thermometer. The contractor shall supply an accurate maximum and minimum thermometer and hang it in an approved position on the works. Aggregates that have been exposed to frost shall not be used until completely thawed. Concrete shall be maintained by approved means at a temperature of not less than 4° C. during placing, and for a period of three days thereafter. All concrete placed during cold weather or when a frost is predicated or is likely to occur or occurs contrary to expectation shall be protected from freezing by approved means.

Placing of concrete in wet weather

Concrete shall not be mixed and or placed in rainy weather or when there is likelihood of impending heavy showers. If it becomes necessary to place concrete during rainy weather the contractor shall provide adequate protection by means of tarpaulin or similar other water proof material to immediately cover fresh concrete to

prevent rain falling over it. This protection shall be left on the concrete for a period of 24 hours after placing of concrete.

4.10 Concrete placement under water

Concrete placed under water shall be deposited through a Tremmie pipe the diameter of which shall be at least 8 times the size of the largest aggregate used in the concrete mix.

The Architect shall approve the construction of and the method of handling the tremmie pipes. The pipes shall be waterproof and sufficiently strong to withstand severe handling conditions and any joints must be sealed with adequate gaskets.

At the commencement of Tremmie work the bottom of the pipe shall be sealed before being lowered in to position. The concrete being placed shall only break the seal. The concrete placed in contact with a horizontal construction joint shall have a lower proportion of coarse aggregate and a higher proportion of cement than the remainder of the concrete. The proportion shall be agreed with the Architects' Representative.

All underwater concrete shall be placed in still water within a cofferdam or formwork, which shall extend above water level.

The proportions of the mixes shall be agreed in accordance with the strength and workability required by the specification. To allow for losses an addition of 10% of cement shall be added to mixes of concrete scheduled to be placed under water.

4.11 Maintenance of plant and Equipment

The contractor shall keep all weight batching machines, mixing machines, compressors, vibrators and other plant and equipment for concrete and mortar work clean well maintained and adjusted and where appropriate, shall check the accuracy of the measuring devices at regular intervals, all to the approval of the architects' Representative. Mixer blades shall be replaced when worn down by 20 min.

4.12 Night Work

Concrete shall not be mixed, placed, compacted or finished during the hours of darkness, except where necessary to complete a pour. However, concreting in darkness for these exceptions shall be only after obtaining the express permission in writing from the Architects' representative and in his presence only.

Immersion vibrator shall be of approved type and shall have frequency of not less than 10000 oscillations per minute. They shall penetrate the full depth of the concrete to be vibrated and be immersed at sufficiency close spacing so that the whole volume of the concrete is satisfactorily and uniformly compacted.

Where the underlying layer is of fresh concrete, immersion vibrators shall also penetrate that layer to ensure homogeneity. Immersion vibrators shall be withdrawn slowly to prevent formation of voids. Vibrators shall not be used to work the concrete along the moulds or in such a way as to damage or other embedded items. Those

who have received proper instruction and training in their use shall only operate immersion vibrators.

External vibrators shall be of approved type and shall have a frequency of not less than 3000 oscillations per minute. They shall be securely and rigidly clamped to the shuttering. External vibrators shall only be used on shuttering which is strong enough to withstand the vibration without displacement, distortion or other damage.

The contractor shall ensure that sufficient standby vibrators and ancillary equipment are available during concreting operations.

4.13 Quality Control

- i)** In order to ensure that the quality of materials and the mix proportions are suitable for the particular grade of concrete required are so maintained, sampling and testing shall be carried out regularly during the course or the works.
- ii)** As frequently as the Architects'/EIC representatives may require and in any case at least once a day while concreting is in progress the contractor shall sample and carryout a determination of the moistures content and a mechanical analysis of the fine aggregate and each nominal size of coarse aggregate shall lie within the respective limits specified and should be fraction of aggregate in the sieve differ from the corresponding fraction of aggregate in the approved mix by more than 2% of the total quantity of fine and coarse aggregate the Engineer-in-charge may instruct the contractor to modify the relative proportions of the aggregates in the mix immediately to allow for such differences.
- iii)** Workability testing shall be carried out in accordance with IS: 456. The results shall lie within the range up on which the accepted mix design is based. Testing shall be carried out at such a frequency that the required workability is consistently achieved.
- iv)** Samples of concrete shall be taken at random in accordance with IS: 516 at the time and place of deposition of the concrete at a frequency of sampling for each grade of concrete and from each concrete mixing plant at six cubes of 150 mm nominal size per 50 cubic meters of concrete placed in the works or twice per week.
- v)** Notwithstanding the foregoing additional samples shall be taken by the contractor when directed by the Architect. The test cube procedure shall be in accordance with IS: 516 throughout.
- vi)** Compliance with the specified characteristic strength shall be assumed if:
 - a.** Each of the six cubes in a group has a test strength no less than the characteristic strength or,
 - b.** Not more than one cube has test strength less than the specified characteristic strength but not less than 85% of the specified characteristic strength and the average strength of the group of four test results is not less than the specified characteristic strength plus the standard deviation of the group.

4.14 Seven day cube tests:

Acceptance of concrete is based on the 28th day results. However, the contractor shall establish a relationship between 7 days and 28 days strengths by carrying out 7 days tests at the time of performing the laboratory testing and from subsequent quality control testing. This relationship shall be used in interpreting any further test results to predict the probable value of the corresponding 28 days cube strengths. The contractor shall without delay advise the Architect of any sample that appears likely to fail to meet the specification and the contractor shall take any necessary action to minimize the effect of such failure.

P.S:- Cube test shall be done at JNTU/NCBC/O.U, Hyderabad

4.15 Acceptance Criteria

The general Acceptance Criteria of any and all of the concrete work shall be as per the relevant Clauses of IS: 456.

If any of the works test are not up to the standard, the Architect/EIC shall have the power to stop the work until the reason is investigated and steps taken to prevent further low results. The contractor shall not be entitled to any claims on account of such delays. Any concrete carried out from the batch that is afterwards found to be faulty, will be liable for rejection and if so directed, the contractor shall at his own expenses dismantle and replace the defective work and any work built thereon or shall take such other measures as may be deemed necessary by the Architect. At the discretion of the Architect, the contractor may be allowed to prove by means of a load test to be carried out at his own expense that the concrete is capable of safely with standing the loads as specified in test.

4.16 Construction joints:

Construction joints shall be provided in the position described on the drawings or elsewhere and where not so described on the drawings or else shall in accordance with the following.

- a. A joint shall be formed horizontally at top of a foundation and 75 mm below the lowest soffit of the beams meeting at the head of a column.
- b. A joint shall be formed in the rib of a large tee beam and all beams 25 mm below the soffit of the slab.
- c. Concrete in a haunch or a splay on beam or a brace and in the head of a column where one or more beams meet shall be placed without a joint at the same time as that in the beam or beams or brace.
- d. Concrete in the splay at the junction of a wall and slab shall be placed throughout without a joint but if the provisions of a joint are unavoidable the joint shall be vertical and the middle of a span.

- e. A joint in a slab shall be vertical and parallel to the principal reinforcement where it is unavoidable at the right angles to the principal reinforcement the joint shall be vertical and at the middle of the span.
- f. Expansion joints, hinges or other permanent structural joints shall be provided in the positions and of the form described in the drawings or elsewhere. Before placing new concrete against concrete that has already hardened the face of old concrete shall be cleaned and roughened and scrubbed and loose aggregate removed from the form. Immediately before placing the new concrete the face shall be thoroughly wetted and a coating of neat cement grout applied thereto. The new concrete shall be well rammed against the prepared face before the grout sets.

4.17 READY MIXED CONCRETE (as per IS 4926)

4.17.1 Materials

4.17.1.1 Selection and Approval of Materials : Materials used should satisfy the requirements for the safety, structural performance durability and appearance of the finished structure, taking full account of the environment to which it will be subjected. The selection and use of materials shall be in accordance with IS 456. Materials used shall conform to the relevant Indian Standards applicable. Where materials are used which are not covered by the provisions of the relevant Indian Standard, there should be satisfactory data on their suitability and assurance of quality control. Records and details of performance of such materials should be maintained. Account should be taken of possible interactions and compatibility between IS 4926 and materials used. Also, prior permission of the purchaser shall be obtained before use of such materials.

4.17.1.2 Cement : Cement used for concrete shall be in accordance with the requirements of IS 456.

4.17.1.3 Mineral Admixtures : Use of mineral admixtures shall be permitted in accordance with the provisions of IS 456.

4.17.1.4 Aggregates : Aggregates used for concrete shall be in accordance with the requirement of IS 456. Unless otherwise agreed testing frequencies for aggregates in plant shall be as given IS 4926.

4.17.1.5 Chemical Admixtures

(i) Use of chemical admixtures shall be permitted in accordance, with the provisions of IS 456 and IS 9103.

(ii) It shall be the responsibility of the producer to establish compatibility and suitability of any admixture with the other ingredients of the mix and the determine the dosage required to give the desired effect.

(iii) Admixtures should be stored in a manner that prevents degradation of the product and

consumed within the time period indicated by the admixture supplier. Any vessel containing an admixture in the plant or taken to site by the producer shall be clearly marked as to its content.

(iv) When offering or delivering a mix to a purchaser it should be indicated if such a mix

contains an admixture or combination of admixtures or not. The admixtures may be identified generically and should be declared on the delivery ticket.

(v) The amount of admixture added to mix shall be recorded in the production record. In special circumstances, if necessary, additional dose of admixture may be added at project site to regain the workability of concrete with the mutual agreement between the producer and the purchaser.

4.17.1.6 Water : Water used shall be in accordance with the requirement of IS 456. Unless otherwise agreed, the testing frequencies for water shall be as given in Annex A. The use of re-cycled water is encouraged as long as concrete of satisfactory performance can be produced and steps are taken to monitor the build up of chlorides in any recirculated water and that any subsequent adjustments to the mix design are made to ensure that any overall limit on chloride contents is satisfied. The addition of any recycled water shall be monitored and controlled to meet these requirements. The total amount of water added to the mix shall be recorded in the production record. The water content of concrete shall be regulated by controlling its workability or by measuring and adjusting the moisture contents of its constituent materials. The producer's production staff and truck-mixer, drivers shall be made aware of the appropriate responses to variations in concrete consistency of a particular mix caused by normal variations in aggregate moisture content or grading.

