



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

Part-I (TECHNICAL BID)

**RETROFITTING WORK IN (A-B) AND (B-C)
BAYS OF CORE SHOP, MIDHANI,
KANCHANBAGH, HYDERABAD-58.**

Mishra Dhatu Nigam Limited
Kanchanbagh, Hyderabad

Tender Notice No: MDN/AP2071026/EADVT/153/17-18**Date:- 09-09-2017**

Two part tender is invited on behalf of Mishra Dhatu Nigam Ltd Hyderabad, (MIDHANI) for the work of “Retrofitting Work in (A-B) And (B-C) Bays of Core Shop, MIDHANI, Kanchanbagh, Hyderabad-58.

Particulars of the tender are:

Estimate cost : Rs. 16.00 lakhs

Earnest money deposit : Rs. 0.40 lakhs

Contract Period : 75 days (staggered) time (from date of handover of site is required for said work, (i.e. 50 days for structural steel work, brick work etc & 25 days for sheeting work)from the date of handing over of site.

Tender fee : Rs 1000/-.

The tender document can be obtained from <http://eprocuremidhani.nic.in>, Mishra Dhatu Nigam Limited, Kanchanbagh, Hyderabad on any working day from 01/09/17 to 09-10-2017. Tenders will be received up to 10.30 hrs on 09-10-2017 and part-1 (Technical Bid) will be opened on 10/10/2017 at 11.00 hrs. & price bid will be opened later. Tender documents are also available at our website www.midhani.com Interested parties may download the documents and participate in the tender. Along with the Tender Enquiry for the above work you are requested to furnish your offer through online <http://eprocuremidhani.nic.in> before last date of submission, along with Tender Fee Rs. 1000/- and EMD Fee Rs. 40,000/-, pay online through link <http://ebs.in/midhani/public> or visit MIDHANI website www.midhani.com> purchase > Tenders > Tender 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.

Tender Notice No: MDN/AP2071026/EADVT/153/17-18

Date:- 09-09-2017

Hyderabad, (MIDHANI) for the work of "RETROFITTING WORK IN (A-B) AND (B-C)
BAYS OF CORE SHOP, MIDHANI, KANCHANBAGH, HYDERABAD-58

To be submitted by 10.30 hrs on 09/10/17

Part-1 (Technical Bid) will be opened at 11.00 hrs on 10/10/17 in the through
eproc Addl. General Manager (I/C Purchase), 2nd Floor, corporate office, Mishra
Dhatu Nigam Ltd., Hyderabad.

Signature of the Office issuing the document

Name& designation

Date:

*Fill the name of the Contractor.

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

Tender Notice No: MDN/AP2071026/EADVT/153/17-18

Date:-09-09-2017

Two part tender is invited on behalf of Mishra Dhatu Nigam Ltd., Hyderabad, (MIDHANI) for the work of “**Retrofitting Work in (A-B) And (B-C) Bays of Core Shop**” from reputed contractors who are qualified, proven having similar experience.

1. The estimated cost of work is Rs 16.00 Lakhs. However, this estimated cost is only indicative & serves as rough guide to the tender.

Contract period - : (i) 75 days (staggered) time (from date of handover of site is required for said work, (i.e. 45 days for structural steel work, brick work etc & 15 days for sheeting work)from the date of handing over of site.

Total period . Time is essence of the contract; contractor has to mobilize materials & labour to complete within stipulated time period.

2. Chairman & Managing Director, MIDHANI shall be the accepting authority of this Contract.

3. Eligibility Criteria:

The Pre-qualification requirements for the works are as under:

- a) Constitution and legal Status.
- b) Registration with MIDHANI/ other organization if any.
- c) Copy of PAN/GIR no. Registration issued by Income Tax Authority.
- d) Certificate of GST Number.**
- e) Average Annual Financial Turnover during the last 3 years, ending 31st March 2017, should be at least 30% of the approximate estimated cost of the work. (Audited financial statement duly attested shall be attached).
- f) Earnest Money Deposit (EMD) in the form EMD of Rs 40,000. online through link <http://ebs.in/midhani/public> or visit MIDHANI website www.midhani.com> purchase > Tenders > EMD fee (Earnest Money Deposit)–ONLINE PAYMENT. The tenders without EMD/tender fee amount will be rejected; request for adjustment from pending bill will not be entertained. Please confirm whether you are MSME Unit or MSME Unit owned by SC/ST Entrepreneur. If yes, please submit latest valid documentary proof for extending benefits as per government guidelines. BG shall be valid for a period of 90 days. Original bank guarantee should be submitted before Due date of bid submission to AGM (Purchase & Store). Please confirm whether you are MSME Unit or MSME Unit owned by SC/ST Entrepreneur. If

yes, please submit latest valid documentary proof for extending benefits as per government guidelines

- g) Tender document fee: The cost Rs. 1000/- is to be submitted in the form of online through link <http://ebs.in/midhani/public> or visit MIDHANI website www.midhani.com> purchase > Tenders > Tender fee, EMD fee (Earnest Money Deposit) and security Deposit – ONLINE PAYMENT.
- h) Latest Bankers Solvency Certificate for Rs 5 lakhs from Nationalized / Schedule Bank issued not earlier than 12 months from the date of this NIT

OR

Balance sheet showing Positive net worth Rs 5.00 lakhs for preceding three financial years, duly attested by chartered accountant.

- i) Details of works carried out during the last 7 years in any Government/ Public Sector Unit/ Large Private Organizations with Certificate.
- j) Income Tax Returns for past Three years or audited balance sheets for last three years duly certified by Chartered Engineer.
- k) Experience of having successfully completed **similar structural steel works** 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
 - ii) Two similar completed works each costing not less than the amount equal to 50% of the estimated value mentioned in the tender notice / Or
 - iii) One similar completed works each costing not less than the amount equal to 80% of the estimated value mentioned in the tender notice.
- l) 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.
- m) The successful bidders shall submit PF&ESI number before commencement of the work and shall fulfill all the requirements as per PF/ESI acts.