4.17.2 General Requirements

4.17.2.1 Basis of Supply : Ready-mixed concrete shall be supplied having the quality and the quantity in accordance with the requirement agreed with the purchaser or his agent. Notwithstanding this, the concrete supplied shall generally comply with requirements of IS 456. All concrete will be supplied and invoiced in terms of cubic metres (full or part) of compacted fresh concrete. All proportioning is to be carried out by mass except water and admixture, which may be measured by volume.

4.17.2.2 Transport of Concrete : Ready-mixed concrete shall be transported from the mixer to the point of placing as rapidly as practicable by methods that will maintain the required workability and will prevent segregation, loss of any constituents or ingress of foreign matter or water. The concrete shall be placed as soon as possible after delivery, as close as is practicable to its final position to avoid re-handling or moving the concrete horizontally by vibration. If required by the purchaser the producer can utilize admixtures to slow down the rate of workability loss, however this does not remove the need for the purchaser to place the concrete as rapidly as possible. The purchaser should plan his arrangements so as to enable a full load of concrete to be discharged within 30 minutes of arrival on site. Concrete shall be transported in a truck-mixer unless the purchaser agrees to

the use of non agitating vehicles. When non-agitating vehicles are used, the mixed concrete shall be protected from gain or loss of water.

4.17.2.3 Time in Transport : The general requirement is that concrete shall be discharged from the truck-mixer within 2 h of the time of loading. However, a longer period may be permitted if retarding admixtures are used or in cool humid weather or when chilled concrete is produced. The time of loading shall start from adding the mixing water to the dry mix of cement and aggregate or of adding the cement to the wet aggregate whichever is applicable. Ready-mixed concrete plant shall have test facilities at its premises to carry out routine tests as per the requirement of the standard.

4.17.3 Sampling and Testing of Ready-Mixed Concrete

4.17.3.1 Point and Time of Sampling : For the assessment of compliance of ready-mixed concrete, the point and time of sampling shall be at discharge from the producer's delivery vehicle or from the mixer to the site or when delivered into the purchaser's vehicle. It is critical that the sampling procedure and equipment used enables as representative a sample as possible to be taken of the quantity of concrete delivered. The sampling may be carried out jointly by the purchaser and the supplier with its frequency mutually agreed upon. However, it will not absolve the supplier of his responsibility from supplying in concrete as per the requirement given in this standard or otherwise agreed to where so permitted in the standard.

4.17.3.2 Workability : The test for acceptance is to be performed upon the producer's delivery vehicle discharge on site or upon discharge into the purchaser's vehicle. If discharge from the producers' vehicle is delayed on site due to lack of preparedness on behalf of the purchaser then the responsibility passes to the purchaser after a delay of more than 30 min. The workability shall be within the following limits on the specified value as appropriate:

Slump \pm 25 mm or 1/3 of the specified value, whichever is less.

Compacting factor : \pm 0.03, where the specified value is 0.90 or greater,

\pm 0.04, where the specified value is less than 0.90 but more than 0.80,

\pm 0.05, where the specified value is 0.80 or less.

Flow table test may be specified for concrete, for very high workability (see IS 9103) Acceptance criteria for spread (flow) are to be established between the supplier and the purchaser.

4.17.3.3 Specified Strength

(i) Compliance shall be assessed against the requirements of IS 456 or other agreed Indian Standard. The purchaser may perform his sampling and testing or may enter into an arrangement with the producer to provide his testing requirements. (ii) Unless otherwise agreed between the parties involved, the minimum testing frequency to be applied by the producer in the absence of a recognized ready- mixed concrete industry method of production control should be one sample for every 50 m³ of production or every 50 batches, whichever is the greater frequency. Three test specimens shall be made up for each sample for testing at 28 days (see also IS 456). In order to get a relatively quicker idea of the

quality of concrete, optional test on beams for modulus of rupture at 72 ± 2 h or at 7 days or compressive strength test at 7 days may be carried out in addition to 28 days compressive strength test. For this purpose the value should be arrived at based on actual testing. In all cases 28 days compressive strength shall alone be the criteria for acceptance or rejection of the concrete.

(iii) The purchaser shall inform the producer if his requirements for sampling and testing are higher than one sample every 50 m³ or 50 batches, whichever is the greater frequency.

4.17.3.4 Additional Compliance Criteria : Any additional compliance criteria shall be declared to the producer by the purchaser prior to supply and shall be mutually agreed upon in terms of definition, tolerance frequency of assessment, method of test and significance result.

4.17.3.5 Non-Compliance : The action to be taken in case of non-compliance shall be declared and mutually agreed upon.

4.17.4 Information to be Supplied by the Purchaser

4.17.4.1 The purchaser shall provide to the producer the details of the concrete mix or mixes required by him and all pertinent information on the use of the concrete and the specified requirements. Prior to supply taking place, it is recommended that a meeting is held between the purchaser and the producer. Its objective to clarify operational matters such as notice to be given prior to delivery, delivery rate, the name of the purchasers authorized representative who will coordinate deliveries, any requirements for additional services such as pumping, on site testing or training, etc.

4.17.4.2 Designed Mixes : Where the purchaser specifies a designed mix to be supplied it is essential that all relevant information is conveyed to the producer.

4.17.4.3 Prescribed Mixes : The concrete mix shall be specified by its constituent materials and the properties or quantities of those constituents to produce a concrete with the required performance. The assessment of the mix proportions shall form an essential part of the compliance requirements.

4.17.5 Information to be Supplied by the Producer

When requested, the producer shall provide the purchaser with the following information before any concretes is supplied:

- (a) Nature and source of each constituent material,
- (b) Source of supply of cement,
- (c) Proposed proportions or quantity of each constituent/ m³ of fresh concrete.
- (d) Generic type(s) of the main active constituent(s) in the admixture;
- (e) Whether or not the admixture contains chlorides and if so, the chloride content of the admixture expressed as a percentage of chloride ion by mass of admixture;
- (f) Where more than one admixture is used, confirmation of their compatibility and
- (g) Initial and final setting time of concrete when admixture is used at adopted dosage (tested as per IS 8142).

4.18 Form Work

Form work construction

- i) The contractor should submit detailed drawing of the centering & shuttering and get the same approved from the Architect / Client and before laying concrete also he should get the centering shuttering approved in writing before start of concreting. The concreting should be done in the scientific and methodical manner so as to give a uniform finish in line and level, so that minimum rendering or plastering is done. The form found defective should be dismantled & redone and site cleared. For removal of centering and shuttering, the span of beam & slab has not been given, which should have been done as given on.
- ii) Form work shall be so constructed that concrete can be properly placed and thoroughly compacted. Form work shall be firmly supported and adequately strutted, brace or tied. It shall be capable of adjustment to the lines and dimensions of the finished concrete and it shall be sufficiently strong to resist without excessive distortion under the influence of the weather.
- iii) All form work shall be constructed to be rigid during the casting of concrete and constructed so that the surfaces adjacent to the concrete are with plus minus 6mm or the required surfaces when supporting the concrete and sufficiently watertight to prevent loss of liquid from the concrete and it shall be capable of being removed without shock or vibration to the concrete. Forms shall be cleaned with compressed air immediately before placing concrete to remove all rubbish. The inside faces of the form work shall be treated with a mould oil of type to be approved by the Architect and every care shall be taken to prevent mould oil from getting on to the reinforcement.
- iv) Shuttering shall be braced and strutted to prevent deformation under the weight and pressure of the wet concrete, constructional loads, wind and other forces. The deflection shall not exceed 3 mm bottoms of beams boxes shall be erected with an upward camber of 6 mm for each 3M. of span.

Removal of Form work (Stripping Time)

Unless certainly specified in the drawing or directed by the Architect the following shall be minimum intervals of time, which should be allowed between the placing of the concrete and the striking of the mould where ordinary Portland cement is used.

- a. Walls, columns & vertical faces of all structural members 24 to 48 hours as may be decided by the Engineer-in-Charge.
- b. Slab
 - i) Spanning up to 4.50 M 7 days
 - ii) Spanning over 4.50 M 14 days
- c. Beams and arches

i)	Spanning up to 6 M	14	days
ii)	Spanning up to 6 M & up to 9 M	12	days
iii)	Spanning over 9 M	28	days.

- Note: 1. For other types of cement the stripping time recommended for ordinary Portland cement may be suitably modified. If Portland pozzoland or low heat cement has been used for concrete the stripping time will be 10/7 of the period stated above.
2. The number of props left under their sizes and disposition shall be such as to be able to safely carry the full dead load of the slabs, beam or arch as the case may be together with any live load likely to occur during curing or further construction.

However, the contractor shall delay the removal of shuttering as long as necessary in order to avoid damaging the work. Where shuttering to soffit is removed prior to the props this is only permissible if the design of the shuttering allows such a sequence of operations without the props being in any way disturbed. If the shuttering and props are not independent both must be left in place until propping is no longer required.

Where shuttering to sides is removed prior to the shuttering soffit, the side shuttering shall be removed without disturbing the shuttering to the soffit.

No concrete structure shall be loaded until the concrete is at least 21 days old and only then with the approval of the Architect and subject to such condition as may be imposed.

The contractor may be required to produce evidence that the concrete has attained a strength sufficient to support the live and dead loads to which that part of the structure may be subjected. This evidence shall consist of reports of compression tests made on job cured test cubes. The foregoing provisions of the this clause shall not relieve the contractor of his responsibility to ensure that the stability and strength of any structure or part of a structure is not impaired by the release of shuttering.

Proposals for form work

Not less than 8 days before the contractor proposes to construct any form work his detailed proposals thereof shall be delivered to the Architect. Proposals shall comprise all relevant information including calculations, detailed drawings, rates of placing of concrete, sequence placing of concrete and details of any external vibrators which are proposed to be used.

No form work shall be constructed until the contractors' proposals have been received and approved by the Architect.

Type of form work

Two quantities of form work shall be used i.e. Rough form work and wrought form work, as noted on the Architects drawings or described hereafter.

Rough form work may be constructed of sawn timber or other materials as agreed by the Architect. The edges of the boards shall be planned or otherwise rendered grout tight. Provided it remain grout tight, rough form work may be used any number of time.

Wrought form work, to all surfaces for which a smooth fair faced finish is required shall be constructed of purpose made metal, fiber glass, waterproof ply wood panel, hardboard lined form work or of planed timber with edges shot so that tight joints can be formed which will prevent loss of liquid from the concrete. The use of a particular material for wrought form work shall be consistently maintained throughout the structure. The surfaces of the form work in contact with the concrete shall be smooth and free from all blemishes. The number of times wrought form work may be used shall be subject to the surfaces, joints and edges being clean and undamaged.