- n) 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.
5. Tender document will be issued on payment towards tender fee. The tender document will be available from 09/09/17 TO 09/10/17.
6. The tenders shall be submitted Online only in the MIDHANI eprocurement portal on or before 09-10-2017 up to 10.30 hrs.
7. **Technical Bid (online)** will contain mainly:
- a. Credentials of contractor (as specified in the above clause –4(a)-eligibility criteria) along with “Technical bid”.
 - l) EMD of Rs. 40,000.00 online through link <http://ebs.in/midhani/public> or visit MIDHANI website www.midhani.com > purchase > Tenders > EMD fee (Earnest Money Deposit)–ONLINE PAYMENT. The tenders without EMD/tender fee amount will be rejected; request for adjustment from pending bill will not be entertained. Please confirm whether you are MSME Unit or MSME Unit owned by SC/ST Entrepreneur. If yes, please submit latest valid documentary proof for extending benefits as per government guidelines. BG shall be valid for a period of 90 days. Please confirm whether you are MSME Unit or MSME Unit owned by SC/ST Entrepreneur. If yes, please submit latest valid documentary proof for extending benefits as per government guidelines
- Latest Original Bank solvency (not older than one year from the date of this NIT) worth Rs. 5 Lakhs from any Nationalized/ Scheduled Bank shall be enclosed. (Also period of validity to be mentioned for one year). OR **Balance sheet showing Positive net worth Rs 5.0 lakhs for preceding three financial years, duly attested by chartered accountant.**
- b. Details as indicated in enclosed technical bid format.
 - c. Details of credentials of prospective tie up, sub- contractors along with proof.
 - d. Any other additional information, which is thought to be necessary by the tenderer.
 - e. MIDHANI employee sons/ daughter /near relatives are not to participate in tender.
8. **“Price Bid” (Online)**: The tenderer shall indicate his offer in item rate BOQ format and the bidder shall quote for all the tendered items.
9. **The TECHNICAL BID** will be opened at 11.00 hrs on 10-10-2017 & **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 contract document 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 treated as 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 to 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. Sales tax or any other tax and duties including service tax 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.

18. The tender submitted shall remain valid for a period of 90 days 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 18-09-2017 at 11.00am 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 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.
- 23.5 Further Technical clarifications, pl Contact- Sri Madan Mohan.G, Addl.G.M (PMO), Mob.no-9177304937, Land line-040-24343944,mail Id:- gmadanmohan@midhani.com
For commercial clarification, pl contact -Ms Indu, Sr Mgr(Pur), Landline;04024184202 & e-mail id- indu@midhani.com

24. *Language of the Bid*

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

25. Contractor has to quote overall price bid. The accuracy shall be up to two decimals

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

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

**(T.RAGHURAM)
Addl. General Manager (I/C Purchase)**

**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 not less than 40% of all the qualifying criteria stated in the bid document.
 - b. The other partners shall meet not less than 30% of all the qualifying criteria stated in the bid document.
- 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 may pre-qualify if they meet all the pre-qualification requirements, subject to written approval of the MIDHANI.

| 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 (06) |
| c) | Terms of payment | PAGE (20) |
| d) | General Conditions of contract | PAGE (14) |
| e) | Special conditions of contract | PAGE (42) |
| f) | Specification for Structural steel & Civil work. | PAGE (56) |
| 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 refuse to execute the items including extra/additional items.
- b) **Payment on Account**
FOUR running bills/interim bills & a final bill will be paid
- 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.
- 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 for works will be paid within 15 working days from the date of submission of the verified/certified bills by the Engineer.
- 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 75 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**

There is no escalation payment in this contract, if contract period exceeds more than 12 months, then escalation will be paid based on WPI (Whole Price Index).

The contracts may provide an escalation clause on account of increase in cost of building material during the currency of the contract period. The following formula may be adopted for this purpose.

$$V_m = (K/100) \times (0.9V(C+S)) \times (WI-WO)/WO.$$

Where, K = percentage of the cost of materials including the materials which are supplied by MIDHANI the material cost generally works out to 60% to 70% in respect of building works.

V_m = Variation in material cost i.e, increase or decrease in amount representing amount to be paid or recovered

V= value of work done during the period of reckoning;

C= cost of cement & S = cost of steel used in work – supplied by MIDHANI at pre-notified rates.

WI= Average All India Wholesale Price Index for all the commodities for the period under reckoning as published in RBI bulletins/ as published by Economic Adviser of Government of India. (Base: 1970-71 = 100).

WO = All India Wholesale Price Index for all commodities during the month stipulated for commencement of the work as published in RBI bulletin/ as Published by Economic Adviser to Government of India (Base : 197-71 = 100).

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 submitted online through link <http://ebs.in/midhani/public> or visit MIDHANI website www.midhani.com> purchase > Tenders > security Deposit –ONLINE PAYMENT or can deposit Bank Guarantee from any nationalized bank. The validity of B.G shall be equivalent to contract period plus three months extra. The 5% Security Deposit will be released after 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.

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 “Retrofitting Work in (A-B) And (B-C) Bays of Core Shop, MIDHANI”** (i) 75 days (staggered) time (from date of handover of site is required for said work, (i.e 45 days for structural steel work, brick work etc & 15 days for sheeting work)from the date of handing over of site.

Total period . Time is essence of the contract; contractor has to mobilize materials & labour to complete within stipulated time period. Time is essence of the contract; contractor has to mobilize materials & labour to complete within stipulated time period.

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, Liquidated damages at 1% per week to maximum of 10% of contract sum will be deducted.

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.

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 | Item | Stipulation |
|---------------|---|--|
| 1 | Estimated cost of the works | Rs 16.00 Lakhs |
| 7(b) | Earnest Money (2 ½ of the estimated cost of the works) | Rs 40,000 |
| | <u>General Contract Conditions</u> | |
| | <u>Chapter I</u> | |
| 3(e) | Accepting Authority | Chairman & Managing Director, MIDHANI |
| 3(h) | Market Rate-percentage addition to cover overheads and profit | 10% |
| | <u>Chapter II</u> | |
| 7(b), 7(c) | Payment of bills (4 RA bills & 1 final bill) | R.A. Bills in 15 days & final bill in 30 days from the date of certification of Engineer – In – Charge. |
| 7(j) I(a) | 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) | 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) | Suspension of work | |
| 7(l)(2)(i) | Percentage payable to cover contractor's indirect expenses for suspension exceeding 30 days and not exceeding 90 days | 5% maximum |
| 7(l)(3) | Percentage payable cover contractor's indirect expenses for suspension exceeding 90 days. | 5% maximum |
| 9 a&b | Security Deposit and Retention Money | 5% EACH |
| 10.1 | Time allowed for execution of work or time schedule | 75 days (staggered) time (from date of handover of site is required for said work, (i.e 45 days for structural steel work, brick work etc & 15 days for sheeting work)from the date of handing over of site.Mobilize materials & labour to complete within stipulated time period. |

| | | |
|----------|--|------------------------------|
| 10.3(g) | Authority competent to decide if any other cause of delay is beyond contractor's control | Chairman & Managing Director |
| 10.5 | Authority for granting Extension of Time | Chairman & Managing Director |
| 11(v) | Authority competent to reduce compensation amount | C&MD |
| 12.0 | Defects Liability Period | 12months |
| 20.8.1.1 | Insurances , CAR policy etc | |
| | <u>Special Contract Conditions</u> | |
| 3.1 | Water charges | Free of issue |
| 3.2 | 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 – 24340243/24184334

Fax : 040 – 2434 0041

E-mail : gmadanmohan@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, lcv's, 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.

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 4 MONTHS 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.

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.

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.

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:**

Quantity variation (up to $\pm 20\%$) statement shall be prepared by the contractor and submitted to Engineer – In – Charge for Employer approval. Such variation statement shall be submitted at the stage when the Running Account Bills value (up to date) exceeds the contract value and also for variations in scope of work.

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.

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 |
|---------|-------------------|----------|------------------|
|---------|-------------------|----------|------------------|

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 programmed shall be submitted by the contractor for the material approvals, within four weeks of the Architects order to commence. The detailed program 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 ($\frac{1}{2}$ 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 least for an hour before the workers are allowed to get into the manholes and the manholes so opened shall be 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, 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 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.
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SPECIFICATIONS FOR STRUCTURAL STEEL

1.0 GENERAL CONDITIONS

1.1 Application of Specification

This specification shall be read in conjunction with other documents forming the Contract, Viz. Form of Tender, Invitation of Tender, Articles of Agreement, General conditions of Contract, Special Conditions of Contract, Preamble to Bill of Quantities, Bill of Quantities and Drawings.

1.2 Site and Local Conditions

The Contractor is to visit the site and ascertain site and local conditions; traffic restrictions, obstructions in the area etc and allow for any extras likely to be incurred due to any such conditions. The work is inside the factory area, which is under security regulations.

1.3 Setting out and leveling

The Contractor is to set out and level the work and shall be responsible for its accuracy. He is to provide all instruments qualified staff and labour for getting his work checked by the Employer.

1.4 Safety Code

The Contractor shall take adequate precautions to ensure complete safety for prevention of accidents and shall be responsible for the same.

1.5 keeping works free from water

The Contractor shall provide and maintain at his own cost, labour, pumps and other equipment to keep the site free from water and continue to do so until the handing over of the site.

1.6 Rubbish

The contractor shall clear all rubbish, etc. and dump them suitably in allotted areas.

1.7 Bench Marks and Ground Water Gauges

The Contractor shall protect Surveyor's benchmarks and ground water gauges, Zero line marks and base line marks from damage or movement during work.

2.0 General

Applicable provisions of conditions of contract shall govern work under this section.

2.1 Work included

The Contractor shall furnish labour, materials, equipment and tools, so as to complete the work as specified herein and / or as shown in drawings and / or bill of quantities. The design drawings and the shop detail drawings, bill of materials,

Drawing Office Dispatch Lists (D.O.D.L'S) for the structures concerned will be supplied by the employer to the Contractor. The work required under this section shall include:-

- i) Supplying structural steel and all other materials, unless otherwise provided in the Contract;
- ii) Fabrication of structural steel work, delivery of the fabricated steel work to the site including providing one coat of shop paint as specified on all fabricated steel work;
- iii) Receiving at site, off-loading, stacking, transporting to the site of erection and erecting the structural steel work, including aligning, leveling and grouting;
- iv) Supplying and fixing all roof and side sheeting including sheeting bolts, down pipes gutters, flashings, ridging, glazing and all other materials necessary to complete the work according to the drawings and specifications;
- v) Providing two coats of finishing paint as specified on all structural steel work after erection.

3.0 **DRAWINGS AND LISTS**

The design drawings and the shop detail drawings, bill of materials, Drawing Office Dispatch Lists (DODLS) for the structures concerned will be supplied by the employer to the contractor.

4.0 **SCHEDULE OF ALLOWABLE STRESSES FOR DETAILING**

Deleted.

5.0 **MATERIALS**

Structural Steel: All structural steel shall be of tested quality and shall conform to IS:226 (St-42S) or IS:2062 (St-42w), as specified. High tensile steel, when specified, shall conform to IS: 961. All structural steel shall be free from rusts, scales, laminations, Cracks, fissures and other surface defects.

Bolts and Nuts: All bolts and nuts shall conform to IS:1363 and IS:1364 and unless shown or specified otherwise shall be hexagonal. All nuts shall fit tight.

Washers: Plain Washers shall be made of mild steel unless otherwise specified. Spring washers shall be provided for those parts which carry dynamic loads and where black bolts for connection are permitted.

Steel for Crane Rails: The steel to be used for crane rails shall be preferably acid open-hearth carbon steel or medium manganese conforming to latest IRS-T-12 or IRS-T-18 and IS:3443. Rail clips shall conform to IRS-M-10 or IRS-M-11. The rails shall be within the following tolerances:

Crane Rails**Tolerances**

| | | |
|-------------------|---|---------------|
| Head Width | ± | 2.0 mm |
| Thickness of head | ± | 1.0 mm |
| Flange Width | ± | 2.0 mm |
| Web thickness | ± | 2.0 mm |
| Height | ± | 1.0 mm |
| Weight | ± | 3.0 % - 2.0 % |

Steel Castings: Steel Castings shall conform to IS:1030.

Electrodes: Mild steel electrodes shall conform to IS:814 and IS-815 and high tensile steel electrodes, if required, to IS:1442. The Contractor shall furnish to the Employer a Certificate issued by the manufacture to the effect that the electrodes supplied are in accordance with the above specifications. For welding any particular position, the electrodes use shall be those recommended by the manufacturer for use in that position.

6.0 Other Materials

Other materials used in association with steel work shall comply with the appropriate Indian Standards.

Before ordering bought out items, special accessories and materials of any description, the Contractor shall submit for the approval of the Employer, the names of the proposed makers of suppliers together with the specifications of the materials and shall there after, send copies of the orders to the Employer.

If any sub-contractor engaged by the Contractor orders materials for the execution of his sub-contract, Contractor shall ensure that the above requirements also are complied with by his Sub-Contractor.

In addition to the special provisions made hereafter as to the sampling and testing of materials by particular methods, samples of materials and workmanship proposed to be employed in the execution of the work may be called for any time by the Employer and when so called for by Employer, the same shall be furnished by the Contractor free of cost without delay. The samples when approved, shall be kept by the Employer who shall reject all materials or workmanship not in conformity with the quality and character of the approved samples. Suitable labeled boxes for the storage of the said samples shall be provided by the Contractor free of cost.

The Contractor shall furnish to the Employer the following certificates, if required, before commencement of fabrication:

- i) A certificate stating the process of manufacture, physical properties and chemical composition of the steel supplied.
- ii) Test certificates by the manufacturer giving the results of each of the specified mechanical tests applied to the structural steel, bolts, nuts and rivets and the chemical composition of the same.

7.0 **FABRICATION**

7.1 **Standard**

All fabrication of structural steel work shall be in accordance with IS:800 and IS:823, unless otherwise stated herein. The steel materials for various purposes shall conform to the requirement of appropriate Indian standards.