Surfaces of concrete

The contractor shall ensure that the finished face of concrete offers a suitable keyed surface for the application of the finishing media, e.g. plaster, sand and cement screed etc. The contractor shall also ensure that where thin films of finished, e.g. skim coats "Snowcem", paint etc. are to be applied that the previous provisions regarding supporting of form work are complied with, so that the concrete faces to be treated are left smooth, unblemished and true to line both vertically and horizontally and require no making good before applying the finish.

Should the contractor fail however, to comply with the provision of this Clause, he shall submit details of his proposed method of redoing the situation to the Architect and must obtain written consent from the Architect to the proposals before continuing with any further work on the affected surfaces.

Tolerances in concrete surfaces.

The permissible tolerance in the surface of the hardened concrete shall not exceed the following limits:

Type of irregularity:

Departure of member planes from position and level	±	12mm
Variation in cross – sections	±	6mm
Sharp changes in pland	±	2mm
Departure from 3 M. template of any part of planes	±	3mm

4.19 Curing

Canvass, Hessian or other approved screens shall be erected at all points where concrete is being placed to shade the concrete from the direct sun or from drying winds and such screens shall be kept in position until the surface of the concrete

has been protected as specified in the following Clauses. The contractor shall be responsible for removing such screens and preparing surface of concrete.

As soon as possible after it has been placed and concrete shall be covered with Hessian or other approved material to protect it from the sun all concrete surfaces shall be kept visibly wet continuously for 14 days after placement, the Hessian being kept in position throughout this period. Surfaces cast against forms shall also be kept moist and covered with Hessian for these periods if the form work is removed before the periods have elapsed.

The top surface of slab shall be kept flooded with water at all times till the curing period of 14 days is over. Columns, wall and beam sides and other surface shall be completely covered by gunny bags and kept thoroughly wet continuously for the period specified for curing. The ceiling of slabs shall be frequently sprayed with water until the end of curing period.

The contractor shall ensure that all times there is an adequate supply of fresh water available for curing the concrete.

4.20 Examinations and Repairs

The contractor shall not proceed with the surface finish or making good of concrete surfaces until he has received the Architects' written permission to do so and he shall not apply cement slurry or mortar or any other coating to the concrete surfaces as struck form the shuttering or do anything else which would hinder the proper inspection of the concrete by the Architect.

Concrete which is defective has honeycombs or which contains defective parts shall be cut out completely unless the Architect agrees that a repair may be satisfactorily effected. This agreement shall not preclude

Subsequent condemnation of the repaired work.

The method of repairing defective concrete, which the contractor proposes to adopt, shall be submitted to the Architect for his prior written agreement in each particular case.

No repairs or remedial work shall be carried out without prior inspection and instructions of the Architect. (No extra shall be paid to the contractor for the repair works).

4.21 Fair face finish to concrete surfaces

Concrete surfaces shall be finished smooth fair faced where indicated as such on the drawings. These areas shall be entirely free from honey combing, stains, fins, lapping, nail or screw marks, raised grain marks, air holes or any other imperfections. They shall also be of even texture throughout. Very slight variations between member and member may be acceptable but any such variations within a

single member cannot be tolerated. The concrete faces shall not be marked with mould oil.

The form work to these areas shall be wrought form work as specified herein.

Following inspection by the Architect the whole surface shall be rubbed down by hand. Any surfaces with major imperfections, i.e. greater than can be easily, completely and permanently obliterated by rubbing down shall be reported immediately to the Architect.

Remedial work is not normally possible to the above fair faced finish surfaces and the contractor will be required to demolish and recast defective works.

4.22 Reinforcement Fabrication

Bending Schedules

The Contractor shall submit to the Engineer – in – charge (E.I.C), for the E.I.C approval, bending schedule for all the works not less than Ten days before the contractor intends to bend the reinforcing steel.

The approval of the E.I.C shall in no way absolve the contractor of his responsibilities under the Contractor.

Programme of reinforcement details required

The Contractor shall provide a programme, which gives the E.I.C at least 28 days prior notification of any reinforcement details, required. The contractor shall justify the practicability of his programme to the Architect should it seem unreasonable before the programme be regarded as valid notification. If progress on site falls behind the contractor' programme, the issue of reinforcement details may be delayed by a period corresponding to the delay in construction.

Bending and placing reinforcement

Reinforcement shall be cut and bent to the shapes and dimensions shown on the finally agreed bending schedules in accordance with the requirements of IS: 2502 and to the tolerances set out therein.

Bending shall be carried out with an appliance, which provides a continuous and uniform application of the bending deformation at every section of the bend. There shall be provision for the free movement of the surface of the bar during bending and the bends shall follow the contour of the former without peaking.

High Yield reinforcement must be bent without the application of artificial heating.

Mild steel reinforcement may be sent either hot or cold but shall not be heated to a temperature greater than 85° C and if heated not cooled by quenching.

Mild steel reinforcement temporary left projecting from the concrete at construction or other joints shall not be bent out of position unless shown on the drawings or agreed by the Architect. Where such bending and subsequent re-bending takes place the radius of the bend shall not be less than 4 bar diameters.

Reinforcement shall be fixed without forcing in the position shown on the drawings within a tolerance of 5 mm or 5% of the minimum dimension of cross section, whichever be the greater and maintained so that it is not displaced during concreting or other operations.

Horizontal bars shall be supported sufficiently to prevent displacement. This may be plastic spacer, chairs bent from steel bar or by concrete blocks. The method and sufficiently of the support shall be subject to the approved of the Architect.

Where concrete blocks are used, they shall be pre-cast from concrete (not mortar) of the same class as the concrete in which they are to be embedded, except that the largest size of aggregate shall be 10 mm. Each block shall be secured to the reinforcement with wire or a clip embedded in the center of the block so that, it shall not be in contact with the shuttering or subsequently cause rust marks on the concrete.

Intersections of reinforcement shall be bound together with 16 gauge annealed soft iron binding wire.

Unless otherwise noted on the drawings, no intersections of reinforcement may be fixed by welding without the permission of the Architect. High yield and cold worked steel shall in no circumstances be welded together.

Should any difficulty arise during the placing of steel in obtaining the appropriate cover, the contractor shall immediately draw the attention of the Architect to the difficulty and shall carry out such corrective measures as the Architect may suggest.

Protection of reinforcement and concrete

The contractor shall ensure that movement of men and material subsequent to steel fixing is organized so that reinforcement is not thereby displaced.

Reinforcement left projecting from and concrete shall be protected so that there is no risk of corrosion staining to any exposed concrete surface or to any other part of the works. For this purpose a stiff grout wash will normally be acceptable to the Engineer, this wash shall be wire-brushed vigorously before further concrete is placed to remove any ill-bonded material.

BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

1. WHEREAS MISHRA DHATU NIGAM LIMITED (A GOVERNMENT OF INDIA ENTERPRISE) PO KANCHANBAGH, HYDERABAD (hereinafter referred as “ The Owner / Company” which expression shall unless repugnant to the subject or context includes its legal representatives, successors and assigns) has issued tender paper vide its Tender No: _____ for supply of _____ (herein after called “the said tender”) to M/s. _____ (herein after called “the said Tenderer(s)” which expression shall unless repugnant to the subject or context includes their legal representatives, successors and assigns) and as per terms and conditions of the said tender, the tenderer shall submit a Bank Guarantee for Rs./USD _____ towards earnest money in lieu of cash.
2. WE (Bank Name and Address) (herein after called the bank) do hereby undertake to pay the amount due and payable under this Guarantee without any demur merely on a demand from the company stating that in the opinion of the company, which is final and binding, the amount claimed is due because of any withdrawal of the tender or any material alteration to the tender after the opening of the tender by way of any loss or damage caused or would be caused or suffered by the company by reason of any breach by the said tenderer(s) of any of the terms and conditions contained in the said tender or failure to accept the Letter of Intent / Agreement or that the amount covered under this Guarantee is forfeited. Any such demand made on the bank by the owner shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs./USD _____.
3. We undertake to pay to the Company any money so demanded notwithstanding any dispute or disputes raised by the tenderer(s) in any suit or proceeding pending before any office, court or tribunal relating thereto, our liability under this present guarantee being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder. Our liability to pay is not dependant or conditional on the owner proceeding against the tenderer.
4. The guarantee herein contained shall not be determined or affected or suspended by the liquidation or winding up, dissolution or change of constitution or insolvency of the said tenderer(s) but shall in all respect and for all purposes be binding and operative until payment of all money due or liabilities under the said tender are fulfilled.
5. WE (Bank Name and Address) further agree that the guarantee herein contained shall remain in full force and effect during the period that would

be taken for the finalization of the said tender and that it shall continue to be enforceable till the said tender is finally decided and order placed on the successful tenderer(s) and /or till all the dues of the company under/or by virtue of the said tender have been fully paid and its claims satisfied or discharged or till a duly authorized officer of the company certifies that the terms and conditions of the said tender have been fully and properly carried out by the said tender(s) or till date: _____ whichever is earlier and accordingly discharges the guarantee.

6. That the Owner/Company will have full liberty without reference to us and without affecting this guarantee to postpone for any time or from time to time, the exercise of any of the power of the owner under the tender.
7. We (Bank Name and Address), lastly undertake not to revoke this guarantee during its currency except with the previous consent of the company in writing. We further undertake to keep this Guarantee renewed from time to time on the request of the Tenderer(s).
8. Notwithstanding anything contained herein before, our liability shall not exceed Rs./USD _____ towards earnest money in lieu of cash and shall remain in force till (date). Unless a demand or claim under this Guarantee is made on us within three months from the date of expiry i.e., _____ we shall be discharged from all the liabilities under this guarantee

Date: _____

(Bank Name and Address)

Signature of duly
Authorized person
On behalf of the Bank
With seal & signature code

PRE-CONTRACT INTEGRITY PACT

General

1. Whereas M/s. MISHRA DHATU NIGAM LIMITED a Government of India Enterprise incorporated and registered as a company under the company Act, 1956 having its registered office at P.O. Kanchanbagh, Hyderabad – 500058 state of A.P., India hereinafter referred to as the Buyer and the first part, propose to procure

as _____ hereinafter referred to as _____ Defence Stores, _____ and _____ M/s. _____, (which term shall mean and include its successors assigns and legal representation), herein after referred to as the Bidder and the second party, has offered the stores.
2. Whereas the Bidder is a private company / public company / partnership / registered export agency, constituted in accordance with the relevant law in the matter and the Buyer is a Ministry of the Government of India performing its functions on behalf of the President of India.

Objectives

3. Now, therefore, the Buyer and the Bidder agree to enter into this Pre-contract agreement, hereinafter referred to as Integrity Pact, to avoid all forms of corruption by following a system that is fair, transparent and free from any influence / unprejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to: -
 - 3.1 Enabling the Buyer to obtain the desired equipment at a competitive price in conformity with the defined specifications of the Service by avoiding in high cost and the distortionary impact of corruption on public procurement, and
 - 3.2 Enabling bidder to abstain from bribing or any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also refrain from bribing and other corrupt practices and the Buyer will commit to prevent corruption, if any form, by their officials by following transparent procedures.

Commitments of the Buyer:

4. The Buyer Commits itself to the following: -
 - 4.1 The Buyer undertakes that no official of the Buyer connected directly or indirectly with the contract, will demand, take a promise for or accept directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the Bidder, either for themselves or for any person, organization of third party related to the contract in exchange for an

advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

- 4.2 The buyer will, during the pre-contract stage, treat all Bidders alike, and will provide to all Bidders the same information and will not provide any such information to any particular Bidder which could afford an advantage to that particular Bidder in comparison to other Bidders.
- 4.3 All the officials of the Buyer will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.
5. In case of any such preceding misconduct on the part of such officials (s) is reported by the bidder to the Buyer with full and verifiable facts and the same is prima facie found to be correct by the Buyer, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the Buyer and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the Buyer the proceedings under the contract would not be stalled.

Commitments of Bidders:

6. The Bidder commits himself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of his bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commits himself to the following:-
 - 6.1 The Bidder will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Buyer, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the Contract.
 - 6.2 The Bidder further undertakes that he has not give, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Buyer or otherwise in procuring the contract or forbearing to do or having done any act in relation to the obtaining or execution of the Contract or any other contract with the Government for showing or forbearing to show favour or disfavor to any person in relation to the Contract or any other contract with the Government.
 - 6.3 The Bidder will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

- 6.4 The Bidder will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 6.5 The Bidder further confirms and declares to the Buyer that the Bidder is the original manufacture / integrator / authorized government sponsored export entity of the defence stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the Buyer or any of its functionaries, whether officially or unofficially to the award of the contract to the Bidder, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.
- 6.6 The Bidder, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the Buyer or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.
- 6.7 The Bidder shall to use improperly, for purposes of competitor or personal gain, or pass on to others, any information provided by the Buyer as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The Bidder also undertakes to exercise due and adequate care last any such information is divulged.
- 6.8 The Bidder commits to refrain from giving any complaint direct or through any other manner without supporting it with full and verifiable facts.
- 6.9 The Bidder shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 6.10 A person signing IP shall not approach the courts while representing the matters to IEMs and he/she will await their decision in that matter.
- 6.11 A Bidder undertakes that in case of subcontracting, in case such sub-contracting is allowed by MIDHANI, he becomes a Principal Contractor and he/she shall take the responsibility of adoption of IP by the sub contractor.

7. Previous Transgression

- 7.1 The Bidder declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify bidder's exclusion from the tender process.
- 7.2 If the Bidder makes incorrect statement on this subject, Bidder can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

8. Earnest Money / Security Deposit

8.1 Every bidder, while submitting commercial bid, shall deposit an amount as specified in the RFP as Earnest Money / Security Deposit, with the buyer through any of the following instruments: -

- (i) Bank Draft or a Demand draft in favour of M/s. Mishra Dhatu Nigam Limited, Hyderabad.
- (ii) A confirmed guarantee by an Indian Nationalized Bank, promising payment of the guarantee sum to M/s. Mishra Dhatu Nigam Limited, Hyderabad on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the Buyer shall be treated as conclusive proof for payment.

8.2 The Earnest Money / Security Deposit shall be valid upto a period of Six Months or the complete conclusion of the contractual obligations to complete satisfaction of both the bidder and the buyer, whichever is later. In case there are more than one bidder, the Earnest Money / security deposit shall be refunded by the buyer to those bidder) s) whose bid (s) does/do not qualify for negotiation by the Commercial Negotiation Committee (CNC) as constituted by the Buyer, Immediately after recommendation is made by the CNC on the bid(s) after an evaluation.

8.3 In the case of successful bidder a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of sanctions for violation shall be applicable for forfeiture of performance bond in case of a decision by the Buyer to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

8.4 The provisions regarding Sanctions for violation in Integrity Pact include forfeiture of performance Bond in case of a decision by the Buyer to forfeit the same without assigning any reason for imposing sanction for violation of Integrity Pact.

8.5 No interest shall be payable by the Buyer to the Bidder(s) on earnest money / Security Deposit for the period of its currency.

9. Company Code of Conduct

9.1 Bidders are also advised to have a company code of conduct (clearly rejecting the use of bribes and other unethical behavior) and a compliance program for the implementation of the code of conduct throughout the company.

10. Sanctions for Violation:

10.1 Any breach of the aforesaid provisions by the Bidder or any one employed by him or acting on his behalf (whether with or without the knowledge of the Bidder) or the commission of any offence by the Bidder or any one employed by him or acting on his behalf, as defined in chapter IX of the Indian Penal Code, 1860 or the Prevention of Corruption Act 1988 or any other act enacted for the prevention of corruption shall entitle the Buyer to take all or any one of the following actions, wherever required: -

- (i) To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the Bidder. However, the proceedings with the other Bidder(s) would continue.
- (ii) The earnest Money / Security Deposit / Performance Bond shall stand forfeited either fully or partially, as decided by the Buyer and the Buyer shall to be required to assign any reason therefore.
- (iii) To immediately cancel the contract, if already signed, without giving any compensation to the Bidder.
- (iv) To recover all sums already paid by the Buyer, and in case of an Indian Bidder with interest thereon at 2% higher than the prevailing Prime Lending Rate, while in case of a Bidder from a country other than India with interest thereon at 2% higher than LIBOR. If any outstanding payment is due to the Buyer from the Bidder in connection with any other contract for any other Defence stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.
- (v) To en-cash the advance bank guarantee and performance bond / warranty bond, if furnished by the Bidder, in order to recover the payments, already made by the Buyer, along with interest.
- (vi) To cancel all or any other Contracts with the Bidder.
- (vii) To debar the Bidder from entering into any bid from the Government of India for a minimum period of five years, which may be further extended at the discretion of the buyer.
- (viii) To recover all sums paid in violation of this Pact by Bidder(s) to any middleman or agent or broker with a view to securing the contract.
- (ix) If the Bidder or any employee of the Bidder or any person acting on behalf of the Bidder, either directly or indirectly, is closely related to any of the officers of the Buyer, or alternatively, if any close relative of an officer of the Buyer has financial interest / stake in the Bidder's firm, the same shall be disclosed by the Bidder at the time of filing of tender. Any failure to disclose the interest involved shall entitle the Buyer to rescind the contract without payment of any compensation to the Bidder. The term 'close relative' for this purpose would mean spouse whether residing with the Government servant or not, but to include a spouse separated from the Government servant by a decree or order of a competent court, son or daughter or step son or step daughter and wholly dependent upon Government servant, but does not include a child or step child who is no longer in any way dependent upon the Government servant or of whose custody the Government servant has been deprived of by or under any law, any other person related, whether by blood or marriage, to the Government servant or to the Government servant's wife or husband and wholly dependent upon Government servant.

- (x) The Bidder shall not lend to or borrow any money from or enter into any monetary dealings or transactions directly or indirectly, with any employee of the Buyer, and if he does so, the Buyer shall be entitled forthwith to rescind the contract and all other contracts with the Bidder. The Bidder shall be liable to pay compensation for any loss or damage to the Buyer resulting from such rescission and the Buyer shall be entitled to deduct the amount so payable from the money(s) due to the Bidder.
- (xi) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the Buyer with Bidder, the same shall not be opened.

10.2 The decision of the Buyer to the effect that a breach of the provisions of this Integrity Pact has been committed by the bidder shall be final and binding on the Bidder, however, the Bidder can approach the monitor(s) appointed for the purposes of this pact.

11. Fall Clause

11.1 The Bidder undertakes that he has not supplied/is not supplying the similar systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry / Department of the Government of India and if it is found at any stage that the similar system or sub-system was supplied by the Bidder to any other Ministry / Department of the Government of India at a lower price, then that very price will be applicable to the present case and the difference / in the cost would be refunded by the Bidder to the Buyer, if the contract has already been concluded.

11.2 The Bidder shall strive to accord the most favored customer treatment to the Buyer in respect of all matters pertaining to the present case.

12. Independent Monitors

12.1 **Shri R MUKUNDAN, IRPS (Retd)** , No. 17/3, MIG Flats, 12th Avenue, Ashok Nagar, CHEENAI-600 083 is the Independent External Monitor for Midhani.

12.2 As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Chairman & Managing Director of M/s. Mishra Dhatu Nigam Limited, Hyderabad.

13. **Examination of Books of Accounts:** In case of any allegation of violation of any provisions of this Integrity Pact or payment of commission, the Buyer or its agencies shall be entitled to examine the Books of accounts of the Bidder and the Bidder shall provide necessary information of the relevant financial documents in English and shall extend all possible help for the purpose of such examination.

14. **Law and Place of Jurisdiction:** This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the Buyer i.e. Hyderabad.

15. Other Legal Actions: The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

16. Validity

16.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 5 years or the complete execution of the contract to the satisfaction of both the Buyer and the Bidder, whichever is later.

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

17. The parties hereby sign this Integrity Pact at Hyderabad on _____.

BIDDER

BUYER

M/s. Mishra Dhatu Nigam Limited,
(A Govt. of India Enterprise)
P.O. Kanchanbagh,
Hyderabad 500 058,
INDIA.

In the presence of

In the presence of

Witness:

Witness:

1.

1.

2.

2.