7.2 **Types of Construction**

This specification covers the general requirements for fabricating structural steel and miscellaneous structural items. The steel structures will generally be of shop welded construction except for some crane girders supporting heavy and heavy duty cranes which will be riveted if shown in the design drawings. Site connections will generally be developed with welding with erection bolts, black bolts, turned and fitted or high strength friction grip bolts as shown in the drawings. The above connections are applicable in general unless otherwise shown in the design drawings.

7.3 **Storing Materials**

All materials shall be stored properly on skids, above the ground. It shall be kept clean and properly drained. Structural steel shall be stored and handled so that members are not subjected to excessive stresses and damage. Girders and beams shall be placed upright and stores. Long members, such as columns and chord shall be supported on closely spaced skids to prevent injury from deflection.

7.4 **Workmanship**

7.4.1 **General:**

All workmanship shall be equal to the best practice in modern structural shops. Greatest accuracy shall be observed in the manufacture of every part of the work and all similar parts shall be strictly interchangeable.

7.4.2 **Templates:**

Templates used throughout the work shall be all steel or shall be steel-bushed in such cases as the Employer may consider necessary. In cases where actual materials have been used as templates for drilling similar pieces, the Employer shall decide whether they are fit to be used as parts of the finished structure.

7.4.3 **Smithy Work and Forgings:**

All smithy work shall be accurately made to the dimensions shown on the drawings and shall be clean and sound and the metal shall not be burnt or injured in any way. All joggles shall be formed by pressure. Crank sections and knees may however be formed by cutting and welding.

7.4.4 **Straightening:**

All materials shall be straight and if necessary before being worked shall be straightened and / or flattened by pressure unless required to be of curvilinear form and shall free form twists.

7.4.5 **Clearance:**

The erection clearances for cleared ends of members connecting steel to steel should be not greater than 2.0mm at each end. The erection clearance at ends of beams without wed cleats is necessary suitably designed seatings should be provided.

7.4.6 **Shearing, Flame Cutting and Planning:**

Shearing or flame cutting may be used at the Contractor's option provided that a mechanically controlled cutting torch shall be used for the flame cutting and that the resulting edge shall be reasonably clean and straight. Sheared members shall be free from distorting at sheared edges.

Chipping of angle flanges and edges of plates shall be done without breaking the parent metal. Chipped edges shall be ground or finished with a file, and sharp corners, hammers rough faces shall be rounded off.

The edges and ends of all flange plates and web plates of plate girders and built-up columns of plates forming chords or web members of lattice girders and all cover plates, the ends of all angles, tees, channels and other sections forming the flanges of plate girders and columns and chords and web members of lattice girders shall be planned.

The top ends of intermediate stiffeners shall be planed or ground to fit tightly to the main angles or flanges. Care shall be taken to ensure a full bearing

of the stiffeners at the supports and at other points where concentrated load is applied. The ends shall not be drawn or caulked.

The butting surfaces at all joints of girders or columns shall be planed so as to be in close contact throughout the finished joint.

The ends of all built-up girders and of all columns shall be faced in and end-milling machine after the members have been completely assembled. Bearing edges for crane girder bearing stiffeners, column caps and bases and roof structure connections shall be machined as shown in drawings.

Unless clean square and true to shape, all flame cut edges shall be planed.

Cold sawn ends if reasonably clean and flame cut ends of sections not inferior to sawn ends in appearance need not be planed except for butting ends.

7.4.7 **Holing**

Holes for rivets and black bolts shall be not more than 1.5mm or 2.00mm (as the case may be depending on whether the diameters of the rivet or bolt is less than or more than 25mm) in diameter larger than the nominal diameter of the rivets or black bolt, unless specified otherwise. All holes, except as stated hereunder shall be drilled to the required size or sub-punched 3mm less in diameter and reamed thereafter to the required size. Thickness of the material shall not be greater than 16mm. All matching holes for rivets or black bolts shall be material shall be not be greater than 16mm. All matching holes for rivets or black bolts shall be register with each other so that a gauge of 1.5mm or 2.0mm as the case may be less in diameter than the hole can pass freely through the members assembled for riveting or bolting in the direction at right angle to such members. All holes for turned and fitted bolts shall be drilled and reamed, if necessary, to a tolerance of only plus 0.13mm unless specified otherwise, when the number of thickness to be riveted exceeds three or the total thickness is 90mm or more, the holes shall be drilled or reamed in position after assembly, except when steel bushed jigs are used. The parts shall be firmly bolted together during such block drilling and taken apart for removal of burrs after drilling.

Holes in purlins, side-sheeting runners, packing plates and lacing bars may be punched full size.

All punching and sub-punching shall be clean and accurate and all drilling shall be free from burrs.

No holes shall be made by gass cutting process.

7.4.8 **Assembly**

All parts assembled for riveting and bolting shall be in close contact over the whole surface and all bearing stiffeners shall bear tightly at both top and bottom without being drawn or caulked.

The component parts shall be so assembled that they are neither twisted nor otherwise damaged and specified cambers, if any, shall be provided.

All parts of riveted and welded members shall be held firmly in position by means of jigs or clamps while riveting. No drifting of holes shall be permitted except to draw the parts together and no drift used shall be larger than the nominal diameter of rivet or bolt. Drifting done during assembling shall not distort the metal or enlarge the holes.

7.4.9 **Riveting**

Rivets shall be heated uniformly to suit the method driving them without burning or excessive scaling and shall be of sufficient length to fill the holes completely and to provide a head of standard dimensions after driving. The rivet heads shall be of uniform size for same diameter of rivet and shall be concentric with the rivet shanks and in full contact with the surface of the work. Rivet shall, when driven, completely fill the holes and countersunk and any proudness of the countersunk shall be dressed off flush. Riveted members shall have all parts firmly drawn together before and during riveting.

All riveting shall be carried out by hydraulic or pneumatic machines unless specified otherwise. For riveted crane girders preferably hydraulic riveting should be adopted.

All rivets which are loose, burnt, with cracks or with badly formed, eccentric or deficient heads, or otherwise defective shall be cut out and replaced. In removing such rivets care shall be taken not to injure the adjacent metal and if necessary they shall be drilled out. Caulking and recupping shall not be permitted.

Special care shall be taken in heating and driving long rivets.