LIST of material to be used in this construction

Sl. No	Description of Material	<u>Approved Brands</u>
1	<u>Enamel paints</u>	Asian/Berger/Nerolac
2	<u>Cement</u>	53 Grade O.P.C confirming to IS 12269 to be approved by MIDHANI.
3	<u>SAND</u>	Good River sand –Zone-III/IV- VIJAYAWADA/BODHAN/KARIMNAGAR/Kotha kota
4	<u>RMC</u>	RMC confirming to IS 4926 to be approved by MIDHANI.
5	<u>TMT Bars</u>	Conforming to Fe 415/ Fe 500 / Fe 500D. VSP,TATA,JSW,SAIL, JSPL
6	<u>STRUCTURAL STEEL</u> <u>, MS inserts & embedment's</u>	VSP,TATA,JSW,SAIL, JSPL
7	<u>Water proofing</u>	FOSROC, BASF, STP, CHRYSO etc with approval of MIDHANI
8	<u>Welding Electrodes</u>	GEE Limited, Ador Limited, Adani, Modi hitech, Mangalam

Note: No time extension will be awarded for non availability of approved brand material. However for such issues, the same is to be brought in to the notice of Engineer in-Charge well in advance time with supporting documents for non-availability of approved brand materials & proposal of equivalent brand available in market.

CHECK LIST OF DOCUMENTS TO BE ENCLOSED BY CONTRACTOR IN TECHNICAL BID for "CONSTRUCTION OF MACHINE FOUNDATIONS IN WIDE PLATE MILL FACILITY", MIDHANI.

SL. NO	DESCRIPTION OF PRE-QUALIFICATION CRITERIA	YES / NOT ENCLOSED	PAGE NUMBER
1.	Registration of sole bidder		
2.	PAN Registration No.		
3.	GST Registration No.		
4.	Average Annual Turnover during the last 3 financial years should be equal to or more than Rs 4825.00 lakhs		
5.	Submission of EMD for Rs 15.00 lakhs.		
6.	Solvency Certificate		
7.	Income Tax Returns for last three financial years (FY 2016-17, 2015-16, 2014-15).		
8.	<p>Experience of Sole Bidder / Consortium partners having successfully completed similar machine foundation, PEB foundations, RCC building etc., in the last 7 years from the date of this tender notice.</p> <p>P.S:- Similar machine foundation means mass RCC concrete for heavy machinery foundations similar PEB foundations means RCC foundations for pre-engineering metal structures. Similar RCC building means RCC frame structures with RCC foundations, beams, slabs etc. The detailed work order containing BOQ along with experience certificate shall be enclosed by the bidder. Experience of successfully completed similar machine foundation, PEB foundations, RCC building etc during last 7 years from the date of tender notice should be either of the following:</p>		

	<p>A) 3 similar completed works each costing not less than the amount equal to 40% of the estimated cost (Rs 1609.60 lakhs). OR</p> <p>B) 2 similar completed works each costing not less than the amount equal to 50% of the estimated cost (Rs 2012.00 lakhs). OR</p> <p>C_ one similar completed work each costing not less than the amount equal to 80% of the estimated cost (Rs 3219.20 lakhs).</p> <p>PS: - 1) Experience certificates and work orders along with detailed BOQ issued by clients shall be duly self attested.</p> <p>2) For experience certificate/work order including BOQ issued by private works, shall be supported by TDS/26AS certificates for the year of work executed.</p>		
9.	Registration of ESI & PF		
10.	Unconditional acceptance to all Technical, commercial terms and conditions along with corrigendums if any.		
11.	Details of registration of firm in MIDHANI/CPDW/MES, other State/Central govt. organizations, MNC's or Reputed Private Organizations if any.		
12.	RTGS details (Bank details for e-payment)		
13.	Pre Contract Integrity pact		
14	A bidder has to enclose all the supporting documents along with technical bid		

Ps:- The experience certificate (issued by clients) enclosed by bidders shall contain the following;

- a) Name of the work
- b) Work order number along with value & date
- c) Date of actual start of work
- d) Date of actual completion
- e) Actual Value of work done

Declaration by contractor

1. I have seen the site and understood the full scope of work viz Specifications, drawings, Tentative Time Schedule etc.
2. I have noted the changes (if any) as per pre-bid meeting and understood the scope of work and I agree to enclose pre-bid meeting minutes along with

technical bid, failing which MIDHANI is empowered to reject or consider as per decision of MIDHANI Management. I shall not claim any extra due to self misunderstanding of drawings, specifications etc, what so ever.

3. **I agree to submit all the documents along with this offer.**
4. Any information provided in the bid if found to be false, MIDHANI is empowered to take action against me as per the MIDHANI rules in VOGUE.

CONTRACTOR
SIGNATURE AND SEAL

Note:-

- 1) The tender application and related documents will be assessed to demonstrate convincingly that the applicant possesses the required experience, together with the technical, administrative and financial capability to perform the Contract and has good performance record in the relevant area. Applicants will not be considered if they have a poor performance record such as: abandoning of works; not properly completing /defaulting contracts, inordinate delays in completing contracts; litigation history, financial failure, etc. Midhani reserves the right to approach its previous clients for the purpose of this Contract.
- 2) For Technical clarifications, pl Contact- Sri Debasish Dutta, GM (PMO)- 24342446, mob no-9177387087,Sri Madan Mohan.G, AG.M (PMO) , Mob.no-9177304937, Land line-040-24343944, mail id:- gmadanmohan@midhani.com ,Sri D. Harshavardhan, Dy. Mgr, mob no. 9949099524 mail id: dhvardhan@midhani.com, Sri IK Chaitanya, Dy. mgr, mob no-9963974074,mail ; ikchaitanya@midhani.com,.
- 3) For commercial clarifications, pl contact Sri V.S Ram Gopal, Addl.G.M (I/c Purchase), mob no-89788 - 85165, mail vsramgopal@midhani.com, land line 24184449. Sri Rajesh.M, Asst. Mgr ,040-24184276
- 4) The Bidder is requested to submit their questions / queries / clarifications in writing by email / fax/ post to reach MIDHANI not later than one week before the meeting.



**MISHRA DHATU NIGAM LIMITED
P.O.KANCHANBAGH, HYDERABAD**

Part-II (PRICE BID)

**CONSTRUCTION OF MACHINE FOUNDATIONS IN
WIDE PLATE MILL FACILITY, MIDHANI,
KANCHANBAGH, HYDERABAD-58.**

PURCHASE DEPARTMENT**Tender Notice No: MDN/PUR/AP2081018/EADVVT/087/18-19****Date:- 14-06-2018****To,**

Dear Sir,

**Sub: - CONSTRUCTION OF MACHINE FOUNDATIONS IN WIDE PLATE MILL FACILITY
, MIDHANI - req**

1. Please find enclosed herewith a Tender Enquiry for the above work. You are requested to furnish your offer before last date of submission, along with, EMD of Rs 15.00 lakhs online through link <http://ebs.in/midhani/public> or visit midhani website www.midhani.com> purchase > Tenders > EMD fee (Earnest Money Deposit) and security Deposit –ONLINE PAYMENT.. The tenders without EMD amount will be rejected. Please confirm whether you are MSME Unit or MSME Unit owned by SC/ST Entrepreneur or having NSIC registration. If yes, please submit latest valid documentary proof for availing benefits as per government guidelines (Estimated value of work is Rs 4024 Lakhs including GST).
2. Tender shall be submitted online on or before 05-07-2018 up to 10.30 hrs.
3. The period of completion of job will be total 12 months (staggered) from the date of handover of site. Time is essence of the contract; contractor has to mobilize materials & labour to complete within 12 months (staggered) time period as placed below;
 1. Package (a) - 7 Months
 2. Package (b) - 3 Months
 3. Package (c) - 11 Months
 4. Package (d) - 7 Months
 5. Package (e) - 12 MonthsPlease note that the start date for all packages a, b, c, d & e are counted from the date of handover of site.
4. The tenderer shall inspect the site of work and understand the scope of work before quoting. No extra amount will be paid on account of misunderstanding either in scope of work, specification, drawings, site conditions etc.
5. All materials required for the work shall be arranged by the contractor unless until specified in Bill of Quantities.
6. The work shall be carried out as per MES-SSR-2009 specifications & for items not covered in MES-SSR 2009, specification given in preamble or latest IS code practice to be followed.
7. This is an item rate contract and the quantities are approximate, but payment will be made only on actual work done based on joint measurement.
8. Twelve R. A Bills, 10 (Ten) material advance bills and one Final Bill will be paid. Material advance equivalent to 75% of value of material brought to the site (excluding transport & tax) against TMT/MS/Embedment/insert Steel and Cement will be paid. Material advance for the cement supplied to RMC will be made if batching plant is established at MIDHANI site. The contractor has to furnish all material bills along with each bill (if any). To

expedite the processes, bills may be submitted in soft copy & after verification, two hard copies to be submitted. The material advance will be recovered on pro-rata basis in R.A. bills as per consumption at site. However, entire material advance bills will be recovered on or before the pre-final bill irrespective of consumed/unused

9. R.A Bill will be paid within 15 days from the date of certification of Engineer-in-charge. However, Final payment will be made within 30 days after satisfactory completion of work and certification by Engineer-in-charge.

a) **Security Deposit (S.D):**

The successful tenderers has to deposit 5% of contract value as Security Deposit at the time of agreement. This 5% Security Deposit can be paid online through link <http://ebs.in/midhani/public> or visit midhani website www.midhani.com > purchase > Tenders > Security Deposit or contractor can deposit Bank Guarantee from any nationalized bank. The validity of B.G shall be equivalent to contract period plus three months claim period. Further ,EMD deposited will be adjusted in the 5% security deposit and this 5% Security Deposit will be released after satisfactory completion of work, Site clearance and cleaning by the contractor duly certified by Engineer- In- Charge.

b) **Retention Money :** A sum of 5% of gross value of work done will be deducted from each running bill and final bill. The same will be released after the completion of defect liability period of 12 months and after certification of Engineer –In- Charge. Also, contractor can submit Bank Guarantee for equivalent amount in the prescribed format issued by nationalized or scheduled bank and same shall be valid for defect liability period + 3 months claim period. Any defect developed during the guarantee period has to be rectified free of cost by contractor as soon as notice received from MIDHANI. Failing which MIDHANI will carry work at the cost & risk of contractor and deduct the same from Retention Money or any form of contractor money available with MIDHANI.

PS : The Guarantee period for water proofing work will be five years (05) from the date of completion of work. Contractor has to give the Guarantee for water proofing on Rs. 100/- stamp paper.

c) **Mobilization Advance:** 10% of basic work order value can be paid as mobilization advance against submission of Bank Guarantee(s) of equivalent value plus interest @14% p.a. which should be valid upto tenure of contract. Mobilization advance along with interest shall be recovered from each R.A. bill in 10 R.A. bill installments.

10. The security and safety rules of MIDHANI to be followed. The contractor shall take care of all labour laws regarding minimum wages, ESI, PF, C.A.R. Policy, Group Insurance etc., MIDHANI is no way responsible in this respect. MIDHANI is not liable for any claim in respect of any accidents during the work.

- 11.(a) MIDHANI reserves the right to operate partial or delete any item specified in BOQ without any compensation to contractor for the items un-operated or deleted.

(b) If at any time after acceptance of the tender MIDHANI feels that for any reasons whatsoever, if the whole or any part of the contract services is not required to be carried out, notice shall be given in writing of the fact to the contractor and upon receipt of such notice, the contractor shall stop the execution of such services as indicated in the notice forthwith. The contractor shall have no claim to any payment of compensation or

otherwise whatsoever on account of any profit or advantage which he might have derived from the execution of the services in full, but which he did not derive in consequence of the foreclosing of the services / contract. Contractor shall be paid at contract rates for the full amount of the work executed including such additional services as may be rendered necessary by said foreclosing.

12. Any new items (viz. supply of material, labour, skilled works etc) will be paid as per (a) or (b) whichever is less:
 - a) As per MES-SSR 2016 rates with applicable Percentage Index at that time.
 - b) As per market rate analysis.
13. The contractor should not cause any loss or damage to MIDHANI property/or personnel, if any loss or damage is caused the cost of the same will be recovered from the bills by MIDHANI, which will be final.
14. The quantities are subjected to $\pm 10\%$ variation and the contractor has to carry out the work on the same rates, terms and conditions within the variation limits as prescribed. In case if the quantities exceeding beyond 10% of the BOQ, the exceeding quantities beyond 10% shall be executed at the rates lowest among the tenderers. However any variation beyond BOQ or any new item to be executed shall be brought to the notice of Engineer-in-charge. A statement shall be prepared by the contractor and submitted to Engineer – In – Charge for approval in advance before execution of the same.
15. If the contractor fails to receive the work order within a week time from the date of intimation to him or if the contractor does not start the work within 3-7 days from the date of handover of site, or if the work is abandoned / stopped without bringing proper notice to Engineer-in-charge, the contract will be terminated and balance work will be carried out at the cost and risk of contractor.
16. Liquidated Damages: -
 - a) If the work is not completed within stipulated time, LD is leviable @ 1% per week or part thereof subject to a maximum of 10% of Purchase Order/ Contract price with Taxes and duties.
 - b) If the delays are not attributed to the contractor, the competent authority holds the right to waive off the L.D or reduce the L.D as the case may be.
17. Midhani reserves the right to penalize:
 - a) If the contractor fails to submit the 5% Security deposit within the stipulated period, then penalty of Rs 1000 per day maximum of 10,000.00 will be collected and further delay will empower MIDHANI to termination of contract and apply risk purchase.
 - b) If the contractor fails to receive the work order within 3 days of intimation, then a penalty Rs 500 per day will be levied subjected to maximum of Rs 5000.00. Further delay will empower MIDHANI to termination of contract and apply risk purchase.
 - c) Contractor has to maintain "**HINDRANCE REGISTER**" which is to be certified by both MIDHANI Site engineer and contractor engineer before release of running bills & final bill.
 - d) Resident Engineer: One engineer with at least 8 years practical experience in relevant work and three site engineers with at least 5 years relevant experience . Failing which, a penalty of Rs 35,000/ per month will be recovered from the bills payable to contractor upon certification of Engineer-in-charge.
18. The offer shall be valid for 3 months from the date of opening of tender.

19. The lowest bidder will be decided based on lowest value of total amount of price bid.
20. Incomplete or partially filled tenders will be rejected. Also, conditional offers are liable for rejection. MIDHANI reserves the right to accept or reject any or all tenders without assigning any reasons.
21. Contractor has to maintain site record, hindrance record, record for (Reinforcement & Structural etc) steel, cement etc.
22. Site has to be cleaned by the contractor before handing over to MIDHANI after completing the work. The final bill will be processed only after obtaining site cleaning certificate from the Engineer-in-charge.
23. The Earnest money deposit can be encashed by MIDHANI if the tenderer withdraws his tender proposals / modifies / changes / alters / impairs / derogates the tender document on his own after the first cover is opened or within the subsistence of the validity period of offer or fails to accept the Letter of Award (LOA) issued by MIDHANI or fails to submit security deposit or fails to turn-up and execute contract agreement or fails to commence the work as per LOA. Such bidders will be banned subject to action as may be deemed fit. In case of unilateral revision or withdrawal of offer by the bidder as above, shall also result in rejection of bid without notice. If there is any authentic information about the intending tenderer having formed a cartel / submitted Non-earnest bids, the tender will be cancelled and the Earnest Money Deposit of all the tenderer shall be forfeited, besides initiating actions like banning as may be deemed fit.

Yours faithfully,
For Mishra Dhatu Nigam Limited

V.S. Ramgopal
Addl. General Manager (Purchase)

DECLARATIONS: - 1) I have seen the site and understood the full scope of work, specified in tender, BOQ, drawings, Tentative Time schedule etc.
2) I agree to submit all the documents along with this offer duly signed.
3) I have taken into account of points mentioned in Minutes of Pre bid Meeting as circulated on MIDHANI website, if posted.

CONTRACTOR
SIGNATURE AND SEAL

P.S;- 1. All Parties shall attend pre bid meeting on 23-06-2018 at 11.30Hrs in PURCHASE DEPARTMENT.

Bill of quantities for technological foundations of Wide plate mill					
SL.NO	DESCRIPTION OF ITEM	Units	QUANTITY	Rate in Rs.	Total amount
SECTION-1: EARTHWORK					
A. ROUGH EXCAVATION, EXCAVATION OVER AREAS IN TRENCHES, ETC					
	Note: Adequate precautions for carrying out deep excavation work has to be taken by the Contractor. All items shall be read in conjunction with the preamble to Section -1 for Earthwork				
A-1	Earthwork in excavation in all types of soil, moorum (hard, compacted or soft), soft disintegrated rock, mica schist, boulders, quartz, etc and any type of fill material at all depths as specified below in foundations of structures and equipment pipe trenches, tunnels, sewerlines, drains, basement, cellars, pits etc to required levels and grades and dressing including all lifts complete as per the specifications and approved excavation scheme keeping the provisions of IS:3764/MES SSR and directions of the Engineer in charge in both dry and wet conditions including shoring, strutting, planking, sheeting, necessary pumping/ bailing out of water, slush removal etc clearing all rubbish, vegetation, debris, bushes etc. (if any) and transporting the excavated materials to spoil dumps / fill areas/excavated pits within a lead of 50 m at all heights and descents including dozing, levelling at the site of filling all as directed by the Engineer In charge, all tools, plant, machineries, transportation and labour complete (authorised working space, benching and side slopes for the excavation will be measured and paid under this item).				
	Note for item A-1				

	1. This item will be operated upon that category of strata which can be excavated with reasonable application of hydraulic excavators and manual excavation				
	i) upto 1.5m depth below existing ground level	cu m	17,695.90		
	ii) exceeding 1.5 m depth upto 3 m depth below existing ground level	cu m	12,997.30		
	iii) exceeding 3 m depth upto 4.5 m depth below existing ground level	cu m	5,101.30		
	iv) exceeding 4.5 m depth upto 6 m depth below existing ground level	cu m	1,915.20		
	v) exceeding 6 m depth upto 7.5 m depth below existing ground level	cu m	5,469.00		
	vi) exceeding 7.5 m depth upto 9.0 m depth below existing ground level	cu m	2,320.00		
	vii) exceeding 9.0 m depth upto 10.5 m depth below existing ground level	cu m	1,933.00		
	viii) exceeding 10.5 m depth upto 12 m depth below existing ground level	cu m	898.00		
	ix) exceeding 12 m depth upto 13.5 m depth below existing ground level	cu m	333.00		
	x) exceeding 13.5 m depth upto 15 m depth below existing ground level	cu m	787.00		
A-2	Earthwork in excavation in hard rock at depths as specified below in foundations of structures and equipment pipe trenches, tunnels, basement, cellars, pits etc to required levels and grades and dressing including all lifts complete as per the specifications, approved excavation scheme keeping the provisions of IS:3764/MES SSR and directions of the Engineer in charge in both dry and wet conditions including shoring, strutting, planking, sheeting, necessary pumping/bailing out of water, slush removal etc clearing all rubbish, debris, (if any) and transporting the excavated materials to designated dumpyard				

	within a lead of 50 m at all heights and descents including dozing, levelling at the site of filling all as directed by the Engineer In charge with the help of rock breaker, explosive blasting, chemical blasting, manual chiselling etc including breaking in required size for handling, all tools, plant, machineries, transportation and labour complete				
	(i) upto 1.5m depth below existing ground level	cu m	rate only		
	(ii) exceeding 1.5 m depth up to 3.0 m below existing ground level	cu m	333.0		
	(iii) exceeding 3 m depth upto 4.5 m depth below existing ground level	cu m	170.0		
	(iv) exceeding 4.5 m depth upto 6 m depth below existing ground level	cu m	1,622.0		
	(v) exceeding 6 m depth upto 7.5 m depth below existing ground level	cu m	rate only		
	(vi) exceeding 7.5 m depth upto 9 m depth below existing ground level	cu m	1,605.0		
	(vii) exceeding 9 m depth upto 10.5 m depth below existing ground level	cu m	1,442.0		
	(viii) exceeding 10.5 m depth upto 12 m depth below existing ground level	cu m	414.0		
	(ix) exceeding 12 m depth upto 13.5 m depth below existing ground level	cu m	rate only		
	(x) exceeding 13.5 m depth upto 15 m depth below existing ground level	cu m	rate only		
A-3	Backfilling in all positions at all heights and depths and descents in foundations, pits, pipe trenches, tunnels, sewer lines, around foundations and structures, in plinth etc with approved excavated material, soil, soft disintegrated rock obtained within a lead of 50m including reclaiming from spoil heaps at all heights, or reclaiming from dump at all depths, transporting, depositing, watering, well ramming, compacting, spreading levelling and dressing				

	complete all as per drawings, specifications and directions of the Engineer in charge, all tools, plant, machineries, transportation and labour complete				
	a) Backfilling in layers not exceeding 250 mm thickness including dozing, levelling, dressing and compacting with hand compactors/mechanical compactors/plate compactors/vibro rollers to the density of 95% at optimum moisture content complete in all respects as directed by the Engineer in charge at all depths below ground level.	cu m	68,774.0		
	b) Plinth filling below floors with soft disintegrated rock/ boulder mixed with good earth and excavated hard rock /boulders available within a lead of 50 m including breaking to pieces, spreading, watering and compacting with mechanical compactors/ vibro rammers in layers not exceeding 150 mm at all heights and depths and as directed by the Engineer. In charge CBR value shall not be less than 30%.	cu m	1,913.0		
A-4	Extra over item No. A-1, A-2 and A-3 for additional lead beyond 50 m				
	a) For temporary disposal filling of soft soil/hard dense soil/ soft disintegrated rock/hard rock & refilling back to foundation as directed by Engineer-in-charge				
	i) From 50m to 250m	cu m	74,390.0		
	b) For permanent disposal of all types of soil as directed by Engineer-in-charge (Material to be transported within campus of 800 mtr radius)				
	i) up to a distance of 800 mtr	cu m	20,590.0		
	c) For permanent disposal of hard rock as directed by Engineer-in-charge				
	i) up to a distance of 800 mtr	cu m	rate only		