7.4.10 **Bolting:**

All turned and fitted bolts shall be carefully turned and shall be parallel throughout the barrel. The following limits of tolerance shall be permitted upon the diameter of the barrels of turned bolts and the holes which they are to fit.

| | |
|----------------|------|
| Barrel of bolt | Hole |
|----------------|------|

| | | | |
|---------------------|------|--------|--------|
| | High | 0.00mm | 0.13 |
| Limits of tolerance | Low | 0.13mm | 0.00mm |

The barrel of each turned bolt shall be of such a length that it is in full contact with the work through the screwed portion being made atleast 1.6mm less in diameter than the barrel or to suit the next smaller size of B.S.W, screw thread. The barrel portion shall be jointed to the threaded portion bay 45-degree chamfer within the thickness of the washer. Unless otherwise specified; faces of heads and nuts bearing on steel work shall be machined. All such bolts shall be provided with washers having a hole of 1.5mm larger in diameter than the barrel of bolt shall be provided with washers having a hole of 1.5mm larger in diameter than the barrel of bolt and thickness not less than 6mm so that the nut, when tightened, shall not bear on the unthreaded body of the bolt. In all cases, where the full bearing area of the bolt is to be developed, the threaded portion of the bolt shall not be within the thickness of the parts bolted together. The threaded; portion of each bolt shall project through the nut by atleast one thread. Tapered washers shall be provided for all heads and nuts bearing on beveled surface.

7.4.11 Field Rivets and Bolts:

Field rivets, bolts, nuts and washers shall be furnished in excess of the nominal numbers required. Where erection at site if not carried out by the contractor, he shall supply the full number of rivets, bolts, nuts and washers and other necessary fittings required to complete the work together with the following allowances in addition to the required numbers:

- | | | |
|----------------------------|------|--------------------|
| a) Rivets | | |
| From 1 to 50 | ... | 6% |
| From 51 to 500 | ... | 4% |
| Over 500 | ... | 3% (Minimum of 20) |
| b) Field bolts, nuts etc., | ... | 5% |

75. Welding

7.5.1 General:

The Welding and the welded work shall conform to IS: 816 and IS: 823, unless otherwise specified. The permissible stresses for welding shall be taken as 66 percent of those specified in IS:816 where welds are not tested by either radiographic or ultrasonic methods. As much work as possible shall be welded in shops and the layout and sequence of the operations shall be so arranged as to eliminate distortion and shrinkage stresses.

7.5.2 Plant and Equipment

The equipment used shall be of sufficient capacity to suit the welding procedure laid down and be capable of depositing the particular type or types of electrodes to be used under the conditions of current and voltage specified by the electrode manufacturer. The number of welding sets, both automatic and hand operated proposed to be used in the workshop for fabrication of the structural steel work shall be given by the tenderer along with his tender. Efficient means shall be provided for the accurate indication of the current and in addition, a pair of tong testers shall be supplied by the contractor for checking his work.

All equipment, accessories and connections shall be maintained in proper working order.

7.5.3 **Electrodes:**

All electrodes shall be kept under dry conditions. Any electrode damaged by moisture shall not be used unless it is guaranteed by the manufacturer that when it is properly dried, there will be no detrimental effect. Any electrode which has part of its flux coating broken away or is otherwise damaged, shall be rejected, Any electrode older than 6 months from the date of manufacture shall not be used.

7.5.4 **Welding procedure:**

The welding procedure shall be arranged by the Contractor to suit the details of the joints as indicated on the drawings and the position at which welding has to be carried out. Welding procedure shall cover the following.

- i) Type and size of electrodes)
- ii) Current and (For automatic welding) arc voltage:
- iii) Length of run per electrodes, or (For automatic welding) speed of travel;
- iv) Number and arrangement of runs in multi run welds;
When necessary the procedure shall also cover the following;
- v) Position of Welding
- vi) Preparation and set up of parts
- vii) Welding sequence
- viii) Pre or post heating
- ix) Any other relevant information.

The welding procedure shall be so arranged that the distortion and shrinkage stresses are reduced to a minimum and that the welds meet the requirement of quality specified here under.

The Contractor shall record the approved welding procedure and shall provided each operator with all relevant details. Alternative approved procedure may be furnished in such cases when it is desirable to make the fullest use of available

plant. The Welding procedure then laid down shall be strictly followed and no variation shall be permitted without the approval of the Employer.

Preening of the welds involving deformation of the weld surface either during de slugging operation or thereafter, shall not be allowed.

7.5.5 **Fusion Faces and Surrounding Surfaces:**

Fusion faces and the surrounding surfaces within 50mm of welds shall be free from all mill scale and free from oil, paint or any substance which might affect the quality of the weld or impede the progress of welding. They shall be free from irregularities such as would interface with the opposite of the specified size of weld or be the cause of defects.

All mill scale within 50mm of welds shall be removed prior to welding either by pickling followed by through power wire brushing or by other approved methods.

If preparation or cutting of the fusion faces is necessary the same shall be carried out by shearing, chipping, gas cutting or flame gouging.

Where hand gas-cutting or hand-gouging is employed, the blow-pipe or gouging blow-pipe shall be properly guided.

7.5.6 **Assembly for Welding:**

Parts to be welded shall be properly assembled and hold firmly in position by means of jigs and clamps prior to and during welding.

7.5.7 **Welding Crane Girders:**

Automatic submerged arc welding shall be employed for fabrication of welded crane girders.

7.5.8 **Accuracy of Fit-Up:**

Parts to be fillet welded shall be brought into as close contact as practicable and the gap due to faulty workmanship or incorrect fit up shall not exceed 1.5mm . if greater separation occurs at any position, the size of fillet weld shall be increased at such positions by the amount of the gap.

7.5.9 **jigs and Manipulators:**

Jigs and manipulators shall be used where practicable and shall be designed to facilitate welding and to ensure that all welds are easily accessible to the operators.

7.5.10 Ends of Butt Welded joints:

The ends of butt joints shall be welded so as to provide the full throat thickness. This may be done by the use of extension pieces cross-runs or other approved means.

7.5.11 Weld Face and Reinforcement of Butt Welds:

The weld face shall at all places be deposited proud of the surface of the parent metal. Where a flush surface is required the surplus metal shall be dressed off.

7.5.12 Testing of Butt Welds:

Butt welded joints are to be radio graphically tested by the Contractor, if so directed. If such tests indicate the joints to be defective, cost of tests and the rectification of defective welds to the satisfaction of the Employer shall be borne by the Contractor. Otherwise cost of tests shall be borne by the Employer.

7.5.13 Minimum Leg Length and Throat Thickness in Fillet Welds:

The minimum leg length of a fillet weld as deposited shall be not less than the specified size. In no cases shall a concave weld be deposited unless specifically permitted. Where permitted, the leg length shall be increased above that specified. So that the resultant throat thickness is as great would have been obtained by the deposition of a flat-faces weld of the specified leg length.

7.5.14 Deslagging

After making each run of welding all slag shall be thoroughly removed.

7.5.15 Quality of welds:

The weld metal, as deposited (including tack welds if to be incorporated) shall be free from cracks, slag inclusions, porosity, cavities and other deposition faults. The weld metal shall be properly fused with the parent metal without undercutting or overlapping at the toes of the weld. The surfaces of the weld shall have a uniform consistent contour and regular appearance. If, in the opinion of the Employer, a weld is faulty, it shall be cut out in such a way so as not to impair the subsequent strength of the structure and replaced with sound weld to the satisfaction of the Employer.

7.5.16 Weather Conditions:

Welding shall not be done under such weather conditions which might adversely affect the efficiency of the welding.

7.5.17 Qualification and Testing of Welders:

The Contractor shall satisfy the Employer that the welder are suitable for the work upon which they will be employed and shall produce evidence to the effect that welders have satisfactorily completed appropriate tests as described in IS: 817. The Employer may at his discretion order periodic tests of the welders and / or of the welds produced by them. Such tests shall be at the expense of the Contractor.

7.5.18 Supervision:

The Contractor shall employ a competent welding supervisor to ensure that the standard of workmanship and the quality of the material comply with the requirements laid down in this specification.

7.6 Matching of Butts, Caps and Bases

Column splices and butt joints of struts and compression members depending on contact for stress transmission shall be accurately machined and close butted over the whole section. In column caps and bases the ends of shafts together with the attached gussets, angles, channels, etc., after riveting, bolting and / or Welding together as the case may be should be accurately machined so that the parts connecting butt over the entire surfaces of contact. Care shall be taken that those connecting angles or channels are fixed with such accuracy that they are not reduced in thickness by machining by more than 0.8mm.

7.7 Slab Bases and Caps

Slab bases and caps, if applicable, shall be in one solid piece and except when cut from plating with the surfaces, shall be accurately machined over the bearing surfaces and shall be in effective contact over the whole area of the machined end of the stanchions. A bearing face need not be machined if it is to be grouted directly to a foundation. Provided it is true and parallel to the Machine face. To facilitate grouting, holes shall be provided where necessary in stanchion bases for escape of air.

7.8 Crane Rails

The rails shall be reasonably free from twist and the camber shall not exceed 0.2 percent of the length. The rails shall be straight and deviation from straightness shall not exceed + _ 1.5mm.

Rail joints shall overlap joints of the gantry girder by minimum distance of 600mm. Joint in one crane rail shall be staggered to joint in the opposite crane rail.

7.9 Shop Painting

The preparation of surface and painting shall be carried out according to IS: 1477. The steel work shall be thoroughly cleaned by steel wire brushing to remove rust, mill scale, grease, dust etc. After cleaning, the whole of the steel work, except rivets, bolts nuts and machined, surfaces shall be given one shop coat of red oxide Zinc chromate paint conforming to IS:2074, unless specified otherwise. Paint shall be applied by brush conforming to IS:486 and IS:487. Painted surfaces shall have no brush marks and shall be uniform in colour. All rivets, bolts, nuts and washer etc, shall be thoroughly cleaned and dipped in boiled linseed oil. All machine surfaces shall be well coated with a mixture of white lead and tallow. Surfaces which are to be held in contact by riveting or bolting shall be painted before assembly, and the parts brought together while still wet. Unless specified otherwise, all surfaces inaccessible after riveting or welding shall be given two coats of approved finishing paint before assembly. Welds and adjacent parent metal shall not be painted prior to deslagging, inspection and approval. Parts which are to be encased in concrete shall not be painted or oiled.

Structural steel work exposed to corrosive medium shall be treated with one coat of approved primer suitable for final application of specified finishing paint at site.

7.10 Marking, Packing and Dispatching

Each piece shall be distinctly marked before delivery, in accordance with the approved marking diagram and shall bear such other marks as will facilitate erection. For easy identification at site a small distinguishing mark for each building shall be painted on each end of every member dispatch from fabrication shop. The fabricated steel work shall be dispatched in such portions may be found convenient for erection or as ordered by the Employer to meet the time schedule.

All projecting plates or bars and all ends of members at joints shall be stiffened, all straight bars and plates shall be bundled, all screwed ends and machined surfaces shall be suitably packed and all rivets, bolts, nuts, washers and small loose parts shall be packed separately in cases so as to prevent damage or distortion during transit.

7.11 Shop Assembly

The steel work shall be temporarily shop assembled as necessary so that accuracy of fit may be checked before dispatch. The parts shall be shop assembled with a sufficient number of parallel drifts to bring and keep the parts in place.

In the case of parts drilled or punched, through steel jigs with bushed resulting in all similar parts being interchangeable, the steel work may be shop erected in such portion as agreed by the employer.

8.0 **INSPECTION AND TESTING**

The Employer shall have free access at all reasonable times to the Contractor's works where the fabrication of the steel work is carried out and shall be afforded all reasonable facilities by the Contractor for satisfying himself that the fabrication is being undertaken in accordance with the provisions of this specification and drawings.

The Contractor shall continually inform the Employer of the progress in fabrication and as to when individual pieces will be ready for inspection. The Contractor shall give a minimum of three (3) working days notice to the Employer of the readiness of individual pieces for inspection.

Unless directed otherwise, inspection shall be made at the place of manufacture prior to dispatch.

Should any structure or part of a structure be found not to comply with any of the provisions of this specification, it shall be liable for rejection. No structure or part of the structure, once rejected shall be resubmitted for test, except in cases where the Employer considers the defect as rectifiable.

Defects which may appear during fabrication shall be made good with the consent of and according to the procedure laid down by the Employer.

All gauges and templates necessary to satisfy the Employer shall be supplied by the Contractor. The Employer may, at his discretion, check the test results obtained at the Contractor's work by independent tests at the Government Test House or elsewhere, and should the material so tested be found to be unsatisfactory, the costs of such tests shall be borne by the Contractor and if satisfactory the cost shall be borne by the Employer.

9.0 **MEASUREMENT**

Measurement for structural steel work shall be made on the calculated weight of steel work as determined from the dimensions given on the approved drawings or any approved amendments thereto. In the case of mild steel plates the calculated weight shall be calculated on the basis of weight per meter run specified in the relevant Indian Standard.

The Weights of all plates shall be calculated using the overall square dimensions, no deductions being made for skew cut. However, the weight of skew cut or holes shall be deducted when calculating the weights if the area of such cut or holes is greater than 0.15 Sq.m.

No additional weight for weld metal deposited shall be allowed in the measurements. For riveted work the weight of actual rivet heads shall be added to the weight of steel work and no deductions will be made for rivet holes. Weights of bolts and nuts shall be calculated on the basis of one and half (1 ½) percent of the weight of structural steel work according to Drawing Office Dispatch (D.O.D) lists and no deduction shall be made for bolt holes.

The cost of all oiling, painting, temporary erection cleats, making, packing and delivery to site shall be included in the rates quoted in the Bill of quantities.

The weights to which the rates quoted shall be applicable shall be as shown on the D.O.D lists and no allowance for wastage shall be permitted.

10.0 **ERECTION**

10.1 **Standard**

The erection of steel work shall be carried out in accordance with IS: 1800 and in an expeditious manner in conformity with the drawings and specifications.