A-5	Supplying, filling, watering, compacting and consolidating coarse sand in foundations, pipe trenches, pits, sewerlines, drainage lines, plinth, underneath flooring and in soaking pits etc at all heights and depths all as per drawings, specifications and directions of the Engineer incharge, all materials, tools, plant, machineries, transportation and labour complete	cu m	300.0		
A-6	Providing engineered/structural fill below foundations and sub-structures with well graded mixture of Soft Disintegrated Rocks (SDR)/boulders/excavated rocks and boulders within a lead 50m of size 150 mm down, with interstices filled up with predominantly granular fines. The granular fines shall be free of organic matter and/or other deleterious substances and the fraction passing Sieve No. 200, if any, shall be less than or equal to 10%. The fill shall be laid in layers, not exceeding 300 mm in thickness, and well compacted by several passes of 8 T - 10 T vibro-roller (where provision of ramp is available) or by other suitable mechanical means. The CBR value at any point within the fill shall not be less than 50%. The work shall include breaking the SDR/boulders to pieces, sizing, mixing with fines, spreading, watering and compacting, as specified, at all heights and depths and as directed by the Engineer-in-charge	cum	9,280.0		
	Note : Confirmatory control tests shall be carried out in every 500 cu.m. as per IS 2720				
	TOTAL OF EARTHWORK CARRIED OVER TO SUMMARY (RS.)				
SECTION-2: CONCRETE					
B. PLAIN & REINFORCED CEMENT CONCRETE					

	1. Suffix A & B to the grade of concrete indicate the use of size of the graded coarse stone aggregates in concrete as follows:				
	Note:				
	A - 20 mm and downgraded stone aggregate				
	B-12.5 mm and downgraded stone aggregate				
	2. In case of supply of concrete, Civil contractor will use Batching Plants or Ready Mix plants (jointly inspected & approved), Transit Mixers, Concrete Pumps, Boom Placer (if required) etc. for all major concreting works and the rate shall include the provision for the same.				
	3. All R.C.C. works shall be done using super-plasticizer as per manufacturer's specification / instruction and as directed by Engineer in charge. The rate shall include the provision for the above.				
	4. All items shall be read in conjunction with the preamble to Section -2 for Concrete				
B-1	Supplying, laying and compacting plain cement concrete of nominal mix (1:4:8) M 7.5 by volume as defined by IS:456 in all mudmats / levelling courses including mass filling of loose pockets etc under foundations, pipelines, tunnels, floors etc at all depths below finished ground level as per drawings, specifications and directions of the Engineer in charge, including curing including the cost of shuttering, propping and supporting, all materials, tools, plant, machineries, transportation and labour complete				
	a) with 40 mm downgraded coarse stone aggregates.	cu m	472.0		

B-2	Supplying, laying and compacting plain cement concrete of following grades as defined by IS:456 with graded stone aggregates in all foundations, bed blocks, manholes, chambers, scale flumes, tunnels, trenches, floors, roofs, pavements, screedings, encasing etc at all heights and depths above and below finished mill floor level/ plinth level to required levels, slopes etc including curing and the cost of shuttering with steel plates with all staging, propping, supporting etc as required including painting of steel shuttering with approved shuttering oil, including mixing of super plasticizer of approved make and quantity as per manufacturer's instruction, all as per drawings, specifications and directions of the Engineer in charge, all materials, tools, plant, machineries, transportation and labour complete:				
	a) for M10 A grade concrete-40 mm metal (1:3:6)	cu m	487.2		
	b) for M15 A grade concrete	cu m	714.4		
B-3	Supplying, laying and compacting reinforced cement concrete of following grades as defined by IS:456, in all foundations and super structures, in walls, slab, columns, beams, lintels, chajjas, facia, mullion, floor/roof slabs, stair, footings, basements, cellars, tunnels, trenches, drains, encasing of structural steel members / rafts, pile caps, equipment foundations including curing and cost of shuttering with steel plates with all staging, propping, supporting etc as required, including painting of steel shuttering with approved shuttering oil, including mixing of super plasticizer of approved make and quantity as per manufacturer's instruction, all as per drawings, specifications and directions of the Engineer in charge, all materials, tools, plant, machineries, transportation and labour complete:				

	a) At and at all depths below finished mill floor level/ plinth level				
	i) for M25 A grade concrete-Design mix	cu m	19,192.8		
	ii) for M30 A grade concrete-Design mix	cu m	46.4		
	b) At all heights above finished mill floor level/ plinth level				
	i) for M25 A grade concrete-Design mix	cu m	3,976.0		
	ii) for M30 A grade concrete-Design mix	cu m	46.4		
	c) Same as item no. B-3 above, but RCC with minimum cement content as per IS:3370 for water retaining structure below & above MFL/ Plinth level with concrete grade M30-Design mix	cu m	1,785.6		
	d) Extra over above items for wooden shuttering including supporting, scaffolding, etc in cut outs, pockets etc, core holes of any size and shape as shown in the drawing and as directed by the Engineer in charge, all tools, plant, machineries, transportation and labour complete	sqm	184.0		
B-4	Supplying, manufacturing, erecting and fixing in position at and at all heights and depths above and below finished ground level different types of precast R.C. units of concrete grade M-25 as defined by IS:456 with 20 mm and downgraded stone aggregates including shuttering and curing but excluding steel reinforcement, all as per drawings, specifications and directions of the Engineer in charge, all materials, tools, plant, machineries, transportation and labour complete				
	a) for units weighing upto 0.5 ton	cu m	3.2		
	b) for units weighing above 0.5 ton and upto 1.5 ton	cu m	3.2		
TOTAL OF CONCRETE CARRIED OVER TO SUMMARY (RS.)					
SECTION-3 : REINFORCEMENT AND EMBEDMENTS					
C. STEEL REINFORCEMENT FOR					

CONCRETE TMT Bars confirming Fe 500/500D					
	All items shall be read in conjunction with the preamble to Section -3 for Reinforcement and Embedment's				
C-1	Supplying, loading, unloading, transporting, straightening, decoiling, cutting, bending, cranking, bending spirally for hooping for columns, hooking end, stack welding as necessary, placing and fixing in position steel reinforcement including angles/pins provided for the approved welded joints, at all levels above and below finished floor level/ plinth level for reinforced cement concrete and precast reinforced cement concrete works including supplying approved mild steel wire (annealed) not less than 0.9mm dia, cover blocks etc, all as per drawings, specifications and directions of the Engineer in charge, all materials, tools, plant, machineries, transportation and labour complete:				
i)	TMT bars of all diameters having minimum yield strength of 500 N/mm ² as per IS 1786:2008 with Material and Labour below finished floor level	Kg	23,10,482.4		
ii)	TMT bars of all diameters having minimum yield strength of 500 N/mm ² as per IS 1786:2008 with Material and Labour above finished floor level	Kg	4,79,247.2		
D. STEEL EMBEDMENT IN CONCRETE (LIKE ITEMS NOT AVAILABLE IN MES SSR)					

D-1 a)	Supplying, fabricating, erecting and fixing in position at and at all heights and depths above and below finished ground level M.S. foundation/anchor bolts, anchor box and sleeves, bolts for PEB structures, permanent steel shuttering (with or without anchor pin) for anchor bolt pockets (straight or tapered) with all jigs, nuts and washers for embedding in permanent concrete or masonry work, true to line, level and plumb including all connected works and adjustments in shuttering and reinforcement, all as per drawings, specifications and directions of the Engineer In Charge, all materials, tools, plant and labour complete	Kg	3,850.0		
D-1 b)	'Ditto', except supply of steel materials. Fabricated steel materials to be obtained from Employer's stores/stockyard or directly from trucks at site, loading, unloading and transporting the materials to site.	Kg	65,644.0		
D-2 a)	Supplying, fabricating, erecting and fixing in position at and at all heights and depths above and below finished ground level M.S. inserts, curb angles, channels, joists and other rolled sections, M.S. and G.S pipes, pipe sleeves, with or without puddle flanges, M.S. rungs, ladders and M.S. nuts and washers for embedding in permanent concrete or fabricated ducts etc with all jigs, masonry work, true to line, level and plumb including all connected works and adjustments in shuttering and reinforcement all as per drawings, specifications and directions of the Engineer In Charge, all materials, tools, plant and labour complete. (Pipes should be medium duty as per IS:1239)				
i)	M.S. plates/flat inserts, angles, channels etc. with lugs	Kg	66,005.6		
ii)	Plain and corrugated G.I. Pipe sleeves/conduits of various diameter	Kg	2,393.0		
iii)	MS pipes/pipe sleeves/conduits with or without puddle flanges (rate	Kg	1,637.0		

	inclusive of puddle flanges)				
D-2 b)	'Ditto', except supply of steel materials. Fabricated steel materials to be obtained from Employer's stores/stockyard or directly from trucks at site, loading, unloading and transporting the materials to site.				
i)	M.S. plates/flat inserts, angles, channels, joists etc with lugs	Kg	rate only		
ii)	Plain and corrugated G.I. Pipe sleeves/conduits of various diameter	Kg	2,935.0		
iii)	MS pipes/pipe sleeves/conduits with or without puddle flanges	Kg	1,591.0		
D-3	Supplying and fixing of rails as mentioned below, M.S Bolts, M.S. U-bolts, MS fish bolts with nuts & washers, MS fish plates bearing plate M.S. cleat/clamp, butts etc. as per item no. D-2 and fixing rails on reinforced concrete base/concrete slab/structural beams all as per drawing and other permanent materials required for complete fixing of rails on including making holes in rails, laying, lining, BG railway track including bringing the track to correct line and level, gauging, aligning etc. as per drawings, specifications and directions of the engineer, all materials, tools, plant and labour complete on completion of the work, the unused material shall be referred by the contractor to the Employer at locations within the steel plant area as directed by the Engineer In Charge.				
	a) 52 /60 kg/m rail	Kg	12,561.0		
	b) CR 80/100/120	Kg	5,750.0		