10.2 **Erection Drawings**

The approved erection drawings and any approved arrangements drawings, specifications or instructions accompanying them shall be followed in erecting structural steel work.

Erection drawings for structural steel work shall consist of line diagrams shown every detailed member in position with the respective erection mark.

Erection marks shall appear on the structural steel member as detailed and all steel work shall be erected with marks in the same relative position as shown on the plan or elevation.

Any discrepancy between drawings and specifications shall be brought immediately to the attention of the Employer for his decision.

10.3 **Storing and Handling of Materials**

The fabricated materials on receipt at site shall be carefully unloaded, examined for defects, sorted out for each building and stacked securely on skids above level ground. The ground shall be kept clean and properly drained. Girders and beams shall be placed upright and stored. Long members, such as columns and chords, shall be supported on skids, placed near enough to prevent injury from deflection.

The fabricated material shall be verified with respect to making plan or shipping lists which shall be supplied by the Contractor.

Any material found damaged or defective shall be stacked separately and the damaged or defective portions shall be identified by painting in distinct colour. Such materials shall be dealt with as ordered by the Employer.

The Contractor shall unload the fabricated materials promptly on delivery. Otherwise he shall be responsible for demurrage charges, if any. **If any.** In no case will the Contractor be paid for double handling of materials.

The handling and storing of the component parts of a structure shall involve the use of method and appliances not likely to produce injury by twisting, bending or otherwise deforming the metal. No member slightly bent or twisted shall be put in place until the defects are corrected and members seriously damaged in handling shall be rejected.

All small bends or twists received by members shall be rectified before such members are put in place; any serious bends or damage shall be reported at once to the Employer by the Contractor for instructions. The straightening of bent edges of plates, angles and other shapes shall be done by methods not likely to produce fracture of other injury.

Following the completion of the straightening of a bend or buckle, the surface of the metal shall be carefully inspected by the Contractor of evidence of incipient or other fractures.

10.4 **Setting out**

The Contractor shall be responsible for checking the alignment and levels of foundations and correctness of foundation bolt centers, well in advance of starting erection work and shall be responsible for any consequences for non-compliance thereof. Discrepancies, if any shall immediately be brought to the notice of the Employer for his advice.

The Contractor shall assume full responsibility for the correct setting out or all steel work and erecting it correctly as per alignment and levels shown on the drawings and plumbing of vertical members. Datum points will be fixed by the Employer near the work site. Notwithstanding any assistance rendered to the Contractor by the Employer, if at any time during the progress of the work any error should appear or arise therein, on being required to be so, the Contractor at his own cost shall remove and amend the work to the satisfaction of the Employer.

10.5 **Erection Equipment**

Before starting erection, the Contractor shall submit to the Employer for his approval the method he proposes to follow and number and types of equipment and temporary work he proposes to use for the erection.

The approval of the Employer shall not be considered as relieving the Contractor for the loads which the erection equipment and temporary work will be called upon to carry or support. Adequate allowance and provision shall be made for lateral forces and wind loads. Drawings for such temporary work shall be submitted to the Employer for prior approval, if so desired by him.

The Contractor shall plumb and level all steel work and shall thoroughly brace and guy the structures during erection to keep them plumb and rigid till completion. As the work progress, the steel members shall be securely bolted up to take care of all dead loads, wind and erection stresses, including those due to erection equipment or its operation.

No riveting, permanent bolting, welding or grouting shall be done until proper alignment has been obtained and approved by the Employer.

10.6 Erection Tolerances

10.6.1 Erection Tolerances for Buildings without Cranes

The maximum tolerances for line and level of steel work shall be $\pm 3.0\text{mm}$ on any part of the structure. The structure shall not be out of plumb more than 3.5mm on each 10m section of height but not more than 7.00mm per 30m section of height.

These tolerances shall apply to all parts of the structures unless stated otherwise on the drawings.

10.6.2 Erection Tolerance for Building containing Cranes

| <u>Component</u> | <u>Description</u> | <u>Variation allowed</u> |
|-----------------------------|---|--------------------------------|
| Main columns and roof posts | a) Shifting of Column axes at foundation level With respect to building line: | |
| | 1) In Longitudinal direction | $\pm 3.0 \text{ mm}$ |
| | ii) In Lateral direction | $\pm 3.0 \text{ mm}$ |
| | b) Deviation of both major column axes from vertical between foundation and other member connection levels: | |
| | i) for a column upto and including 10m height | $\pm 3.5 \text{ mm from true}$ |

| | | |
|--------------------------|--|--|
| | | vertical. |
| | b) ii) for a column greater than 10m but less than 40m height. | ± 3.5 mm from true vertical for 10m length measured between connection levels but not more than ± 7.0 mm per 30m length. |
| | c) for adjacent pairs or columns across the width of building prior to placing of truss. | ± 9.0 mm on true span. |
| | d) for any individual column deviation of any bearing or resting level from levels shown on drawings. | 3.0 mm |
| | e) for adjacent pairs of columns either across the width of building or longitudinally, level difference allowed between bearing and seating levels, which are supposed to be at the same level. | 3.0 mm |
| Truss | a) Deviation at Centre of span of upper chord member from vertical plan running through center of bottom chord. | 1/1500 of the span or not greater than 10mm whichever is less. |
| | b) Lateral displacement of top chord at center of span from vertical plan running through center of supports. | 1/250 of depth of truss or 20mm whichever is less. |
| Crane Girders and Tracks | a) Difference in levels of crane rail measured between adjacent columns. | 2.0 mm |
| | b) Deviation to crane rail gauge | ± 3.0 |
| | c) Relative shifting of ends of adjacent crane rail in plan and elevation after jointing. | 1.0mm |
| | d) Deviation of crane rail axis from center line of web | |

10.7 Field Connections

All field connections in the trusses, columns, roof girders, floor girders, crane, surge and auxiliary girders, column bracings etc shall be riveted or welded with erection bolts as shown in drawings. Connections of purlins, girts roof bracings, wind girders, catwalk ways, staircases, ladders, handrails and second ary members may be bolted with black bolts, except where welded connections are

required. The above connections shall be applicable in general unless otherwise shown in the design drawings.

All nuts for securing runways and gantries shall be locked against turning after tightening.

Holes of erection joints to be riveted or bolted (with machined bolts) shall be filled with temporary bolts and plugs, after mounting the structures. The number of temporary bolts and plugs shall not be less than 50% of the total number of holes. In joints where the number of holes is equal to 5 or less, not less than 3 holes shall be filled. The number of plugs shall be about 20% of the holes filled.

The number of washers on permanent bolts shall not be more than two for the nut and one for the bolt head.

Use of 'high strength friction grip' bolts in place of rivets may be permitted for field connections at the discretion of the Employer.

10.8 **Field Riveting**

Rivets driven at the site shall be heated and driven with the same care as those driven in the shop. Hand riveting shall not be permitted.

10.9 **Field Welding**

All field assembly and welding shall be executed in accordance with the requirements for shop fabrication, excepting such as manifestly apply to shop conditions only. Where the steel has been delivered painted, the paint shall be removed before field welding, for a distance of at least 50mm on either side of the joints.

10.10 **Bedding and Grouting**

Bedding and grouting shall be carried out with mortar grout or cement concrete grout as shown in drawings or in bill of quantities. The Contractor shall provide screed bars or mild steel flats and fix them in mortar.

The bedding and grouting shall not be carried out until a sufficient portion of steel work including columns, girders, beams, trusses, bracings etc has been properly aligned, leveled and plumbed and approval of the Employer has been obtained.

Immediately before grouting, the space under the base plate and around bolts shall be thoroughly cleaned and made free from any foreign material. The grout shall be prepared with correct quantity of water to get desired consistency and shall be vibrated and compacted so that the entire grouting space and holes are filled up with dense grout.

10.11 Painting after Erection

Two final coats of approved finishing paint as shown in drawings and/or in bill of quantities shall be applied to the steel work after erection. Structural steel work exposed to corrosive medium shall be treated with two coats of approved paint as specified in drawings and/or bill of quantities over a coat of approved primer. Painting of steel work shall be carried out according to IS: 1477. Paints shall be of approved brands and only ready mixed paints shall be used, unless otherwise approved. The paint for the second coat shall be product of the same manufacturer supplying paint for first coat. Each coat shall be allowed to dry before the succeeding coat is applied. Finished surface shall have no brush marks and shall be uniform in colour.

Paint shall be applied by brushes conforming to Is: 486 & IS: 487. rags, inferior quality brushes etc shall not be used.

All rivet and bolt heads and the site welds after deslagging shall be cleaned. Damaged or deteriorated paint surfaces shall be made good first with the same type of paint as the shop coat. Where specified, surfaces which will be in contact after site assembly shall receive two coats of finishing paint (In additional to shop priming) and shall be brought together while the paint is still wet.

Surfaces, which will be inaccessible after site assembly, shall receive the full specified protective treatment before assembly.

Site painting shall not be done in frosty or foggy weather or when humidity is such as to cause condensation on the surface to be painted.

10.12 Correction of Misfits

Correction of minor misfits, a reasonable amount of reaming and cutting of excess stock from rivets will be considered a legitimate part of the erection.

Any error in shop work which prevents the proper assembling and fitting up of parts by the moderate use of drift pins or a moderate use of reaming and slight chipping or cutting shall immediately be reported to the Employer and his approval of the method of correction obtained.

2 Fabrication drawings

The contractor has to submit the shop fabrication drawing for approval of MIDHANI

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, manufacturer's 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 manufacturer's 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 becomes inaccessible 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 paint 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 with rain water shall be 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. First coat of primer paint shall be applied not later than 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

FINISHING PAINTS

- 3.1.23 Choice of finishing paint shall be done from the following paints (unless specified otherwise) depending upon the environment to which steel structures are exposed, all subject to approval by the Engineer / Consultant.
- i. Synthetic enamel of approved colour as per IS : 2932 – 1974
 - ii. Aluminium paint as per IS : 2339 – 1963
 - iii. High build coat tar pitch or bitumen paint (Cold applied)
 - iv. Chemical resisting paints

- a. Epoxy based finishing paints
- b. Chlorinated rubber based paint
- v. Heat resistant finishing paint for structures subject to temperature above 150 degree C. Silicon based Aluminium the paints shall be of reputed make like Berger / Asian paint or as approved by the Engineer / Consultant

For all painting work on structural items, the unit of measurement shall be metric tonne. The calculation of weight for painting is similar to that for structural works mentioned above.

6. GROUTING:

Providing and grouting with Non-shrink Cementious previous grout material in required size of packing's (Fosroc Chemical : Conbextra GP2) as per the manufacture specifications (50% chips allowance)

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 there under. 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

LIST of material to be used in this construction

| Sl. No | Description of Material | <u>Approved Brands</u> |
|---------------|--------------------------------|--|
| 1 | White cement | Birla or JK |
| 2 | <u>Luppum</u> | Alteak or Birla putty |
| 3 | <u>Enamel paints</u> | Asian/Berger/Nerolac |
| 4 | <u>Acrylic Emulsion</u> | Asian Paints/Berger Paint/ Nerolac Paints. |
| 5 | <u>Cement based paint</u> | ACE |
| 6 | <u>Cement</u> | 53 Grade O.P.C confirming to IS 12269 to be approved by MIDHANI. |
| 7 | <u>SAND</u> | Good River sand –Zone-III/IV- VIJAWADA/BODHAN/KARIMNAGAR/Kothha kota |
| 8 | <u>Bricks</u> | <u>36 kg/Sq.cm</u> |
| 9 | <u>RMC</u> | RMC confirming to IS 4926 to be approved by MIDHANI. |
| 10 | Structural Steel | VSP/SAIL/JINDAL(JSW)/TATA |

CHECK LIST OF DOCUMENTS TO BE ENCLOSED BY CONTRACTOR IN TECHNICAL BID for "RETROFITTING WORK IN (A-B) AND (B-C) BAYS OF CORE SHOP", MIDHANI.

| SL. NO | DESCRIPTION OF PRE-QUALIFICATION CRITERIA | YES ENCLOSED | NO-NOT ENCLOSED |
|--------|---|--------------|-----------------|
| 1. | EMD (Rs 40000.00) | | |
| 2. | Latest bank solvency for Rs 5 lakhs not older than one year from the date of release of this advertisement. | | |
| 3. | Details of ESI & PF registration. | | |
| 4. | Details of similar Experience certificate in the last 7 years Along with experience certificates | | |
| | A 3 similar completed works each costing not less than the amount equal to 40% of the estimated cost. OR B 2 similar completed works each costing not less than the amount equal to 50% of the estimated cost. OR C one similar completed works each costing not less than the amount equal to 80% of the estimated cost. PS: - 1)Experience certificates shall be duly self attested. | | |
| 5. | Details of registration of firm in MIDHANI or Large Private Organizations or other Government organization if any. | | |
| 6. | PAN number/ GIR number issued by I.T authority | | |
| 7. | GST REGISTRATION NUMBER | | |
| 8. | Latest income tax clearance certificate or 3 years IT returns or 3 years audited balance sheets duly attested by Chartered Accountant. | | |
| 9. | Average Annual Turnover during the last 3 years, ending 31st March 2017, should be at least 30% of the approximate estimated cost of the work | | |
| 10. | RTGS details (Bank details for e-payment) | | |

Declaration by contractor

1. I have seen the site and understood the full scope of work viz Specifications, drawings 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 return 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:-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.