D-4 (a)	Supplying, fabricating, erecting and fixing in position at all heights and depths above and below finished ground level chequered plate/ M.S. plate covers, M.S gratings, in floors, trenches, hatch, manholes etc, including supplying and applying complete painting with two coats of approved black bituminous paint over one coat of primer conforming to IS:2074 all as per drawings, specifications and directions of the Engineer In Charge, all materials and labour complete (Only plates will be measured under this item, frame work to be measured and paid under item D-5b)	Kg	1,77,300.0		
D-4 (b)	Taking delivery from Employer's stores or at site, unloading from trucks, fabricating, erecting and fixing in position at all heights and depths above and below finished ground level chequered plate/ M.S. plate covers, M.S gratings, in floors, trenches, hatch, manholes etc, including supplying and applying complete painting with two coats of approved black bituminous paint over one coat of primer conforming to IS:2074 all as per drawings, specifications and directions of the Engineer In Charge, all materials and labour complete (Only plates will be measured under this item, frame work to be measured and paid under item D-5b)	Kg	rate only		

D-5 (a)	Supplying, fabricating, erecting and fixing in position at all heights and depths above and below finished ground level structural steelwork in M.S. ladders, stairs, platforms, brackets, runners, stringers, posts, stiffeners, monorails, structural beams, frames in openings etc including supplying and fixing with mechanical anchor fastener/welding etc to correct line and level as shown in the drawing or as directed by the Engineer in charge and applying complete painting with two coats of synthetic enamel paint of make, colour and shade as approved by the Engineer In Charge over one coat of primer conforming to IS:2074, all as per drawings, specifications and directions of the Engineer In Charge, all materials, tools, plant and labour complete	Kg	56,650.4		
D-5 (b)	Taking delivery from Employer's stores or at site, unloading from trucks fabricated auxiliary steel items, erecting and fixing in position (including fasteners fixing) at all heights and depths above and below finished ground level structural steelwork in M.S. ladders, stairs, platforms, brackets, runners, stringers, posts, stiffeners, monorails, structural beams, frames in openings etc including fixing of mechanical anchor fasteners/ welding etc to the correct line and level, as shown in the drawing and as directed by the Engineer In Charge, all tools, plants and labour complete.	Kg	rate only		

D-6 a)	Supplying, fabricating, fixing at all heights and depths above and below finished ground level M.S. tubular hand railing including posts for hand railing top and mid rails, (toe guard to be measured as per item no. D-2) etc for roofs, gantry girders, stair cases, platform, walkway, fencing etc including supplying and applying of fasteners and of complete painting with two coats of synthetic enamel paint of make, colour and shade as approved by the Engineer In Charge over one coat of primer as specified and as shown on drawings and/or as directed by the Engineer In Charge, all materials, tools, plant, labour etc complete in all respect.	Kg	8,387.0		
D-6 b)	Ditto, except supply of steel materials. Materials to be obtained from Employer's stores/stockyard or directly from trucks at site, loading, unloading and transporting the materials to site	Kg	9,523.0		
D-7	Supplying, laying, jointing, fixing and embedding in all types of foundations and super structures Class B (Medium duty) galvanised steel pipes of approved quality conforming to IS:1239/IS:1978 of following diameters with necessary sockets, check nuts, jumpers etc for electrical conduit pipes including threading, bending, removing of burrs and cleaning of pipes, passing of 14 gauge G.S. pull wires through the pipes, blocking open ends with metal caps, fixing identification number tags including all welding etc as per drawings, specifications and directions of the Engineer in charge, all materials, tools, plant and labour complete				
	a) 50 mm dia	rm	6.0		
	b) 65 mm dia	rm	6.0		
	c) 80 mm dia	rm	603.0		
	d) 100 mm dia	rm	3701		
	e) 150 mm dia	rm	rate only		
	f) 200 mm dia	rm	rate only		

	g) 250 mm dia	rm	rate only		
D-8	Supplying, laying, jointing and fixing in position of approved P.V.C. conduit pipes of the following diameters in foundations and superstructures including bending, cutting, jointing with special resin, providing 14 gauge G.S pull wire through the pipes, fixing identification number tags etc as per drawings, specifications and directions of Engineer in charge, all materials, tools, plant and labour complete				
	a) upto 25 mm dia (nominal)	rm	rate only		
	b) above 25 mm and upto 50 mm dia (nominal)	rm	rate only		
	c) above 50 mm dia and upto 80 mm dia (nominal)	rm	rate only		
	d) 100 mm dia (nominal)	rm	rate only		
	e) 150 mm dia (nominal)	rm	6.0		
	f) 200 mm dia (nominal)	rm	2,939.0		
	g) 250 mm dia (nominal)	rm	919.0		
	h) 300 mm dia (nominal)	rm	140.0		
	TOTAL OF REINFORCEMENT AND EMBEDMENTS CARRIED OVER TO SUMMARY (RS.)				
SECTION-4 : STONE MASONRY WORK					
E. STONE MASONRY					
	Note: All items shall be read in conjunction with the preamble to Section - 4 for Stone Masonry work				
E-1	Constructing random uncoursed well bonded, bedded and solidly hearted rubble masonry with the stone boulders obtained from excavation in cement sand mortar (1:6) in foundations, retaining walls with flush pointing as per drawings, specifications and as directed by the Engineer in charge at all depths and heights below and above finished floor level including wastage, scaffolding and curing, fair cutting, lining, levelling etc, all materials, tools, plants, machineries, transportation and labour complete in all respect	cum	rate only		

	TOTAL OF STONE MASONRY WORK OVER TO SUMMARY (RS.)				
	SECTION-5 : EXTERNAL WATERPROOF				
F -1	Providing waterproofing to base, walls & vertical faces of underground structures as shown on drawings or as directed by Engineer In Charge and as specified under with a guarantee of waterproofing for a period of ten (10) years including, supply of all materials, tools, plant, machineries, transportation and labour complete which includes the following work:				
	i) Supplying and applying two coats of cementitious waterproofing compound like Raintite I of Sika/ MASTERSEAL 511 of BASF /Powercrete of Pidilite/ ShaliCrete of STP/ CHRYSO Armourcrete or approved equivalent according to manufacturer's instructions over concrete surfaces including rectification of any defects in concrete surfaces by rendering with (1:3) cement sand mortar before application of the approved cementitious compound				
	ii) Supplying, placing/drilling and fixing 15 mm dia M.S threaded nozzles having a minimum thickness of 16 gauge (medium quality) of suitable length in approximate grid pattern of 1.5 m c/c prior to or as per manufacturers specification prior to or during concreting or in hardened concrete in base, walls and vertical faces of under- ground structures and also providing/drilling 15 mm dia M.S threaded nozzles/packers at regular intervals not exceeding 1.0 m c/c along construction joints and at critical joints as directed, plugging both ends of the nozzles to prevent ingress of foreign materials all as per drawings and as directed by the Engineer In Charge.				

	iii) Injecting Intraplast EP of Sika/MasterFlow 150 of BASF/ Chryso Excem-C / Cebex 100 of Fosroc / Shaligrout IP of STP / Pidicrete AM of Pidilite non-shrink polymeric waterproof grouting compound or approved equivalent and mixed with cement slurry through the nozzles set in the base, walls and vertical faces of concrete under pressure by pump and finally sealing off the nozzles after the injection operation is over with Sika 4a of Sika/Chryso XEL03 /Renderoc Plug of Fosroc/ Instant Leak plug of Pidilite quick setting admixture or approved equivalent all as per instructions of the manufacturer and as directed by the Engineer In Charge				
	Note: For payment under this item inside surface area to be considered for measurement of underground structures.	sq m	5,913.0		
F-2	Supplying and painting one coat of approved hot bitumen using 1.5 kg/sq m of bitumen of 20/30 grade as per IS:702 for water proofing on all concrete/plastered surfaces at all depths below ground level including a coat of approved bituminous primer as per drawings, specifications and directions of the Engineer in Charge, all materials, tools, machineries, transportation and labour complete in all respect	sqm	30,233.6		
F-3	Supplying and fixing in position approved water stop in expansion/contraction joints and approved construction joints below and above finished floor level, all as per drawings, specifications and directions of the Engineer in Charge, all materials, tools, plant and labour complete				
	a) 225 mm wide 6 mm thick, dumb-bell shape, PVC water stop with centre bulb of approved make	rm	5,691.0		

	GRAND TOTAL RS			
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Note:

1. The excavation quantities indicated at A1 & A2 are meant for side dressing / clearance if required. However, the major part of excavation for the required level and dimension is carried out through a separate contract and will be completed before site handover to the successful bidder of the subject tender of machine foundation work.
2. Material required for back filling indicated at A-3 (A) and A-4 (A) will be available near to construction site only carting and labour charges only to be considered.
3. CR 80/100/120 indicated is for furnace and equipment at ground level / cellar level but not for overhead cranes.
4. Masonry and finishing works are not included in the present tender.
5. Dewatering of accumulated water, removal & disposal of slush will be paid as per the clause no 1.14.1(a) of MES-SSR, in conjunction with 3.7(c) & 3.11 (copy enclosed-Annexure-III).
6. Excavation not included for item no. 1.401/A-4 i (for backfilling).
7. Hard murrum Soil to be filled for item no. 1.601/ A-6 and approval of E-l/c to be taken
8. It will be responsibility of foundation construction contractor to hand over the machine foundation and PEB foundations viz PEB bolts, inserts, crane rails, centre of pockets/bolts, TOC etc to required level, alignment to centre line of all equipment foundations, PEB column foundations, centre to centre of bolts etc as per drawing and hand over the same to Contractor viz-PEB & equipment erection as the case may be.
9. Electrical Earthing is not in scope of the subject work tender.
10. Back filling to be considered with soil & rock available at site, but not PCC.
11. While quoting the rate in e- procurement format, it may be noted that items appearing as 01 cu.m or 01kg or 01rm in BOQ will be considered as "Rate only items" & the same will not be considered or has no effect on the grand total for deciding L-1 bidder.

Communications:

Postal, telephone and Fax facilities are available as follows: -

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